

```

Python 2.7.13 (v2.7.13:a06454b1afa1, Dec 17 2016, 20:53:40) [MSC v.1500 64 bit
(AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py
[[0, 10, 30, 31], [10, 0, 22, 18], [30, 22, 0, 18], [31, 18, 18, 0]]
4
Average = 16
Tau0 = 0.03125
iter_counter = 1
starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [2, 3], 18starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [2, 3], 18starting ant = 4

Explorationstarting ant = 5

avg = 0.00137208781362starting ant = 6

p = 0.00173611111111starting ant = 7

Ant 0 : [2, 3, 1], 36starting ant = 8

Exploitationstarting ant = 9

Ant 2 : [1, 0], 10starting ant = 10

Exploitationstarting ant = 11

Ant 3 : [1, 0], 10starting ant = 12

Exploitationstarting ant = 13

Ant 1 : [2, 3, 1], 36starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [0, 1], 10starting ant = 16

Exploitationstarting ant = 17

Ant 5 : [0, 1], 10starting ant = 18

Explorationstarting ant = 19

avg = 0.00209385521886
p = 0.003125

```

Ant 6 : [1, 0], 10
Exploration
avg = 0.00172491039427
p = 0.003125
Ant 7 : [0, 1], 10
Exploration
avg = 0.003125
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploitation

Ant thread 0 terminating.Ant 8 : [2, 3], 18

Exploration
avg = 0.00139941077441
p = 0.00142045454545
p = 0.00173611111111
Ant 9 : [2, 3], 18
Exploitation
Ant 2 : [1, 0, 2], 40
Exploitation
Ant 10 : [0, 1], 10
Exploration
avg = 0.00209385521886
p = 0.003125
Ant 11 : [1, 0], 10
Exploration
avg = 0.0010248655914
p = 0.00104166666667
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 12 : [2, 3], 18
Exploration
avg = 0.00172491039427
p = 0.003125
Ant 13 : [0, 1], 10
Exploration
avg = 0.003125
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00172491039427

p = 0.003125
Ant 14 : [0, 1], 10
Exploration
avg = 0.00209385521886
p = 0.003125
Ant 15 : [1, 0], 10
Exploitation
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 16 : [2, 3], 18
Exploration
avg = 0.00209385521886

p = 0.003125
Ant 17 : [1, 0], 10
Exploitation
Ant 5 : [0, 1, 3], 28
Exploration
avg = 0.00209385521886
p = 0.003125
Ant 18 : [1, 0], 10
Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.0010248655914
p = 0.00104166666667
Ant 6 : [1, 0, 2], 40
Exploration
avg = 0.00157828282828
p = 0.00173611111111
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [2, 3, 1], 36
Exploitation
Ant 9 : [2, 3, 1], 36
Exploitation
Ant 2 : [1, 0, 2, 3], 58
ExploitationUpdate called by 2

Ant 10 : [0, 1, 3], 28Ant thread 2 terminating.

Exploitation
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploitation

Ant thread 3 terminating.Ant 12 : [2, 3, 1], 36

Exploration
avg = 0.00157828282828
p = 0.00173611111111
Ant 13 : [0, 1, 3], 28
Exploitation
Ant 14 : [0, 1, 3], 28
Exploration
avg = 0.0010248655914
p = 0.00104166666667
Ant 15 : [1, 0, 2], 40
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00137208781362

p = 0.00173611111111
Ant 16 : [2, 3, 1], 36

Exploitation
Ant 17 : [1, 0, 2], 40
Exploitation
Ant 5 : [0, 1, 3, 2], 46
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.0010248655914

p = 0.00104166666667
Ant 18 : [1, 0, 2], 40
Exploitation
Ant 19 : [2, 3, 1], 36
Exploration
avg = 0.00173611111111
Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173611111111

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 1, 0], 46

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00173611111111

Ant 10 : [0, 1, 3, 2], 46
ExplorationUpdate called by 10

avg = 0.00173611111111Ant thread 10 terminating.

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.003125

Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611111111

Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111111

Ant 14 : [0, 1, 3, 2], 46

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.001736111111111

Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.003125

Ant 16 : [2, 3, 1, 0], 46
ExplorationUpdate called by 16

avg = 0.001736111111111Ant thread 16 terminating.

Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.001736111111111

Ant 18 : [1, 0, 2, 3], 58
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 1, 76
Ant thread 19 terminating.iter_counter = 2

starting ant = 0
Explorationstarting ant = 1

avg = 0.00125946969697starting ant = 2

p = 0.00127840909091starting ant = 3

p = 0.0015625starting ant = 4

Ant 0 : [2, 3], 18starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [2, 3], 18starting ant = 7

Explorationstarting ant = 8

avg = 0.00188446969697starting ant = 9

p = 0.0028125starting ant = 10

Ant 2 : [1, 0], 10starting ant = 11

Explorationstarting ant = 12

avg = 0.00198759469697starting ant = 13

p = 0.003121875starting ant = 14

Ant 3 : [1, 0], 10starting ant = 15

Explorationstarting ant = 16

avg = 0.00155241935484starting ant = 17

p = 0.0028125starting ant = 18

Ant 4 : [0, 1], 10starting ant = 19

Exploitation

Ant 0 : [2, 3, 1], 36

Exploration

avg = 0.00165554435484

p = 0.003121875

Ant 5 : [0, 1], 10

Exploitation

Ant 6 : [1, 0], 10

Exploration

avg = 0.00132081653226

p = 0.001734375

Ant 1 : [2, 3, 1], 36

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18

Exploration

avg = 0.00165658591734

p = 0.0031249996875

Ant 10 : [0, 1], 10

Exploitation

Ant 2 : [1, 0, 2], 40

Exploitation

Ant 11 : [1, 0], 10

Exploration

avg = 0.00131734006676

p = 0.00173611110937

Ant 12 : [2, 3], 18

Exploration

avg = 0.00169096102046

p = 0.00312499999688

Ant 13 : [0, 1], 10

Exploration

avg = 0.00169096102149

p = 0.00312499999997

Ant 14 : [0, 1], 10

Exploitation

Ant 3 : [1, 0, 2], 40

Exploitation
Ant 15 : [1, 0], 10
Exploration
avg = 0.00131734006733
p = 0.00173611111109
Ant 16 : [2, 3], 18
Exploration
avg = 0.00198863636363
p = 0.00312499999997
Ant 17 : [1, 0], 10
Exploitation
Ant 18 : [1, 0], 10
Exploitation
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 19 : [2, 3], 18
Exploitation
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [0, 1, 3], 28

Exploration
avg = 0.000974457157258
p = 0.00104165625
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3], 28

Exploration
avg = 0.00132167590726
p = 0.00173609375
Ant 8 : [2, 3, 1], 36
Exploration
avg = 0.00132168450101
p = 0.0017361109375
Ant 9 : [2, 3, 1], 36
Exploitation
Ant 10 : [0, 1, 3], 28
Exploration
avg = 0.00173611111111
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [1, 0, 2], 40

Exploration
avg = 0.00132168458695
p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploration

avg = 0.00150726010014
p = 0.00173611110937
Ant 13 : [0, 1, 3], 28
Exploration
avg = 0.001507260101
p = 0.00173611111109
Ant 14 : [0, 1, 3], 28
Exploration
avg = 0.00173611111111
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000974462365071

p = 0.001041666666563
Ant 15 : [1, 0, 2], 40
Exploitation
Ant 16 : [2, 3, 1], 36
Exploration
avg = 0.000974462365586
p = 0.001041666666666
Ant 17 : [1, 0, 2], 40
Exploitation
Ant 18 : [1, 0, 2], 40
Exploration
avg = 0.0015625
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00132168458781

p = 0.001736111111111
Ant 19 : [2, 3, 1], 36
Exploration
avg = 0.001734375
Ant 5 : [0, 1, 3, 2], 46
ExploitationUpdate called by 5

Ant 6 : [1, 0, 2, 3], 58Ant thread 5 terminating.

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173609375

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [2, 3, 1, 0], 46
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0017361109375

Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00173611111111

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111109

Ant 14 : [0, 1, 3, 2], 46
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00173611111111

Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 1, 0], 46
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00173611111111

Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 2, 76
Ant thread 19 terminating.iter_counter = 3

starting ant = 0
Explorationstarting ant = 1

avg = 0.00118560606061starting ant = 2

p = 0.0015625starting ant = 3

Ant 0 : [2, 3], 18starting ant = 4

Explorationstarting ant = 5

avg = 0.00124289772727starting ant = 6

p = 0.001734375starting ant = 7

Ant 1 : [2, 3], 18starting ant = 8

Explorationstarting ant = 9

avg = 0.00184185606061starting ant = 10

p = 0.0028125starting ant = 11

Ant 2 : [1, 0], 10starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Exploitationstarting ant = 15

Ant 0 : [2, 3, 1], 36starting ant = 16

Exploitationstarting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Explorationstarting ant = 19

avg = 0.00162530241935

p = 0.003121875

Ant 5 : [0, 1], 10

Exploration

avg = 0.00194601231061

p = 0.00312496875

Ant 6 : [1, 0], 10

Exploration

avg = 0.00162633366935

p = 0.00312496875

Ant 7 : [0, 1], 10

Exploitation

Ant 1 : [2, 3, 1], 36

Exploration

avg = 0.00124347064394

p = 0.00173609375

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18
Exploitation
Ant 10 : [0, 1], 10
Exploration
avg = 0.00194602262311
p = 0.0031249996875
Ant 11 : [1, 0], 10
Exploitation
Ant 2 : [1, 0, 2], 40
Exploitation
Ant 12 : [2, 3], 18
Exploration
avg = 0.00166071908498
p = 0.00312499999688
Ant 13 : [0, 1], 10
Exploration
avg = 0.000928578629032
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 14 : [0, 1], 10
Exploration
avg = 0.00194602272623
p = 0.00312499999688
Ant 15 : [1, 0], 10
Exploitation
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00124347643097

p = 0.00173611111109
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [1, 0], 10
Exploration
avg = 0.00135653409091
p = 0.0015625
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 18 : [1, 0], 10
Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.00144247159091
p = 0.001734375
Ant 5 : [0, 1, 3], 28
Exploitation
Ant 6 : [1, 0, 2], 40
Exploration
avg = 0.00144333096591
p = 0.00173609375
Ant 7 : [0, 1, 3], 28
Exploitation

Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [2, 3, 1], 36

Exploration
avg = 0.00127632159778
p = 0.0017361109375
Ant 9 : [2, 3, 1], 36
Exploitation
Ant 10 : [0, 1, 3], 28
Exploration
avg = 0.000929099410282
p = 0.0010416665625
Ant 11 : [1, 0, 2], 40
Exploration
avg = 0.00173611111111
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00127632168372

p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploration
avg = 0.0014433396456
p = 0.00173611110937
Ant 13 : [0, 1, 3], 28
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00144333964646

p = 0.00173611111109
Ant 14 : [0, 1, 3], 28
Exploration
avg = 0.000929099461845
p = 0.00104166666563
Ant 15 : [1, 0, 2], 40
Exploitation
Ant 16 : [2, 3, 1], 36
Exploitation
Ant 17 : [1, 0, 2], 40
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000929099462366

p = 0.00104166666667
Ant 18 : [1, 0, 2], 40
Exploitation
Ant 19 : [2, 3, 1], 36

Exploration
avg = 0.001734375
Ant 5 : [0, 1, 3, 2], 46
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [2, 3, 1, 0], 46

ExplorationUpdate called by 8

avg = 0.003125Ant thread 8 terminating.

Ant 9 : [2, 3, 1, 0], 46
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0017361109375

Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.003125

Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611110937

Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [0, 1, 3, 2], 46

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00173611111111

Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.003125

Ant 16 : [2, 3, 1, 0], 46
ExplorationUpdate called by 16

avg = 0.0017361111111111Ant thread 16 terminating.

Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 3, 76
Ant thread 19 terminating.iter_counter = 4

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [2, 3], 18starting ant = 2

Explorationstarting ant = 3

avg = 0.00117642045455starting ant = 4

p = 0.001734375starting ant = 5

Ant 1 : [2, 3], 18starting ant = 6

Explorationstarting ant = 7

avg = 0.00114868951613starting ant = 8

p = 0.0015625starting ant = 9

Ant 0 : [2, 3, 1], 36starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [1, 0], 10starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [0, 1], 10starting ant = 16

Explorationstarting ant = 17

avg = 0.00159808467742starting ant = 18

p = 0.003121875starting ant = 19

Ant 5 : [0, 1], 10

Exploitation

Ant 1 : [2, 3, 1], 36

Exploration

avg = 0.00190766003788

p = 0.00312496875

Ant 6 : [1, 0], 10

Exploitation

avg = 0.00159911592742

p = 0.00312496875

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploration

avg = 0.00117699910038

p = 0.0017361109375

Ant 9 : [2, 3], 18

Exploration

avg = 0.0031249996875

Ant 0 : [2, 3, 1, 0], 46

Update called by 0Exploitation

Ant thread 0 terminating.Ant 10 : [0, 1], 10

Exploitation

Ant 11 : [1, 0], 10

Exploitation

Ant 2 : [1, 0, 2], 40

Exploration

avg = 0.00117699915767

p = 0.00173611110937

Ant 12 : [2, 3], 18

Exploration

avg = 0.00163350134304

p = 0.00312499999688

Ant 13 : [0, 1], 10

Exploitation

Ant 3 : [1, 0, 2], 40

Exploration

avg = 0.00163384509408

p = 0.00312499999997

Ant 14 : [0, 1], 10

Exploitation

Ant 15 : [1, 0], 10

Exploitation

Ant 4 : [0, 1, 3], 28

Exploitation

Ant 16 : [2, 3], 18

Exploration

avg = 0.00196496212121

p = 0.003125

Ant 17 : [1, 0], 10

Exploration
avg = 0.00196496212121
p = 0.003125
Ant 18 : [1, 0], 10
Exploration
avg = 0.00117699915825
p = 0.00173611111111
Ant 19 : [2, 3], 18
Exploration
avg = 0.00138494318182
p = 0.001734375
Ant 5 : [0, 1, 3], 28
Exploitation
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 6 : [1, 0, 2], 40

Exploration
avg = 0.00138580255682
p = 0.00173609375
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00123548639113
p = 0.00173609375
Ant 8 : [2, 3, 1], 36
Exploration
avg = 0.00123549498488
p = 0.0017361109375
Ant 9 : [2, 3, 1], 36
Exploitation
Ant 10 : [0, 1, 3], 28
Exploration
avg = 0.000888272797379
p = 0.0010416665625
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00123549507082

p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploitation
Ant 13 : [0, 1, 3], 28
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00138581123737

p = 0.00173611111109
Ant 14 : [0, 1, 3], 28

Exploitation
Ant 15 : [1, 0, 2], 40
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00123549507168

p = 0.00173611111109
Ant 16 : [2, 3, 1], 36
Exploration
avg = 0.000888272849457
p = 0.001041666666666
Ant 17 : [1, 0, 2], 40
Exploitation
Ant 18 : [1, 0, 2], 40
Exploration
avg = 0.00123549507168
p = 0.00173611111111
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 5 : [0, 1, 3, 2], 46
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173609375

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [2, 3, 1, 0], 46
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0017361109375

Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00173611111111

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [2, 3, 1, 0], 46

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611110937

Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [0, 1, 3, 2], 46

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 2, 3], 58

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 1, 0], 46

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00173611111111

Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 4, 76
Ant thread 19 terminating.iter_counter = 5

starting ant = 0
Explorationstarting ant = 1

avg = 0.00105929924242starting ant = 2

p = 0.0015625starting ant = 3

Ant 0 : [2, 3], 18starting ant = 4

Exploitationstarting ant = 5

Ant 1 : [2, 3], 18starting ant = 6

Explorationstarting ant = 7

avg = 0.00176898674242starting ant = 8

p = 0.0028125starting ant = 9

Ant 2 : [1, 0], 10starting ant = 10

Exploitationstarting ant = 11

Ant 3 : [1, 0], 10starting ant = 12

Explorationstarting ant = 13

avg = 0.00111194556452starting ant = 14

p = 0.0015625starting ant = 15

Ant 0 : [2, 3, 1], 36starting ant = 16

Exploitationstarting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Explorationstarting ant = 19

avg = 0.00157358870968

p = 0.003121875

Ant 5 : [0, 1], 10

Exploration

avg = 0.00119788306452

p = 0.001734375

Ant 1 : [2, 3, 1], 36

Exploitation

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18

Exploration

avg = 0.000799445564516

p = 0.0009375

Ant 2 : [1, 0, 2], 40

Exploitation

Ant 10 : [0, 1], 10

Exploitation

Ant 11 : [1, 0], 10

Exploitation

Ant 3 : [1, 0, 2], 40

Exploration

avg = 0.00111716961222

p = 0.00173611110937

Ant 12 : [2, 3], 18

Exploitation

Ant 13 : [0, 1], 10

Exploration

avg = 0.00160934912633

p = 0.00312499999997
Ant 14 : [0, 1], 10
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploitation

Ant thread 0 terminating.Ant 16 : [2, 3], 18

Exploitation
Ant 17 : [1, 0], 10
Exploitation
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.00193044507576
p = 0.003125
Ant 18 : [1, 0], 10
Exploration
avg = 0.00111716961279
p = 0.00173611111111
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [0, 1, 3], 28
Exploitation
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000851523689516

p = 0.00104165625
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00119874243952
p = 0.00173609375
Ant 8 : [2, 3, 1], 36
Exploitation
Ant 9 : [2, 3, 1], 36
Exploration
avg = 0.00173611111111
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 10 : [0, 1, 3], 28

Exploitation
Ant 11 : [1, 0, 2], 40
Exploration
avg = 0.00173611111111
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.0011987511192

p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploration
avg = 0.00133403566832
p = 0.00173611110937
Ant 13 : [0, 1, 3], 28
Exploration
avg = 0.00133403566918
p = 0.00173611111109
Ant 14 : [0, 1, 3], 28
Exploitation
Ant 15 : [1, 0, 2], 40
Exploitation
Ant 16 : [2, 3, 1], 36
Exploitation
Ant 17 : [1, 0, 2], 40
Exploration
avg = 0.0015625
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 18 : [1, 0, 2], 40

Exploration
avg = 0.00119875112007
p = 0.00173611111111
Ant 19 : [2, 3, 1], 36
Exploration
avg = 0.001734375
Ant 5 : [0, 1, 3, 2], 46
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611111111

Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [2, 3, 1, 0], 46

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 1, 0], 46

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0017361109375

Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.003125

Ant 12 : [2, 3, 1, 0], 46

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611110937

Ant 13 : [0, 1, 3, 2], 46

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111109

Ant 14 : [0, 1, 3, 2], 46

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 2, 3], 58

ExplorationUpdate called by 15

avg = 0.003125Ant thread 15 terminating.

Ant 16 : [2, 3, 1, 0], 46

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [1, 0, 2, 3], 58

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46

Update called by 19

Best: [2, 3, 1, 0], 76, 5, 76

Ant thread 19 terminating.iter_counter = 6

starting ant = 0

starting ant = 1Exploration

starting ant = 2avg = 0.00100545265152

starting ant = 3p = 0.0015625

starting ant = 4Ant 0 : [2, 3], 18

starting ant = 5Exploitation

starting ant = 6Ant 1 : [2, 3], 18
starting ant = 7Exploration
starting ant = 8avg = 0.00173792140152
starting ant = 9p = 0.0028125
starting ant = 10Ant 2 : [1, 0], 10
starting ant = 11Exploration
starting ant = 12avg = 0.00184104640152
starting ant = 13p = 0.003121875
starting ant = 14Ant 3 : [1, 0], 10
starting ant = 15Exploration
starting ant = 16avg = 0.00144841733871
starting ant = 17p = 0.0028125
starting ant = 18Ant 4 : [0, 1], 10
starting ant = 19Exploitation

Ant 0 : [2, 3, 1], 36
Exploration
avg = 0.00155154233871
p = 0.003121875
Ant 5 : [0, 1], 10
Exploration
avg = 0.00184207765152
p = 0.00312496875
Ant 6 : [1, 0], 10
Exploitation
Ant 1 : [2, 3, 1], 36
Exploration
avg = 0.00155257358871
p = 0.00312496875
Ant 7 : [0, 1], 10
Exploration
avg = 0.00106331723485
p = 0.00173609375
Ant 8 : [2, 3], 18
Exploration
avg = 0.00106332296402
p = 0.0017361109375
Ant 9 : [2, 3], 18
Exploitation
Ant 10 : [0, 1], 10

```
Exploration
avg = 0.000766376008065
p = 0.0009375
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00184208796402
p = 0.0031249996875
Ant 11 : [1, 0], 10
Exploitation
Ant 12 : [2, 3], 18
Exploration
avg = 0.00158695900433
p = 0.00312499999688
Ant 13 : [0, 1], 10
Exploration
avg = 0.00158695900537
p = 0.00312499999997
Ant 14 : [0, 1], 10
Exploration
avg = 0.000817938508065
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 15 : [1, 0], 10
Exploration
avg = 0.00106332302188
p = 0.00173611111109
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [1, 0], 10
Exploration
avg = 0.00184208806818
p = 0.003125
Ant 18 : [1, 0], 10
Exploration
avg = 0.00120063210227
p = 0.0015625
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.00106332302189
p = 0.00173611111111
Ant 19 : [2, 3], 18
Exploitation
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [0, 1, 3], 28

Exploration
avg = 0.000818454133065
p = 0.00104165625
Ant 6 : [1, 0, 2], 40
Exploration
avg = 0.003125
```


Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3], 28

Exploitation
Ant 8 : [2, 3, 1], 36
Exploration
avg = 0.00116568147681
p = 0.0017361109375
Ant 9 : [2, 3, 1], 36
Exploration
avg = 0.00128743757102
p = 0.0017361109375
Ant 10 : [0, 1, 3], 28
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000818459289315

p = 0.0010416665625
Ant 11 : [1, 0, 2], 40
Exploration
avg = 0.00116568156275
p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploitation
Ant 13 : [0, 1, 3], 28
Exploitation
Ant 14 : [0, 1, 3], 28
Exploration
avg = 0.00173611111111
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000818459340877

p = 0.00104166666563
Ant 15 : [1, 0, 2], 40
Exploration
avg = 0.00116568156361
p = 0.00173611111109
Ant 16 : [2, 3, 1], 36
Exploitation
Ant 17 : [1, 0, 2], 40
Exploration
avg = 0.000818459341398
p = 0.00104166666667
Ant 18 : [1, 0, 2], 40
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [2, 3, 1], 36

Exploration

avg = 0.001734375

Ant 5 : [0, 1, 3, 2], 46

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611111111

Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173609375

Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [2, 3, 1, 0], 46

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00173611111111

Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [2, 3, 1, 0], 46

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611110937

Ant 13 : [0, 1, 3, 2], 46

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111109

Ant 14 : [0, 1, 3, 2], 46

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00173611111111

Ant 15 : [1, 0, 2, 3], 58

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 1, 0], 46

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [1, 0, 2, 3], 58

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00173611111111

Ant 18 : [1, 0, 2, 3], 58

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46

Update called by 19

Best: [2, 3, 1, 0], 76, 6, 76

Ant thread 19 terminating.iter_counter = 7

starting ant = 0

Explorationstarting ant = 1

avg = 0.000956990719697starting ant = 2

p = 0.0015625starting ant = 3

Ant 0 : [2, 3], 18starting ant = 4

Explorationstarting ant = 5

avg = 0.00101428238636starting ant = 6

p = 0.001734375starting ant = 7

Ant 1 : [2, 3], 18starting ant = 8

Exploitationstarting ant = 9

Ant 2 : [1, 0], 10starting ant = 10

Exploitationstarting ant = 11

Ant 3 : [1, 0], 10starting ant = 12

Exploitationstarting ant = 13

Ant 0 : [2, 3, 1], 36starting ant = 14

Explorationstarting ant = 15

avg = 0.00142857560484starting ant = 16

p = 0.0028125starting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Exploitationstarting ant = 19

Ant 5 : [0, 1], 10

Exploration

avg = 0.0018141188447

p = 0.00312496875

Ant 6 : [1, 0], 10

Exploration

avg = 0.00153273185484

p = 0.00312496875

Ant 7 : [0, 1], 10

Exploration

avg = 0.00113505090726

p = 0.001734375

Ant 1 : [2, 3, 1], 36

Exploration

avg = 0.00101485530303

p = 0.00173609375

Ant 8 : [2, 3], 18

Exploration

avg = 0.0010148610322

p = 0.0017361109375

Ant 9 : [2, 3], 18

Exploration

avg = 0.000736613407258

p = 0.0009375

Ant 2 : [1, 0, 2], 40

Exploration

avg = 0.00156711716734

p = 0.0031249996875

Ant 10 : [0, 1], 10

Exploration

avg = 0.0018141291572

p = 0.0031249996875

Ant 11 : [1, 0], 10

Exploration

avg = 0.000788175907258

p = 0.001040625

Ant 3 : [1, 0, 2], 40

Exploration

avg = 0.00101486108949

p = 0.00173611110937

Ant 12 : [2, 3], 18

Exploration

avg = 0.00156746102046

p = 0.00312499999688

Ant 13 : [0, 1], 10

Exploitation

Ant 0 : [2, 3, 1, 0], 46

Update called by 0Exploitation

Ant thread 0 terminating.Ant 14 : [0, 1], 10

Exploitation

Ant 15 : [1, 0], 10

Exploration

avg = 0.00101486109006

p = 0.00173611111109

Ant 16 : [2, 3], 18

Exploitation

Ant 17 : [1, 0], 10

Exploration

avg = 0.00115869389205

p = 0.0015625

Ant 4 : [0, 1, 3], 28

Exploitation

Ant 18 : [1, 0], 10

Exploitation

Ant 19 : [2, 3], 18

Exploitation

Ant 5 : [0, 1, 3], 28

Exploitation

Ant 6 : [1, 0, 2], 40

Exploration

avg = 0.00124549076705

p = 0.00173609375

Ant 7 : [0, 1, 3], 28

Exploitation

Ant 1 : [2, 3, 1, 0], 46

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00113591028226

p = 0.00173609375

Ant 8 : [2, 3, 1], 36

Exploration

avg = 0.00113591887601

p = 0.0017361109375

Ant 9 : [2, 3, 1], 36

Exploration

avg = 0.00173611111111

Ant 2 : [1, 0, 2, 3], 58

Update called by 2Exploitation

Ant thread 2 terminating.Ant 10 : [0, 1, 3], 28

Exploitation

Ant 11 : [1, 0, 2], 40

Exploitation

Ant 3 : [1, 0, 2, 3], 58

Update called by 3Exploitation

Ant thread 3 terminating.Ant 12 : [2, 3, 1], 36

Exploitation

Ant 13 : [0, 1, 3], 28

Exploration

avg = 0.00124549944759

p = 0.001736111111109

Ant 14 : [0, 1, 3], 28

Exploration

avg = 0.000788696740071

p = 0.001041666666563

Ant 15 : [1, 0, 2], 40

Exploitation

Ant 16 : [2, 3, 1], 36

Exploitation

Ant 17 : [1, 0, 2], 40

Exploration

avg = 0.0015625

Ant 4 : [0, 1, 3, 2], 46

Update called by 4Exploitation

Ant thread 4 terminating.Ant 18 : [1, 0, 2], 40

Exploration

avg = 0.00113591896281

p = 0.001736111111111

Ant 19 : [2, 3, 1], 36

Exploration

avg = 0.001734375

Ant 5 : [0, 1, 3, 2], 46

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [2, 3, 1, 0], 46

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.001736111111111

Ant 11 : [1, 0, 2, 3], 58

ExplorationUpdate called by 11

avg = 0.003125Ant thread 11 terminating.

Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611110937

Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [0, 1, 3, 2], 46
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00173611111111

Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.003125

Ant 16 : [2, 3, 1, 0], 46
ExploitationUpdate called by 16

Ant 17 : [1, 0, 2, 3], 58Ant thread 16 terminating.
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 7, 76
Ant thread 19 terminating.iter_counter = 8

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [2, 3], 18starting ant = 2

Explorationstarting ant = 3

avg = 0.000970666647727starting ant = 4

p = 0.001734375starting ant = 5

Ant 1 : [2, 3], 18starting ant = 6

Exploitationstarting ant = 7

Ant 0 : [2, 3, 1], 36starting ant = 8

Explorationstarting ant = 9

avg = 0.00168479966856starting ant = 10

p = 0.0028125starting ant = 11

Ant 2 : [1, 0], 10starting ant = 12

Explorationstarting ant = 13

avg = 0.00178792466856starting ant = 14

p = 0.003121875starting ant = 15

Ant 3 : [1, 0], 10starting ant = 16

Exploitationstarting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Exploitationstarting ant = 19

Ant 5 : [0, 1], 10

Exploration

avg = 0.00110826456653

p = 0.001734375

Ant 1 : [2, 3, 1], 36

Exploitation

Ant 6 : [1, 0], 10

Exploration

avg = 0.00151487429435

p = 0.00312496875

Ant 7 : [0, 1], 10

Exploration

avg = 0.0031249996875

Ant 0 : [2, 3, 1, 0], 46

Update called by 0Exploitation

Ant thread 0 terminating.Ant 8 : [2, 3], 18

Exploration

avg = 0.000971245293561

p = 0.0017361109375

Ant 9 : [2, 3], 18

Exploration

avg = 0.00151488460685

p = 0.0031249996875

Ant 10 : [0, 1], 10

Exploitation

Ant 11 : [1, 0], 10

Exploitation

Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.000971245350852
p = 0.001736111110937
Ant 12 : [2, 3], 18
Exploration
avg = 0.00154925970998
p = 0.00312499999688
Ant 13 : [0, 1], 10
Exploration
avg = 0.00154925971101
p = 0.00312499999997
Ant 14 : [0, 1], 10
Exploitation
Ant 15 : [1, 0], 10
Exploration
avg = 0.000761389566532
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploration
avg = 0.000971245351425
p = 0.001736111111109
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [1, 0], 10
Exploitation
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.00184625800189
p = 0.003125
Ant 18 : [1, 0], 10
Exploration
avg = 0.000971245351431
p = 0.001736111111111
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [0, 1, 3], 28
Exploration
avg = 0.003125
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000761905191532

p = 0.00104165625
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00110912394153
p = 0.00173609375
Ant 8 : [2, 3, 1], 36
Exploration
avg = 0.00110913253528

p = 0.0017361109375
Ant 9 : [2, 3, 1], 36
Exploration
avg = 0.00120775497159
p = 0.0017361109375
Ant 10 : [0, 1, 3], 28
Exploitation
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 2 : [1, 0, 2, 3], 58
ExplorationUpdate called by 2

avg = 0.00110913262122Ant thread 2 terminating.

p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploration
avg = 0.00120775505753
p = 0.00173611110937
Ant 13 : [0, 1, 3], 28
Exploitation
Ant 14 : [0, 1, 3], 28
Exploration
avg = 0.000761910399345
p = 0.00104166666563
Ant 15 : [1, 0, 2], 40
Exploration
avg = 0.00173611111111
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00110913262208

p = 0.00173611111109
Ant 16 : [2, 3, 1], 36
Exploitation
Ant 17 : [1, 0, 2], 40
Exploration
avg = 0.0015625
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000761910399866

p = 0.00104166666667
Ant 18 : [1, 0, 2], 40
Exploration
avg = 0.00110913262209
p = 0.00173611111111
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 5 : [0, 1, 3, 2], 46
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploration
Ant thread 6 terminating.avg = 0.00173609375
Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration
Ant thread 7 terminating.avg = 0.003125
Ant 8 : [2, 3, 1, 0], 46
Update called by 8Exploitation
Ant thread 8 terminating.Ant 9 : [2, 3, 1, 0], 46
Update called by 9Exploration
Ant thread 9 terminating.avg = 0.0017361109375
Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration
Ant thread 10 terminating.avg = 0.00173611111111
Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploitation
Ant thread 11 terminating.Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploration
Ant thread 12 terminating.avg = 0.00173611110937
Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploitation
Ant thread 13 terminating.Ant 14 : [0, 1, 3, 2], 46
Update called by 14Exploration
Ant thread 14 terminating.avg = 0.00173611111111
Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploitation
Ant thread 15 terminating.Ant 16 : [2, 3, 1, 0], 46
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46

Update called by 19

Best: [2, 3, 1, 0], 76, 8, 76

Ant thread 19 terminating.iter_counter = 9

starting ant = 0

Explorationstarting ant = 1

avg = 0.000874120816288starting ant = 2

p = 0.0015625starting ant = 3

Ant 0 : [2, 3], 18starting ant = 4

Explorationstarting ant = 5

avg = 0.000931412482955starting ant = 6

p = 0.001734375starting ant = 7

Ant 1 : [2, 3], 18starting ant = 8

Explorationstarting ant = 9

avg = 0.00166215303504starting ant = 10

p = 0.0028125starting ant = 11

Ant 2 : [1, 0], 10starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000998219359879starting ant = 16

p = 0.0015625starting ant = 17

Ant 0 : [2, 3, 1], 36starting ant = 18

Exploitationstarting ant = 19

Ant 4 : [0, 1], 10

Exploitation

Ant 5 : [0, 1], 10

Exploration

```
avg = 0.00176630928504
p = 0.00312496875
Ant 6 : [1, 0], 10
Exploration
avg = 0.00149880248992
p = 0.00312496875
Ant 7 : [0, 1], 10
Exploration
avg = 0.00108415685988
p = 0.001734375
Ant 1 : [2, 3, 1], 36
Exploitation
Ant 8 : [2, 3], 18
Exploitation
Ant 9 : [2, 3], 18
Exploitation
Ant 10 : [0, 1], 10
Exploration
avg = 0.00176631959754
p = 0.0031249996875
Ant 11 : [1, 0], 10
Exploration
avg = 0.000685719359879
p = 0.0009375
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00093199118608
p = 0.00173611110937
Ant 12 : [2, 3], 18
Exploitation
Ant 13 : [0, 1], 10
Exploration
avg = 0.000737281859879
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 14 : [0, 1], 10
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [2, 3], 18
Exploration
avg = 0.00176631970169
p = 0.00312499999997
Ant 17 : [1, 0], 10
Exploration
avg = 0.003125
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploitation

Ant thread 0 terminating.Ant 18 : [1, 0], 10

Exploration
avg = 0.000931991186658
```

p = 0.00173611111111
Ant 19 : [2, 3], 18
Exploration
avg = 0.00108697955256
p = 0.0015625
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 5 : [0, 1, 3], 28
Exploitation
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.003125
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00108501623488

p = 0.00173609375
Ant 8 : [2, 3, 1], 36
Exploitation
Ant 9 : [2, 3, 1], 36
Exploration
avg = 0.00117378502131
p = 0.0017361109375
Ant 10 : [0, 1, 3], 28
Exploitation
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00108502491457

p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploitation
Ant 13 : [0, 1, 3], 28
Exploration
avg = 0.00173611111111
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [0, 1, 3], 28

Exploitation
Ant 15 : [1, 0, 2], 40
Exploitation
Ant 16 : [2, 3, 1], 36
Exploration
avg = 0.000737802693207
p = 0.00104166666666
Ant 17 : [1, 0, 2], 40

Exploitation
Ant 18 : [1, 0, 2], 40
Exploration
avg = 0.00108502491543
p = 0.00173611111111
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [0, 1, 3, 2], 46

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611111111

Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [2, 3, 1, 0], 46
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [1, 0, 2, 3], 58

ExploitationUpdate called by 11

Ant 12 : [2, 3, 1, 0], 46Ant thread 11 terminating.

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611110937

Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [0, 1, 3, 2], 46

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.001736111111111

Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 1, 0], 46
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.001736111111111

Ant 18 : [1, 0, 2, 3], 58
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 9, 76
Ant thread 19 terminating.iter_counter = 10

starting ant = 0
Explorationstarting ant = 1

avg = 0.000838792067992starting ant = 2

p = 0.0015625starting ant = 3

Ant 0 : [2, 3], 18starting ant = 4

Explorationstarting ant = 5

avg = 0.000896083734659starting ant = 6

p = 0.001734375starting ant = 7

Ant 1 : [2, 3], 18starting ant = 8

Exploitationstarting ant = 9

Ant 2 : [1, 0], 10starting ant = 10

Explorationstarting ant = 11

avg = 0.00174489606487starting ant = 12

p = 0.003121875starting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000976522423891starting ant = 16

p = 0.0015625starting ant = 17

Ant 0 : [2, 3, 1], 36starting ant = 18

Explorationstarting ant = 19

avg = 0.00138018161593

p = 0.0028125

Ant 4 : [0, 1], 10

Exploitation

Ant 5 : [0, 1], 10

Exploration

avg = 0.00174592731487

p = 0.00312496875

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 1 : [2, 3, 1], 36

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18

Exploration

avg = 0.000664022423891

p = 0.0009375

Ant 2 : [1, 0, 2], 40

Exploration

avg = 0.00151872317843

p = 0.0031249996875

Ant 10 : [0, 1], 10

Exploration

avg = 0.00174593762737

p = 0.0031249996875

Ant 11 : [1, 0], 10

Exploration

avg = 0.000896662437784

p = 0.00173611110937

Ant 12 : [2, 3], 18

Exploration

avg = 0.00151872328155

p = 0.0031249999688

Ant 13 : [0, 1], 10

Exploitation

Ant 3 : [1, 0, 2], 40

Exploitation

Ant 14 : [0, 1], 10

Exploration

avg = 0.00174593773049

p = 0.0031249999688

Ant 15 : [1, 0], 10

Exploration
avg = 0.000896662438357
p = 0.00173611111109
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [1, 0], 10
Exploration
avg = 0.003125
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploitation

Ant thread 0 terminating.Ant 18 : [1, 0], 10

Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.0010564065973
p = 0.0015625
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 5 : [0, 1, 3], 28
Exploitation
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.003125
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00106331929889

p = 0.00173609375
Ant 8 : [2, 3, 1], 36
Exploration
avg = 0.00106332789264
p = 0.0017361109375
Ant 9 : [2, 3, 1], 36
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 10 : [0, 1, 3], 28

Exploration
avg = 0.000716105705141
p = 0.0010416665625
Ant 11 : [1, 0, 2], 40
Exploration
avg = 0.00106332797858
p = 0.00173611110937
Ant 12 : [2, 3, 1], 36
Exploitation
Ant 13 : [0, 1, 3], 28

Exploration
avg = 0.00173611111111
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [0, 1, 3], 28

Exploration
avg = 0.000716105756704
p = 0.001041666666563
Ant 15 : [1, 0, 2], 40
Exploration
avg = 0.00106332797944
p = 0.00173611111109
Ant 16 : [2, 3, 1], 36
Exploration
avg = 0.000716105757219
p = 0.001041666666666
Ant 17 : [1, 0, 2], 40
Exploitation
Ant 18 : [1, 0, 2], 40
Exploration
avg = 0.00106332797945
p = 0.00173611111111
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.001734375

Ant 5 : [0, 1, 3, 2], 46
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611111111

Ant 6 : [1, 0, 2, 3], 58
ExplorationUpdate called by 6

avg = 0.00173609375Ant thread 6 terminating.

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [2, 3, 1, 0], 46

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [2, 3, 1, 0], 46
ExplorationUpdate called by 9

avg = 0.0017361109375Ant thread 9 terminating.

Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.001736111111111

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.003125

Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [0, 1, 3, 2], 46
ExploitationUpdate called by 14

Ant 15 : [1, 0, 2, 3], 58Ant thread 14 terminating.
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.003125

Ant 16 : [2, 3, 1, 0], 46
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.001736111111111

Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.001736111111111

Ant 18 : [1, 0, 2, 3], 58
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 10, 76
Ant thread 19 terminating.iter_counter = 11

starting ant = 0
Explorationstarting ant = 1

avg = 0.000806996194527starting ant = 2

p = 0.0015625starting ant = 3

Ant 0 : [2, 3], 18starting ant = 4

Exploitationstarting ant = 5

Ant 1 : [2, 3], 18starting ant = 6

Explorationstarting ant = 7

avg = 0.00162342729171starting ant = 8

p = 0.0028125starting ant = 9

Ant 2 : [1, 0], 10starting ant = 10

Explorationstarting ant = 11

avg = 0.00172655229171starting ant = 12

p = 0.003121875starting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000956995181502starting ant = 16

p = 0.0015625starting ant = 17

Ant 0 : [2, 3, 1], 36starting ant = 18

Exploitationstarting ant = 19

Ant 4 : [0, 1], 10

Exploitation

Ant 5 : [0, 1], 10

Exploration

avg = 0.0010429326815

p = 0.001734375

Ant 1 : [2, 3, 1], 36

Exploration

avg = 0.00172758354171

p = 0.00312496875

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.00086486077786

p = 0.00173609375

Ant 8 : [2, 3], 18

Exploration

avg = 0.000864866507027

p = 0.0017361109375

Ant 9 : [2, 3], 18

Exploitation
Ant 2 : [1, 0, 2], 40
Exploitation
Ant 10 : [0, 1], 10
Exploration
avg = 0.00172759385421
p = 0.0031249996875
Ant 11 : [1, 0], 10
Exploitation
Ant 12 : [2, 3], 18
Exploration
avg = 0.00150570511996
p = 0.00312499999688
Ant 13 : [0, 1], 10
Exploitation
Ant 3 : [1, 0, 2], 40
Exploration
avg = 0.00150604887099
p = 0.00312499999997
Ant 14 : [0, 1], 10
Exploration
avg = 0.00172759395734
p = 0.00312499999688
Ant 15 : [1, 0], 10
Exploration
avg = 0.000864866564891
p = 0.00173611111109
Ant 16 : [2, 3], 18
Exploration
avg = 0.00172759395837
p = 0.00312499999997
Ant 17 : [1, 0], 10
Exploitation
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00172759395838

p = 0.003125
Ant 18 : [1, 0], 10
Exploitation
Ant 19 : [2, 3], 18
Exploitation
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 5 : [0, 1, 3], 28
Exploitation
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000696573306502

p = 0.00104165625
Ant 6 : [1, 0, 2], 40

Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [2, 3, 1], 36
Exploration
avg = 0.00104380065025
p = 0.0017361109375
Ant 9 : [2, 3, 1], 36
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 10 : [0, 1, 3], 28

Exploitation
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 12 : [2, 3, 1], 36
Exploration
avg = 0.00111569649226
p = 0.00173611110937
Ant 13 : [0, 1, 3], 28
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00111569649312

p = 0.00173611111109
Ant 14 : [0, 1, 3], 28
Exploitation
Ant 15 : [1, 0, 2], 40
Exploration
avg = 0.00104380073705
p = 0.00173611111109
Ant 16 : [2, 3, 1], 36
Exploitation
Ant 17 : [1, 0, 2], 40
Exploration
avg = 0.000696578514835
p = 0.00104166666667
Ant 18 : [1, 0, 2], 40
Exploitation
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [0, 1, 3, 2], 46

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611111111

Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173609375

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [2, 3, 1, 0], 46
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0017361109375

Ant 10 : [0, 1, 3, 2], 46
ExploitationUpdate called by 10

Ant 11 : [1, 0, 2, 3], 58Ant thread 10 terminating.

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.003125

Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00173611110937

Ant 13 : [0, 1, 3, 2], 46
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111109

Ant 14 : [0, 1, 3, 2], 46
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00173611111111

Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.003125

Ant 16 : [2, 3, 1, 0], 46
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [1, 0, 2, 3], 58

Update called by 17Exploitation
Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58
Update called by 18Exploitation
Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [2, 3, 1, 0], 76, 11, 76
Ant thread 19 terminating.iter_counter = 12

starting ant = 0
Explorationstarting ant = 1

avg = 0.000778379908407starting ant = 2

p = 0.0015625starting ant = 3

Ant 0 : [2, 3], 18starting ant = 4

Explorationstarting ant = 5

avg = 0.000835671575074starting ant = 6

p = 0.001734375starting ant = 7

Ant 1 : [2, 3], 18starting ant = 8

Exploitationstarting ant = 9

Ant 2 : [1, 0], 10starting ant = 10

Exploitationstarting ant = 11

Ant 3 : [1, 0], 10starting ant = 12

Explorationstarting ant = 13

avg = 0.000939420663352starting ant = 14

p = 0.0015625starting ant = 15

Ant 0 : [2, 3, 1], 36starting ant = 16

Exploitationstarting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Explorationstarting ant = 19

avg = 0.0014585721089
p = 0.003121875
Ant 5 : [0, 1], 10

Exploitation
Ant 6 : [1, 0], 10
Exploitation
Ant 7 : [0, 1], 10
Exploration
avg = 0.00102535816335
p = 0.001734375
Ant 1 : [2, 3, 1], 36
Exploitation
Ant 8 : [2, 3], 18
Exploration
avg = 0.000836250220907
p = 0.0017361109375
Ant 9 : [2, 3], 18
Exploration
avg = 0.000626920663352
p = 0.0009375
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.0014939886714
p = 0.0031249996875
Ant 10 : [0, 1], 10
Exploitation
Ant 11 : [1, 0], 10
Exploitation
Ant 3 : [1, 0, 2], 40
Exploration
avg = 0.000836250278199
p = 0.00173611110937
Ant 12 : [2, 3], 18
Exploitation
Ant 13 : [0, 1], 10
Exploitation
Ant 14 : [0, 1], 10
Exploration
avg = 0.0017110845615
p = 0.00312499999688
Ant 15 : [1, 0], 10
Exploration
avg = 0.00312499999997
Ant 0 : [2, 3, 1, 0], 46
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000836250278772

p = 0.00173611111109
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [1, 0], 10
Exploration
avg = 0.00100412684381
p = 0.0015625
Ant 4 : [0, 1, 3], 28
Exploitation

Ant 18 : [1, 0], 10
Exploration
avg = 0.000836250278778
p = 0.001736111111111
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [0, 1, 3], 28
Exploitation
Ant 6 : [1, 0, 2], 40
Exploration
avg = 0.00109092371881
p = 0.00173609375
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.003125
Ant 1 : [2, 3, 1, 0], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00102621753835

p = 0.00173609375
Ant 8 : [2, 3, 1], 36
Exploitation
Ant 9 : [2, 3, 1], 36
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 10 : [0, 1, 3], 28

Exploitation
Ant 11 : [1, 0, 2], 40
Exploration
avg = 0.001736111111111
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploitation

Ant thread 3 terminating.Ant 12 : [2, 3, 1], 36

Exploitation
Ant 13 : [0, 1, 3], 28
Exploitation
Ant 14 : [0, 1, 3], 28
Exploration
avg = 0.000679003996164
p = 0.001041666666563
Ant 15 : [1, 0, 2], 40
Exploitation
Ant 16 : [2, 3, 1], 36
Exploration
avg = 0.00067900399668
p = 0.001041666666666
Ant 17 : [1, 0, 2], 40
Exploitation

Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000679003996685

p = 0.001041666666667
Ant 18 : [1, 0, 2], 40
Exploration
avg = 0.00102622621891
p = 0.001736111111111
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 5 : [0, 1, 3, 2], 46
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.001736111111111

Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173609375

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.003125

Ant 8 : [2, 3, 1, 0], 46
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 1, 0], 46

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.001736111111111

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.003125

Ant 12 : [2, 3, 1, 0], 46
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [0, 1, 3, 2], 46

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [0, 1, 3, 2], 46

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.001736111111111

Ant 15 : [1, 0, 2, 3], 58
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 1, 0], 46

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.001736111111111

Ant 17 : [1, 0, 2, 3], 58
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 2, 3], 58

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46

Update called by 19
Best: [2, 3, 1, 0], 76, 12, 76
Ant thread 19 terminating.

Results

Best path = [2, 3, 1, 0]
('C ',)
('D ',)
('B ',)
('A ',)

Best path cost = 76

>>>

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py
[[0, 10, 30, 31, 20], [10, 0, 22, 18, 40], [30, 22, 0, 18, 26], [31, 18, 18, 0,
15], [20, 40, 26, 15, 0]]
5
Average = 18
Tau0 = 0.022222222222222
iter_counter = 1
starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [3, 4], 15starting ant = 2

Explorationstarting ant = 3
avg = 0.00100071225071starting ant = 4
p = 0.00111111111111starting ant = 5
p = 0.00148148148148starting ant = 6
Ant 1 : [4, 3], 15starting ant = 7
Exploitationstarting ant = 8
Ant 0 : [3, 4, 0], 35starting ant = 9
Explorationstarting ant = 10
avg = 0.00116686579052starting ant = 11
p = 0.00123456790123starting ant = 12
p = 0.00123456790123starting ant = 13
p = 0.00148148148148starting ant = 14
Ant 2 : [3, 4], 15starting ant = 15
Explorationstarting ant = 16
avg = 0.00119772998805starting ant = 17
p = 0.00222222222222starting ant = 18
Ant 3 : [0, 1], 10starting ant = 19
Exploitation
Ant 4 : [0, 1], 10
Exploration
avg = 0.00116686579052
p = 0.00123456790123
p = 0.00123456790123
p = 0.00148148148148
Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [3, 4], 15
Exploitation
Ant 1 : [4, 3, 1], 33
Exploitation
Ant 7 : [0, 1], 10
Exploration
avg = 0.00100071225071
p = 0.00111111111111
p = 0.00148148148148
Ant 8 : [4, 3], 15
Exploitation

Ant 0 : [3, 4, 0, 1], 45
Exploration
avg = 0.00119772998805
p = 0.00222222222222
Ant 9 : [0, 1], 10
Exploration
avg = 0.00116686579052
p = 0.00123456790123
p = 0.00123456790123
p = 0.00148148148148
Ant 10 : [3, 4], 15
Exploitation
Ant 11 : [0, 1], 10
Exploitation
Ant 12 : [1, 0], 10
Exploitation
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [2, 3], 18
Exploration
avg = 0.000840455840456
p = 0.00111111111111
p = 0.000854700854701
Ant 2 : [3, 4, 2], 41
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [1, 0], 10
Exploitation
Ant 18 : [2, 3], 18
Exploitation
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 19 : [2, 3], 18
Exploitation
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 6 : [3, 4, 0], 35
Exploration
avg = 0.00161616161616
p = 0.00222222222222
Ant 1 : [4, 3, 1, 0], 43
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00106199389354
p = 0.00123456790123
p = 0.00123456790123
Ant 8 : [4, 3, 2], 33
Exploitation

Ant 0 : [3, 4, 0, 1, 2], 67
Update called by 0Exploitation

Ant thread 0 terminating.Ant 9 : [0, 1, 3], 28

Exploitation
Ant 10 : [3, 4, 0], 35
Exploration
avg = 0.00093340815563
p = 0.0010101010101
p = 0.00123456790123
Ant 11 : [0, 1, 3], 28
Exploitation
Ant 12 : [1, 0, 4], 30
Exploitation
Ant 13 : [1, 0, 4], 30
Exploration
avg = 0.00114429842028
p = 0.00123456790123
p = 0.00148148148148
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.000875420875421
p = 0.0010101010101
Ant 2 : [3, 4, 2, 1], 63
Exploration
avg = 0.000856232576663
p = 0.001111111111111
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 16 : [1, 0, 4], 30
Exploration
avg = 0.000856232576663
p = 0.001111111111111
Ant 17 : [1, 0, 4], 30
Exploitation
Ant 18 : [2, 3, 4], 33
Exploitation
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.00114429842028
p = 0.00123456790123
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33
Exploitation
Ant 4 : [0, 1, 3, 4], 43
Exploration
avg = 0.00148148148148
p = 0.002222222222222
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.00148148148148
p = 0.002222222222222
Ant 6 : [3, 4, 0, 1], 45

Exploration
avg = 0.000740740740741
Ant 1 : [4, 3, 1, 0, 2], 73
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3, 4], 43

Exploitation
Ant 8 : [4, 3, 2, 1], 55

Exploitation
Ant 9 : [0, 1, 3, 4], 43

Exploration
avg = 0.00148148148148
p = 0.0022222222222222
Ant 10 : [3, 4, 0, 1], 45

Exploration
avg = 0.00135802469136
p = 0.00148148148148
Ant 11 : [0, 1, 3, 4], 43

Exploration
avg = 0.00116809116809
p = 0.00148148148148
Ant 12 : [1, 0, 4, 3], 45

Exploitation
Ant 13 : [1, 0, 4, 3], 45

Exploitation
Ant 14 : [2, 3, 4, 0], 53

Exploration
avg = 0.0022222222222222
Ant 2 : [3, 4, 2, 1, 0], 73
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00116809116809

p = 0.00148148148148
Ant 15 : [1, 0, 4, 3], 45

Exploitation
Ant 16 : [1, 0, 4, 3], 45

Exploration
avg = 0.00116809116809
p = 0.00148148148148
Ant 17 : [1, 0, 4, 3], 45

Exploration
avg = 0.0008333333333333
p = 0.0011111111111111
Ant 18 : [2, 3, 4, 0], 53

Exploration
avg = 0.000854700854701
Ant 3 : [0, 1, 3, 4, 2], 69
Update called by 3Exploitation

Ant thread 3 terminating.Ant 19 : [2, 3, 4, 0], 53

Exploration

avg = 0.000854700854701
Ant 4 : [0, 1, 3, 4, 2], 69
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.0010101010101

Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 0, 1, 2], 67
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 4, 2], 69
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00222222222222

Ant 8 : [4, 3, 2, 1, 0], 65
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000854700854701

Ant 9 : [0, 1, 3, 4, 2], 69
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0010101010101

Ant 10 : [3, 4, 0, 1, 2], 67
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 4, 3, 2], 63
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00123456790123

Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00222222222222

Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00123456790123

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 4, 3, 2], 63

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00123456790123

Ant 17 : [1, 0, 4, 3, 2], 63

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [2, 3, 4, 0, 1], 63

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 4, 0, 1], 63

Update called by 19

Best: [3, 4, 0, 1, 2], 85, 1, 90

Ant thread 19 terminating.iter_counter = 2

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [3, 4], 15starting ant = 2

Explorationstarting ant = 3

avg = 0.000900641025641starting ant = 4

p = 0.001starting ant = 5

p = 0.0013333333333333starting ant = 6

Ant 1 : [4, 3], 15starting ant = 7

Exploitationstarting ant = 8

Ant 0 : [3, 4, 0], 35starting ant = 9

Exploitationstarting ant = 10

Ant 2 : [3, 4], 15starting ant = 11

Exploitationstarting ant = 12

Ant 3 : [0, 1], 10starting ant = 13

Explorationstarting ant = 14

avg = 0.00113295698925starting ant = 15

p = 0.00222starting ant = 16

Ant 4 : [0, 1], 10starting ant = 17

Explorationstarting ant = 18

avg = 0.0010872125448starting ant = 19

p = 0.0011111111111111

p = 0.0011111111111111

p = 0.00148146666667

Ant 5 : [3, 4], 15

Exploration

avg = 0.00108721621147

p = 0.0011111111111111

p = 0.0011111111111111

p = 0.00148148133333

Ant 6 : [3, 4], 15

Exploration

avg = 0.000955794504182

p = 0.0011111111111111

p = 0.0011111111111111

Ant 1 : [4, 3, 2], 33

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.000964807692308

p = 0.00111

p = 0.00148

Ant 8 : [4, 3], 15

Exploration

avg = 0.00144444433333

p = 0.002222222

Ant 0 : [3, 4, 0, 1], 45

Exploitation

Ant 9 : [0, 1], 10

Exploitation

Ant 10 : [3, 4], 15

Exploitation

Ant 2 : [3, 4, 0], 35

Exploration

avg = 0.0011335125448

p = 0.002222222222

Ant 11 : [0, 1], 10

Exploitation

Ant 12 : [1, 0], 10

Exploration

avg = 0.000840067340067

p = 0.000909090909091

p = 0.0011111111111111

Ant 3 : [0, 1, 3], 28

Exploration

avg = 0.00121560606061

p = 0.00222

p = 0.00123333333333

Ant 13 : [1, 3], 18

Exploitation

Ant 14 : [2, 3], 18
Exploration
avg = 0.00121591161616
p = 0.00222
p = 0.00123455555556
Ant 15 : [1, 3], 18
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.00121646470227
p = 0.0022222
p = 0.0012345679
Ant 17 : [1, 3], 18
Exploitation
Ant 18 : [2, 3], 18
Exploitation
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [3, 4, 0], 35
Exploration
avg = 0.00079344725641
p = 0.001111111
Ant 6 : [3, 4, 0], 35
Exploitation
Ant 1 : [4, 3, 2, 1], 55
Exploration
avg = 0.000881219603438
p = 0.000909090909091
p = 0.00123456790122
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000996535244922
p = 0.00111111111111
p = 0.00123333333333
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 0 : [3, 4, 0, 1, 2], 67
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000914552936775

p = 0.00100909090909
p = 0.00123456790123
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000793447293077
p = 0.00111111111
Ant 10 : [3, 4, 0], 35
Exploration
avg = 0.00144444444444
p = 0.00222222222222
Ant 2 : [3, 4, 0, 1], 45

Exploration
avg = 0.000914552936775
p = 0.00100909090909
p = 0.00123456790123
Ant 11 : [0, 1, 3], 28
Exploitation
Ant 12 : [1, 0, 4], 30
Exploration
avg = 0.00135801851851
p = 0.00148148148147
Ant 3 : [0, 1, 3, 4], 43
Exploitation
Ant 13 : [1, 3, 4], 33
Exploitation
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 15 : [1, 3, 4], 33
Exploration
avg = 0.000807275985663
p = 0.00111
Ant 16 : [1, 0, 4], 30
Exploitation
Ant 4 : [0, 1, 3, 4], 43
Exploitation
Ant 17 : [1, 3, 4], 33
Exploitation
Ant 18 : [2, 3, 4], 33
Exploitation
Ant 19 : [2, 3, 4], 33
Exploitation
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.00144444444444
p = 0.00222222222222
Ant 6 : [3, 4, 0, 1], 45
Exploration
avg = 0.00222222
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3, 4], 43

Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.00144444444444
p = 0.00222222222222
Ant 10 : [3, 4, 0, 1], 45
Exploration
avg = 0.00100909090909
Ant 2 : [3, 4, 0, 1, 2], 67
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [0, 1, 3, 4], 43

Exploitation

Ant 12 : [1, 0, 4, 3], 45

Exploitation

Ant 3 : [0, 1, 3, 4, 2], 69

ExploitationUpdate called by 3

Ant 13 : [1, 3, 4, 0], 53Ant thread 3 terminating.

Exploitation

Ant 14 : [2, 3, 4, 0], 53

Exploitation

Ant 15 : [1, 3, 4, 0], 53

Exploitation

Ant 16 : [1, 0, 4, 3], 45

Exploration

avg = 0.000853846153846

Ant 4 : [0, 1, 3, 4, 2], 69

Update called by 4Exploitation

Ant thread 4 terminating.Ant 17 : [1, 3, 4, 0], 53

Exploitation

Ant 18 : [2, 3, 4, 0], 53

Exploitation

Ant 19 : [2, 3, 4, 0], 53

Exploration

avg = 0.00101009090909

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00101010090909

Ant 6 : [3, 4, 0, 1, 2], 67

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000854692307692

Ant 7 : [0, 1, 3, 4, 2], 69

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.002222222

Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 2], 69

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00101010100909

Ant 10 : [3, 4, 0, 1, 2], 67
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 4, 3, 2], 63
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 3, 4, 0, 2], 83
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00074

Ant 15 : [1, 3, 4, 0, 2], 83
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00123456777778

Ant 16 : [1, 0, 4, 3, 2], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.0007407333333333

Ant 17 : [1, 3, 4, 0, 2], 83
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.002222222222222

Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 2, 91
Ant thread 19 terminating.iter_counter = 3

starting ant = 0
Explorationstarting ant = 1

avg = 0.00100627240116starting ant = 2

p = 0.001111111111starting ant = 3

p = 0.0013333333333333starting ant = 4

Ant 0 : [3, 4], 15starting ant = 5

Explorationstarting ant = 6

avg = 0.000888141025306starting ant = 7

p = 0.001starting ant = 8

p = 0.001333333332starting ant = 9

Ant 1 : [4, 3], 15starting ant = 10

Explorationstarting ant = 11

avg = 0.00104293906782starting ant = 12

p = 0.001111111111starting ant = 13

p = 0.00148starting ant = 14

Ant 2 : [3, 4], 15starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [0, 1], 10starting ant = 17

Explorationstarting ant = 18

avg = 0.00111682544032starting ant = 19

p = 0.00222

Ant 4 : [0, 1], 10

Exploitation

Ant 0 : [3, 4, 0], 35

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [3, 4], 15

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [4, 3], 15

Exploitation

Ant 9 : [0, 1], 10

Exploration

avg = 0.00089725209043

p = 0.001

p = 0.001111111111

Ant 1 : [4, 3, 2], 33

Exploration

avg = 0.00107386499365

p = 0.00123333333332

p = 0.00148148148

Ant 10 : [3, 4], 15

Exploration
avg = 0.00111738099532
p = 0.002222222222
Ant 11 : [0, 1], 10
Exploration
avg = 0.00111755050455
p = 0.001999999998
Ant 12 : [1, 0], 10
Exploitation
Ant 13 : [1, 0], 10
Exploration
avg = 0.000828125127622
p = 0.000909081818182
p = 0.0011111111
Ant 14 : [2, 3], 18
Exploration
avg = 0.000776410256408
p = 0.00111
Ant 2 : [3, 4, 0], 35
Exploration
avg = 0.00117310050505
p = 0.0022222
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.000823400673398
p = 0.000909090909082
p = 0.00111111111111
Ant 3 : [0, 1, 3], 28
Exploration
avg = 0.0012036616156
p = 0.002222222222
p = 0.00123333333333
Ant 17 : [1, 3], 18
Exploitation
Ant 18 : [2, 3], 18
Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.000864548821546
p = 0.000909090909082
p = 0.00123455555556
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 0 : [3, 4, 0, 1], 45
Exploration
avg = 0.000776776923074
p = 0.0011111
Ant 5 : [3, 4, 0], 35
Exploration
avg = 0.000776780589741
p = 0.0011111111
Ant 6 : [3, 4, 0], 35

Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000937992831538
p = 0.001
p = 0.00123333333332
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000864552936361
p = 0.000909090909082
p = 0.0012345679
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000754540909091
p = 0.000909081818182
Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 10 : [3, 4, 0], 35
Exploration
avg = 0.000864552936768
p = 0.000909090909082
p = 0.00123456790122
Ant 11 : [0, 1, 3], 28
Exploitation
Ant 12 : [1, 0, 4], 30
Exploration
avg = 0.000785770553763
p = 0.0011099999
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 2 : [3, 4, 0, 1], 45
Exploration
avg = 0.00078613725343
p = 0.001111099999
Ant 15 : [1, 0, 4], 30
Exploration
avg = 0.000786140920427
p = 0.00111111099999
Ant 16 : [1, 0, 4], 30
Exploitation
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.00109889406611
p = 0.00123455555556
p = 0.00148148148148
Ant 17 : [1, 3, 4], 33
Exploitation
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.00102070888092
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33

Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 4 : [0, 1, 3, 4], 43
Exploitation
Ant 0 : [3, 4, 0, 1, 2], 67
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00144444441111

p = 0.00222222222222
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.00144444441111
p = 0.00222222222222
Ant 6 : [3, 4, 0, 1], 45
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 7 : [0, 1, 3, 4], 43
Exploration
avg = 0.000804545409091
p = 0.00100909081818
Ant 8 : [4, 3, 2, 1], 55
Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.002222222222
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [3, 4, 0, 1], 45

Exploitation
Ant 11 : [0, 1, 3, 4], 43
Exploitation
Ant 12 : [1, 0, 4, 3], 45
Exploration
avg = 0.00112535605128
p = 0.00148148133333
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [2, 3, 4, 0], 53
Exploitation
Ant 2 : [3, 4, 0, 1, 2], 67
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00112535612461

p = 0.00148148148
Ant 15 : [1, 0, 4, 3], 45
Exploration
avg = 0.00112535612534
p = 0.00148148148147

Ant 16 : [1, 0, 4, 3], 45

Exploitation

Ant 3 : [0, 1, 3, 4, 2], 69

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000982478632479

p = 0.001111111111111

Ant 17 : [1, 3, 4, 0], 53

Exploitation

Ant 18 : [2, 3, 4, 0], 53

Exploration

avg = 0.000780555555556

p = 0.001111111111111

Ant 19 : [2, 3, 4, 0], 53

Exploitation

Ant 4 : [0, 1, 3, 4, 2], 69

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00101009090909

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 0, 1, 2], 67

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000854692307692

Ant 7 : [0, 1, 3, 4, 2], 69

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 2], 69

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 0, 1, 2], 67

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 4, 3, 2], 63

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00123456777778

Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00222222222222

Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0012345679

Ant 15 : [1, 0, 4, 3, 2], 63
ExplorationUpdate called by 15

avg = 0.00123456790122Ant thread 15 terminating.

Ant 16 : [1, 0, 4, 3, 2], 63
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [1, 3, 4, 0, 2], 83
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00222222222222

Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00222222222222

Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 3, 89
Ant thread 19 terminating.iter_counter = 4

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [3, 4], 15starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [4, 3], 15starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [3, 4, 0], 35starting ant = 6

Exploitationstarting ant = 7

Ant 2 : [3, 4], 15starting ant = 8

Explorationstarting ant = 9

avg = 0.00104714516089starting ant = 10

p = 0.002starting ant = 11

Ant 3 : [0, 1], 10starting ant = 12

Explorationstarting ant = 13

avg = 0.000844563918757starting ant = 14

p = 0.0009starting ant = 15

p = 0.0011111111111111starting ant = 16

Ant 1 : [4, 3, 2], 33starting ant = 17

Exploitationstarting ant = 18

Ant 4 : [0, 1], 10starting ant = 19

Exploitation

Ant 5 : [3, 4], 15

Exploration

avg = 0.00144409999997

p = 0.0022222

Ant 0 : [3, 4, 0, 1], 45

Exploration

avg = 0.00103434882796

p = 0.001233333333333

p = 0.001481481333333

Ant 6 : [3, 4], 15

Exploration

avg = 0.00110270066089

p = 0.002222222

Ant 7 : [0, 1], 10

Exploitation

Ant 2 : [3, 4, 0], 35

Exploration

avg = 0.000941332692306

p = 0.0011111

p = 0.00148

Ant 8 : [4, 3], 15

Exploration

avg = 0.00110270071589

p = 0.00222222222

Ant 9 : [0, 1], 10

Exploration

avg = 0.00103434886462

p = 0.001233333333333

p = 0.00148148148

Ant 10 : [3, 4], 15

Exploration

avg = 0.00110270071644

p = 0.0022222222222

Ant 11 : [0, 1], 10
Exploration
avg = 0.000808400673398
p = 0.000909090909082
p = 0.001111111111111
Ant 3 : [0, 1, 3], 28
Exploration
avg = 0.0011368560606
p = 0.002
p = 0.001233333333333
Ant 12 : [1, 3], 18
Exploration
avg = 0.00113716161616
p = 0.002
p = 0.001234555555556
Ant 13 : [1, 3], 18
Exploitation
Ant 14 : [2, 3], 18
Exploration
avg = 0.00113716467171
p = 0.002
p = 0.00123456777778
Ant 15 : [1, 3], 18
Exploration
avg = 0.00113716470227
p = 0.002
p = 0.0012345679
Ant 16 : [1, 3], 18
Exploitation
Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 17 : [1, 0], 10
Exploration
avg = 0.000851375268368
p = 0.00100909081817
p = 0.001233333333222
Ant 18 : [2, 3], 18
Exploration
avg = 0.000849552936768
p = 0.0009090909082
p = 0.00123456790122
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.000851680824199
p = 0.00100909081817
p = 0.00123455555554
Ant 19 : [2, 3], 18
Exploration
avg = 0.000761776923074
p = 0.0011111
p = 0.000769230769223
Ant 5 : [3, 4, 2], 41
Exploitation
Ant 0 : [3, 4, 0, 1, 2], 67

Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [3, 4, 0], 35

Exploitation

Ant 7 : [0, 1, 3], 28

Exploration

avg = 0.00144411111081

p = 0.00222222222222

Ant 2 : [3, 4, 0, 1], 45

Exploration

avg = 0.000885304659498

p = 0.0009

p = 0.00123333333333

Ant 8 : [4, 3, 2], 33

Exploration

avg = 0.000882886270108

p = 0.00100909090909

p = 0.00123456790123

Ant 9 : [0, 1, 3], 28

Exploration

avg = 0.000789985717949

p = 0.0011111111

p = 0.000853846153846

Ant 10 : [3, 4, 2], 41

Exploration

avg = 0.000882886270108

p = 0.00100909090909

p = 0.00123456790123

Ant 11 : [0, 1, 3], 28

Exploration

avg = 0.00135801851851

p = 0.00148148148147

Ant 3 : [0, 1, 3, 4], 43

Exploration

avg = 0.0010795392274

p = 0.00123455555556

p = 0.00148148148148

Ant 12 : [1, 3, 4], 33

Exploitation

Ant 13 : [1, 3, 4], 33

Exploration

avg = 0.000968020708881

p = 0.00148148148148

Ant 14 : [2, 3, 4], 33

Exploitation

Ant 15 : [1, 3, 4], 33

Exploration

avg = 0.0010795392274

p = 0.00123455555556

p = 0.00148148148148

Ant 16 : [1, 3, 4], 33

Exploration

avg = 0.00222

Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 17 : [1, 0, 4], 30

Exploration
avg = 0.000968020708881
p = 0.00148148148148
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 4 : [0, 1, 3, 4], 43
Exploitation
Ant 19 : [2, 3, 4], 33
Exploration
avg = 0.000774545409087
p = 0.00100909081817
Ant 5 : [3, 4, 2, 1], 63
Exploration
avg = 0.00144411111081
p = 0.00222222222222
Ant 6 : [3, 4, 0, 1], 45
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 7 : [0, 1, 3, 4], 43
Exploration
avg = 0.00100909090909
Ant 2 : [3, 4, 0, 1, 2], 67
Update called by 2Exploitation

Ant thread 2 terminating.Ant 8 : [4, 3, 2, 1], 55

Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.000775050454541
p = 0.00101010090908
Ant 10 : [3, 4, 2, 1], 63
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 11 : [0, 1, 3, 4], 43
Exploitation
Ant 3 : [0, 1, 3, 4, 2], 69
Update called by 3Exploitation

Ant thread 3 terminating.Ant 12 : [1, 3, 4, 0], 53

Exploration
avg = 0.000982905939615
p = 0.001111111111
Ant 13 : [1, 3, 4, 0], 53

Exploration
avg = 0.000758055555555
p = 0.001111111111111
Ant 14 : [2, 3, 4, 0], 53
Exploitation
Ant 15 : [1, 3, 4, 0], 53
Exploitation
Ant 16 : [1, 3, 4, 0], 53
Exploration
avg = 0.00116808371795
p = 0.001481466666667
Ant 17 : [1, 0, 4, 3], 45
Exploration
avg = 0.0007580555555556
p = 0.001111111111111
Ant 18 : [2, 3, 4, 0], 53
Exploration
avg = 0.000854700769231
Ant 4 : [0, 1, 3, 4, 2], 69
Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [2, 3, 4, 0], 53

Exploitation
Ant 5 : [3, 4, 2, 1, 0], 73
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 0, 1, 2], 67

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 4, 2], 69

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 2], 69

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.002222222222

Ant 10 : [3, 4, 2, 1, 0], 73
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00066599999994

Ant 12 : [1, 3, 4, 0, 2], 83
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000739993333327

Ant 13 : [1, 3, 4, 0, 2], 83
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.002222222222222

Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000740733266667

Ant 15 : [1, 3, 4, 0, 2], 83
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 3, 4, 0, 2], 83
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.001234555555556

Ant 17 : [1, 0, 4, 3, 2], 63
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 4, 94
Ant thread 19 terminating.iter_counter = 5

starting ant = 0
Explorationstarting ant = 1

avg = 0.000931191728495starting ant = 2

p = 0.001111111starting ant = 3

p = 0.001333333333333starting ant = 4

Ant 0 : [3, 4], 15starting ant = 5

Explorationstarting ant = 6

avg = 0.000866765992308starting ant = 7

p = 0.001starting ant = 8

p = 0.0013333332starting ant = 9

Ant 1 : [4, 3], 15starting ant = 10

Explorationstarting ant = 11

avg = 0.000967858395161starting ant = 12

p = 0.0011111111starting ant = 13

p = 0.00148starting ant = 14

Ant 2 : [3, 4], 15starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [0, 1], 10starting ant = 17

Explorationstarting ant = 18

avg = 0.00108899731166starting ant = 19

p = 0.00222

Ant 4 : [0, 1], 10

Exploration

avg = 0.000711243589744

p = 0.001

p = 0.000769230769231

Ant 0 : [3, 4, 2], 41

Exploration

avg = 0.000968225061828

p = 0.001111111

p = 0.00148146666667

Ant 5 : [3, 4], 15

Exploration

avg = 0.000968228728495

p = 0.001111111

p = 0.00148148133333

Ant 6 : [3, 4], 15

Exploration

avg = 0.00108954731166

p = 0.0022222

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [4, 3], 15

Exploitation

Ant 9 : [0, 1], 10

Exploration

avg = 0.000797144526882

p = 0.00081

p = 0.001111111

Ant 1 : [4, 3, 2], 33

Exploitation

Ant 10 : [3, 4], 15

Exploitation
Ant 11 : [0, 1], 10
Exploration
avg = 0.00109617548232
p = 0.001999999999998
p = 0.001111111111111
Ant 12 : [1, 3], 18
Exploitation
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [2, 3], 18
Exploration
avg = 0.000739448717949
p = 0.001
p = 0.000853846153846
Ant 2 : [3, 4, 2], 41
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.000835641383838
p = 0.000909090818182
p = 0.001233333333333
Ant 3 : [0, 1, 3], 28
Exploration
avg = 0.00118259209343
p = 0.002222222
p = 0.001234555555556
Ant 17 : [1, 3], 18
Exploitation
Ant 18 : [2, 3], 18
Exploration
avg = 0.000797603923624
p = 0.000909090908182
p = 0.001234555555554
Ant 19 : [2, 3], 18
Exploration
avg = 0.00083605286532
p = 0.000909090818182
p = 0.00123456777778
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.000697545454091
p = 0.000909090908182
Ant 0 : [3, 4, 2, 1], 63
Exploration
avg = 0.000739730769231
p = 0.001
p = 0.000854692307692
Ant 5 : [3, 4, 2], 41
Exploration
avg = 0.000739733589744
p = 0.001

p = 0.000854700769231
Ant 6 : [3, 4, 2], 41
Exploration
avg = 0.000836052906061
p = 0.000909090818182
p = 0.0012345679
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000837885304289
p = 0.00123333333222
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [0, 1, 3], 28
Exploitation
Ant 1 : [4, 3, 2, 1], 55
Exploration
avg = 0.000739733617949
p = 0.001
p = 0.000854700853846
Ant 10 : [3, 4, 2], 41
Exploitation
Ant 11 : [0, 1, 3], 28
Exploration
avg = 0.00106211987255
p = 0.00123455555554
p = 0.00148148148147
Ant 12 : [1, 3, 4], 33
Exploration
avg = 0.000711996415543
p = 0.000998999999991
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.000748045454545
p = 0.00101009090909
Ant 2 : [3, 4, 2, 1], 63
Exploitation
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 16 : [1, 0, 4], 30
Exploration
avg = 0.00135801851851
p = 0.00148148148148
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.00106211987256
p = 0.00123455555554
p = 0.00148148148148
Ant 17 : [1, 3, 4], 33
Exploration
avg = 0.000920601354042
p = 0.00148148148148
Ant 18 : [2, 3, 4], 33

Exploration
avg = 0.000920601354042
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33
Exploitation
Ant 4 : [0, 1, 3, 4], 43
Exploration
avg = 0.002222222
Ant 0 : [3, 4, 2, 1, 0], 73
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 4, 2, 1], 63

Exploitation
Ant 6 : [3, 4, 2, 1], 63
Exploration
avg = 0.00135801851851
p = 0.00148148148148
Ant 7 : [0, 1, 3, 4], 43
Exploration
avg = 0.000748050505045
p = 0.00101010101009
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.00135801851851
p = 0.00148148148148
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.00222222222
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [3, 4, 2, 1], 63

Exploitation
Ant 11 : [0, 1, 3, 4], 43
Exploration
avg = 0.000927350427346
p = 0.001
Ant 12 : [1, 3, 4, 0], 53
Exploitation
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [2, 3, 4, 0], 53
Exploitation
Ant 2 : [3, 4, 2, 1, 0], 73
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00116809109401

p = 0.00148148133333
Ant 15 : [1, 0, 4, 3], 45
Exploitation
Ant 16 : [1, 0, 4, 3], 45

Exploitation
Ant 3 : [0, 1, 3, 4, 2], 69
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00098290042735

p = 0.00111111
Ant 17 : [1, 3, 4, 0], 53
Exploration
avg = 0.0007378055
p = 0.0011111111
Ant 18 : [2, 3, 4, 0], 53
Exploitation
Ant 19 : [2, 3, 4, 0], 53
Exploration
avg = 0.000854700854701
Ant 4 : [0, 1, 3, 4, 2], 69
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00222222222222

Ant 5 : [3, 4, 2, 1, 0], 73
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 2, 1, 0], 73

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000854700854701

Ant 7 : [0, 1, 3, 4, 2], 69
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00222222222222

Ant 8 : [4, 3, 2, 1, 0], 65
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 2], 69

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 2, 1, 0], 73

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 3, 4, 0, 2], 83

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012345555554

Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 4, 3, 2], 63
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [1, 3, 4, 0, 2], 83
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 5, 95
Ant thread 19 terminating.iter_counter = 6

starting ant = 0
Explorationstarting ant = 1

avg = 0.000899183691753starting ant = 2

p = 0.00111111111111starting ant = 3

p = 0.00133333333333starting ant = 4

Ant 0 : [3, 4], 15starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [4, 3], 15starting ant = 7

Explorationstarting ant = 8

avg = 0.00093585035842starting ant = 9

p = 0.00111111111111starting ant = 10

p = 0.00148starting ant = 11

Ant 2 : [3, 4], 15starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [0, 1], 10starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [0, 1], 10starting ant = 16

Exploitationstarting ant = 17

Ant 0 : [3, 4, 0], 35starting ant = 18

Exploitationstarting ant = 19

Ant 5 : [3, 4], 15

Exploration

avg = 0.000936220691753

p = 0.00111111111111

p = 0.00148148133333

Ant 6 : [3, 4], 15

Exploitation

Ant 1 : [4, 3, 2], 33

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [4, 3], 15

Exploration

avg = 0.00107804305542

p = 0.0022222222

Ant 9 : [0, 1], 10

Exploration

avg = 0.000966776283978

p = 0.00123333333333

p = 0.00148148148

Ant 10 : [3, 4], 15

Exploration

avg = 0.00107804311042

p = 0.002222222222

Ant 11 : [0, 1], 10

Exploration

avg = 0.00073576025641

p = 0.00111

p = 0.000769230769231

Ant 2 : [3, 4, 2], 41

Exploration

avg = 0.00106433571187

p = 0.002

p = 0.00111111111111

Ant 12 : [1, 3], 18

Exploration

avg = 0.00109489126742

p = 0.002

p = 0.001233333333333
Ant 13 : [1, 3], 18
Exploration
avg = 0.000793595763973
p = 0.000818181736364
p = 0.001234555555556
Ant 3 : [0, 1, 3], 28
Exploration
avg = 0.000740573554196
p = 0.000909090909091
p = 0.0011111111
Ant 14 : [2, 3], 18
Exploration
avg = 0.00109519987854
p = 0.002
p = 0.00123456777778
Ant 15 : [1, 3], 18
Exploitation
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [1, 0], 10
Exploitation
Ant 0 : [3, 4, 0, 1], 45
Exploitation
Ant 18 : [2, 3], 18
Exploration
avg = 0.000771434693082
p = 0.000909090909091
p = 0.001234555555554
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 6 : [3, 4, 0], 35
Exploration
avg = 0.000673245454545
p = 0.000909090909091
Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000795207885305
p = 0.001233333333333
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000764335717949
p = 0.0011111111
p = 0.000853846153846
Ant 10 : [3, 4, 2], 41
Exploration

avg = 0.000793599879199
p = 0.000818181736364
p = 0.00123456790123
Ant 11 : [0, 1, 3], 28
Exploration
avg = 0.000723245454545
p = 0.00100909090909
Ant 2 : [3, 4, 2, 1], 63
Exploitation
Ant 12 : [1, 3, 4], 33
Exploitation
Ant 13 : [1, 3, 4], 33
Exploitation
Ant 3 : [0, 1, 3, 4], 43
Exploitation
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.00104644245321
p = 0.001234555555556
p = 0.00148148148148
Ant 15 : [1, 3, 4], 33
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 4 : [0, 1, 3, 4], 43
Exploitation
Ant 16 : [1, 0, 4], 30
Exploitation
Ant 17 : [1, 0, 4], 30
Exploration
avg = 0.000818181736364
Ant 0 : [3, 4, 0, 1, 2], 67
Update called by 0Exploitation

Ant thread 0 terminating.Ant 18 : [2, 3, 4], 33

Exploitation
Ant 19 : [2, 3, 4], 33
Exploration
avg = 0.001444441111111
p = 0.002222222222222
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 6 : [3, 4, 0, 1], 45
Exploration
avg = 0.0022222
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3, 4], 43

Exploration
avg = 0.000723745454545
p = 0.00101009090909

Ant 8 : [4, 3, 2, 1], 55

Exploration

avg = 0.00135801851852

p = 0.00148148148148

Ant 9 : [0, 1, 3, 4], 43

Exploration

avg = 0.000723750454545

p = 0.00101010090909

Ant 10 : [3, 4, 2, 1], 63

Exploitation

Ant 11 : [0, 1, 3, 4], 43

Exploration

avg = 0.002222222

Ant 2 : [3, 4, 2, 1, 0], 73

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000982901653846

p = 0.001111111

Ant 12 : [1, 3, 4, 0], 53

Exploitation

Ant 13 : [1, 3, 4, 0], 53

Exploitation

Ant 3 : [0, 1, 3, 4, 2], 69

Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [2, 3, 4, 0], 53

Exploitation

Ant 15 : [1, 3, 4, 0], 53

Exploitation

Ant 4 : [0, 1, 3, 4, 2], 69

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00116808376026

p = 0.00148146666667

Ant 16 : [1, 0, 4, 3], 45

Exploration

avg = 0.00116809109359

p = 0.00148148133333

Ant 17 : [1, 0, 4, 3], 45

Exploitation

Ant 18 : [2, 3, 4, 0], 53

Exploitation

Ant 19 : [2, 3, 4, 0], 53

Exploitation

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 0, 1, 2], 67

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000854700853846

Ant 7 : [0, 1, 3, 4, 2], 69
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.002222222222

Ant 8 : [4, 3, 2, 1, 0], 65
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 2], 69
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 2, 1, 0], 73
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000854700854701

Ant 11 : [0, 1, 3, 4, 2], 69
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000666666

Ant 12 : [1, 3, 4, 0, 2], 83
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000739999933333

Ant 13 : [1, 3, 4, 0, 2], 83
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 3, 4, 0, 2], 83
ExplorationUpdate called by 15

avg = 0.00123455555556Ant thread 15 terminating.

Ant 16 : [1, 0, 4, 3, 2], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00123456777778

Ant 17 : [1, 0, 4, 3, 2], 63
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0022222222222222

Ant 19 : [2, 3, 4, 0, 1], 63

Update called by 19

Best: [3, 4, 0, 1, 2], 85, 6, 93

Ant thread 19 terminating.iter_counter = 7

starting ant = 0

Explorationstarting ant = 1

avg = 0.000870376433414starting ant = 2

p = 0.001111111111starting ant = 3

p = 0.001333333333333starting ant = 4

Ant 0 : [3, 4], 15starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [4, 3], 15starting ant = 7

Exploitationstarting ant = 8

Ant 2 : [3, 4], 15starting ant = 9

Explorationstarting ant = 10

avg = 0.00101190447258starting ant = 11

p = 0.002starting ant = 12

Ant 3 : [0, 1], 10starting ant = 13

Exploitationstarting ant = 14

Ant 4 : [0, 1], 10starting ant = 15

Explorationstarting ant = 16

avg = 0.000688158589744starting ant = 17

p = 0.001starting ant = 18

p = 0.000769230769231starting ant = 19

Ant 0 : [3, 4, 2], 41

Exploration

avg = 0.000907409766747

p = 0.001111111111

p = 0.00148146666667

Ant 5 : [3, 4], 15

Exploration

avg = 0.000907413433414
p = 0.001111111111
p = 0.00148148133333
Ant 6 : [3, 4], 15
Exploration
avg = 0.000716057466774
p = 0.001111111111
Ant 1 : [4, 3, 2], 33
Exploration
avg = 0.00106745447258
p = 0.0022222
Ant 7 : [0, 1], 10
Exploration
avg = 0.000907272788458
p = 0.001
p = 0.00147999999999
Ant 8 : [4, 3], 15
Exploration
avg = 0.000716363717949
p = 0.001
p = 0.000853846153846
Ant 2 : [3, 4, 2], 41
Exploration
avg = 0.00106745997258
p = 0.002222222
Ant 9 : [0, 1], 10
Exploration
avg = 0.000937969025911
p = 0.001233333333332
p = 0.00148148148
Ant 10 : [3, 4], 15
Exploitation
Ant 11 : [0, 1], 10
Exploration
avg = 0.00107886171187
p = 0.002
p = 0.00111111111111
Ant 12 : [1, 3], 18
Exploration
avg = 0.000812556356566
p = 0.000909090736364
p = 0.00123333333333
Ant 3 : [0, 1, 3], 28
Exploration
avg = 0.00110972282298
p = 0.002
p = 0.00123455555556
Ant 13 : [1, 3], 18
Exploration
avg = 0.000717021246276
p = 0.000909090908182
p = 0.001111111
Ant 14 : [2, 3], 18
Exploration

avg = 0.000812967838047
p = 0.000909090736364
p = 0.00123456777778
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.00116527590909
p = 0.0022222
p = 0.0012345679
Ant 17 : [1, 3], 18
Exploration
avg = 0.000747576829332
p = 0.000909090908182
p = 0.00123333333222
Ant 18 : [2, 3], 18
Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.000651375454091
p = 0.000909090908182
Ant 0 : [3, 4, 2, 1], 63
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 6 : [3, 4, 0], 35
Exploitation
Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 2 : [3, 4, 2, 1], 63
Exploitation
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000753679102564
p = 0.0011111
p = 0.000854692307692
Ant 10 : [3, 4, 2], 41
Exploration
avg = 0.000812967879199
p = 0.000909090736364
p = 0.00123456790123
Ant 11 : [0, 1, 3], 28
Exploration
avg = 0.00103233277578
p = 0.00123455555556
p = 0.00148148148147
Ant 12 : [1, 3, 4], 33
Exploration

avg = 0.00135801851852
p = 0.00148148148148
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.00103233277579
p = 0.00123455555556
p = 0.00148148148148
Ant 13 : [1, 3, 4], 33
Exploitation
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 4 : [0, 1, 3, 4], 43
Exploration
avg = 0.000682539296769
p = 0.000999989999991
Ant 15 : [1, 0, 4], 30
Exploration
avg = 0.000719209263439
p = 0.0011099999
Ant 16 : [1, 0, 4], 30
Exploration
avg = 0.00103233277579
p = 0.00123455555556
p = 0.00148148148148
Ant 17 : [1, 3, 4], 33
Exploration
avg = 0.000839514257268
p = 0.00148148148148
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.000839514257268
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33
Exploration
avg = 0.0022222
Ant 0 : [3, 4, 2, 1, 0], 73
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.0014444444111

p = 0.00222222222222
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.00144444441111
p = 0.00222222222222
Ant 6 : [3, 4, 0, 1], 45
Exploitation
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00135801851852

p = 0.00148148148148
Ant 7 : [0, 1, 3, 4], 43

Exploration
avg = 0.000701880454545
p = 0.00101010090909
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.002222222222
Ant 2 : [3, 4, 2, 1, 0], 73
Update called by 2Exploitation

Ant thread 2 terminating.Ant 9 : [0, 1, 3, 4], 43

Exploitation
Ant 10 : [3, 4, 2, 1], 63
Exploitation
Ant 11 : [0, 1, 3, 4], 43
Exploration
avg = 0.000982900384615
p = 0.00111111
Ant 12 : [1, 3, 4, 0], 53
Exploration
avg = 0.000854700769231
Ant 3 : [0, 1, 3, 4, 2], 69
Update called by 3Exploitation

Ant thread 3 terminating.Ant 13 : [1, 3, 4, 0], 53

Exploitation
Ant 14 : [2, 3, 4, 0], 53
Exploration
avg = 0.000854700853846
Ant 4 : [0, 1, 3, 4, 2], 69
Update called by 4Exploitation

Ant thread 4 terminating.Ant 15 : [1, 0, 4, 3], 45

Exploration
avg = 0.00116809109401
p = 0.00148148133333
Ant 16 : [1, 0, 4, 3], 45
Exploitation
Ant 17 : [1, 3, 4, 0], 53
Exploration
avg = 0.000703178055556
p = 0.00111111111111
Ant 18 : [2, 3, 4, 0], 53
Exploration
avg = 0.000703178055556
p = 0.00111111111111
Ant 19 : [2, 3, 4, 0], 53
Exploitation
Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 0, 1, 2], 67

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 4, 2], 69

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00222222222222

Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000854700854701

Ant 9 : [0, 1, 3, 4, 2], 69

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00222222222222

Ant 10 : [3, 4, 2, 1, 0], 73

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000666666599994

Ant 12 : [1, 3, 4, 0, 2], 83

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 3, 4, 0, 2], 83

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00222222222222

Ant 14 : [2, 3, 4, 0, 1], 63

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 4, 3, 2], 63

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 4, 3, 2], 63

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000740733333327

Ant 17 : [1, 3, 4, 0, 2], 83

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00222222222222

Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.002222222222222

Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 7, 94
Ant thread 19 terminating.iter_counter = 8

starting ant = 0
Explorationstarting ant = 1

avg = 0.000844449901156starting ant = 2

p = 0.001111111111starting ant = 3

p = 0.001333333333333starting ant = 4

Ant 0 : [3, 4], 15starting ant = 5

Explorationstarting ant = 6

avg = 0.000842071150308starting ant = 7

p = 0.001starting ant = 8

p = 0.0013333333332starting ant = 9

Ant 1 : [4, 3], 15starting ant = 10

Explorationstarting ant = 11

avg = 0.000881116567823starting ant = 12

p = 0.001111111111starting ant = 13

p = 0.00148starting ant = 14

Ant 2 : [3, 4], 15starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [0, 1], 10starting ant = 17

Exploitationstarting ant = 18

Ant 4 : [0, 1], 10starting ant = 19

Exploitation
Ant 0 : [3, 4, 0], 35
Exploration
avg = 0.000881483234489

p = 0.001111111111
p = 0.00148146666667
Ant 5 : [3, 4], 15
Exploration
avg = 0.000881486901156
p = 0.001111111111
p = 0.00148148133333
Ant 6 : [3, 4], 15
Exploration
avg = 0.0010579304401
p = 0.0022222
Ant 7 : [0, 1], 10
Exploration
avg = 0.000906237817304
p = 0.00111
p = 0.00147999999999
Ant 8 : [4, 3], 15
Exploration
avg = 0.0010579359401
p = 0.002222222
Ant 9 : [0, 1], 10
Exploitation
Ant 1 : [4, 3, 2], 33
Exploitation
Ant 10 : [3, 4], 15
Exploration
avg = 0.0010579359951
p = 0.00222222222
Ant 11 : [0, 1], 10
Exploitation
Ant 12 : [1, 0], 10
Exploration
avg = 0.00112647835732
p = 0.00222
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [2, 3], 18
Exploitation
Ant 2 : [3, 4, 0], 35
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.000761971143092
p = 0.000909081818166
p = 0.00111111111111
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 17 : [1, 0], 10
Exploitation
Ant 18 : [2, 3], 18
Exploitation
Ant 4 : [0, 1, 3], 28

Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.0014444444111
p = 0.0022222222222
Ant 0 : [3, 4, 0, 1], 45
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 6 : [3, 4, 0], 35
Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000631692454541
p = 0.000909090909082
Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 10 : [3, 4, 0], 35
Exploration
avg = 0.000803123406055
p = 0.000909081818166
p = 0.0012345679
Ant 11 : [0, 1, 3], 28
Exploitation
Ant 12 : [1, 0, 4], 30
Exploitation
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 2 : [3, 4, 0, 1], 45
Exploration
avg = 0.00070687725343
p = 0.001111099999
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 16 : [1, 0, 4], 30
Exploitation
Ant 3 : [0, 1, 3, 4], 43
Exploitation
Ant 17 : [1, 0, 4], 30
Exploration
avg = 0.000804945547591
p = 0.00148148148148
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 4 : [0, 1, 3, 4], 43
Exploitation

Ant 19 : [2, 3, 4], 33
Exploitation
Ant 0 : [3, 4, 0, 1, 2], 67
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00144444441111

p = 0.00222222222222
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.00144444441111
p = 0.00222222222222
Ant 6 : [3, 4, 0, 1], 45
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.00222222222222
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [3, 4, 0, 1], 45

Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 11 : [0, 1, 3, 4], 43
Exploitation
Ant 12 : [1, 0, 4, 3], 45
Exploitation
Ant 13 : [1, 0, 4, 3], 45
Exploration
avg = 0.00068841580555
p = 0.00111111111111
Ant 14 : [2, 3, 4, 0], 53
Exploration
avg = 0.00100909081818
Ant 2 : [3, 4, 0, 1, 2], 67
Update called by 2Exploitation

Ant thread 2 terminating.Ant 15 : [1, 0, 4, 3], 45

Exploitation
Ant 16 : [1, 0, 4, 3], 45
Exploitation
Ant 3 : [0, 1, 3, 4, 2], 69
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00116766381766

p = 0.00148148148148

Ant 17 : [1, 0, 4, 3], 45

Exploitation

Ant 18 : [2, 3, 4, 0], 53

Exploitation

Ant 4 : [0, 1, 3, 4, 2], 69

Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [2, 3, 4, 0], 53

Exploitation

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00101010090908

Ant 6 : [3, 4, 0, 1, 2], 67

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 4, 2], 69

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00222222222222

Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 2], 69

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00101010100909

Ant 10 : [3, 4, 0, 1, 2], 67

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00123455555556

Ant 12 : [1, 0, 4, 3, 2], 63

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 0, 1], 63

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0012345679

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00123456790122

Ant 16 : [1, 0, 4, 3, 2], 63
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [1, 0, 4, 3, 2], 63

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00222222222222

Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00222222222222

Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 8, 88
Ant thread 19 terminating.iter_counter = 9

starting ant = 0
starting ant = 1Exploration

starting ant = 2avg = 0.000821116022401

starting ant = 3p = 0.00111111111111

starting ant = 4p = 0.00133333333333

starting ant = 5Ant 0 : [3, 4], 15

starting ant = 6Exploitation

starting ant = 7Ant 1 : [4, 3], 15

starting ant = 8Exploitation

starting ant = 9Ant 2 : [3, 4], 15

starting ant = 10Exploitation

starting ant = 11Ant 3 : [0, 1], 10

starting ant = 12Exploration

starting ant = 13avg = 0.00103214464629

starting ant = 14p = 0.00222

starting ant = 15Ant 4 : [0, 1], 10

starting ant = 16Exploitation

starting ant = 17Ant 5 : [3, 4], 15

starting ant = 18Exploration

starting ant = 19avg = 0.000669459739741

p = 0.001

p = 0.000769230769223

Ant 0 : [3, 4, 2], 41

Exploitation

Ant 6 : [3, 4], 15

Exploration

avg = 0.00103269464629

p = 0.0022222

Ant 7 : [0, 1], 10

Exploitation

Ant 1 : [4, 3, 2], 33

Exploitation

Ant 8 : [4, 3], 15

Exploration

avg = 0.00103270014629

p = 0.002222222

Ant 9 : [0, 1], 10

Exploration

avg = 0.000697664867949

p = 0.001

p = 0.000853846153846

Ant 2 : [3, 4, 2], 41

Exploitation

Ant 10 : [3, 4], 15

Exploration

avg = 0.00103270020129

p = 0.0022222222

Ant 11 : [0, 1], 10

Exploitation

Ant 3 : [0, 1, 3], 28

Exploitation

Ant 12 : [1, 0], 10

Exploitation

Ant 13 : [1, 0], 10

Exploration

avg = 0.000676744527622

p = 0.000909081818182

p = 0.001111111

Ant 14 : [2, 3], 18

Exploration

avg = 0.0011509431731
p = 0.0022222
p = 0.001233333333333
Ant 15 : [1, 3], 18
Exploitation
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.00115125178421
p = 0.0022222
p = 0.00123456777778
Ant 16 : [1, 3], 18
Exploitation
Ant 17 : [1, 0], 10
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 18 : [2, 3], 18
Exploration
avg = 0.000707605666508
p = 0.000909081818182
p = 0.00123455555554
Ant 19 : [2, 3], 18
Exploitation
Ant 0 : [3, 4, 2, 1], 63
Exploitation
Ant 6 : [3, 4, 0], 35
Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [0, 1, 3], 28
Exploitation
Ant 2 : [3, 4, 2, 1], 63
Exploitation
Ant 10 : [3, 4, 0], 35
Exploitation
Ant 11 : [0, 1, 3], 28
Exploration
avg = 0.00135801851851
p = 0.00148148148147
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.000636192861717
p = 0.000999999999999
Ant 12 : [1, 0, 4], 30
Exploitation
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.0010082052274

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p = 0.00123455555556
p = 0.00148148148148
Ant 15 : [1, 3, 4], 33
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 4 : [0, 1, 3, 4], 43
Exploration
avg = 0.0010082052274
p = 0.00123455555556
p = 0.00148148148148
Ant 16 : [1, 3, 4], 33
Exploration
avg = 0.000673226195054
p = 0.00111111
Ant 17 : [1, 0, 4], 30
Exploration
avg = 0.0014111110811
p = 0.00222222222222
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.000773833708881
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33
Exploitation
Ant 0 : [3, 4, 2, 1, 0], 73
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [3, 4, 0, 1], 45

Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 7 : [0, 1, 3, 4], 43
Exploration
avg = 0.00222222222222
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [4, 3, 2, 1], 55

Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.00222222222222
Ant 2 : [3, 4, 2, 1, 0], 73
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00141111108111

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p = 0.0022222222222222
Ant 10 : [3, 4, 0, 1], 45
Exploitation
Ant 11 : [0, 1, 3, 4], 43
Exploitation
Ant 3 : [0, 1, 3, 4, 2], 69
Update called by 3Exploitation

Ant thread 3 terminating.Ant 12 : [1, 0, 4, 3], 45

Exploration
avg = 0.00116809105128
p = 0.00148148133333
Ant 13 : [1, 0, 4, 3], 45
Exploration
avg = 0.000675129725
p = 0.0011111111
Ant 14 : [2, 3, 4, 0], 53
Exploitation
Ant 15 : [1, 3, 4, 0], 53
Exploitation
Ant 4 : [0, 1, 3, 4, 2], 69
Update called by 4Exploitation

Ant thread 4 terminating.Ant 16 : [1, 3, 4, 0], 53

Exploration
avg = 0.00116809116692
p = 0.00148148148
Ant 17 : [1, 0, 4, 3], 45
Exploration
avg = 0.000909090909082
Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000675129780556

p = 0.0011111111111111
Ant 18 : [2, 3, 4, 0], 53
Exploitation
Ant 19 : [2, 3, 4, 0], 53
Exploration
avg = 0.00100909090909
Ant 6 : [3, 4, 0, 1, 2], 67
ExploitationUpdate called by 6

Ant 7 : [0, 1, 3, 4, 2], 69Ant thread 6 terminating.

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0022222222222222

Ant 8 : [4, 3, 2, 1, 0], 65
Update called by 8Exploitation

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Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 2], 69

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00101009090909

Ant 10 : [3, 4, 0, 1, 2], 67

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000854700854701

Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.001234555555556

Ant 12 : [1, 0, 4, 3, 2], 63

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.001234567777778

Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.002222222222222

Ant 14 : [2, 3, 4, 0, 1], 63

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000599999994

Ant 15 : [1, 3, 4, 0, 2], 83

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 3, 4, 0, 2], 83

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.0012345679

Ant 17 : [1, 0, 4, 3, 2], 63

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.002222222222222

Ant 18 : [2, 3, 4, 0, 1], 63

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.002222222222222

Ant 19 : [2, 3, 4, 0, 1], 63

Update called by 19

Best: [3, 4, 0, 1, 2], 85, 9, 92

Ant thread 19 terminating.iter_counter = 10

starting ant = 0

Explorationstarting ant = 1

avg = 0.00080011553127starting ant = 2

p = 0.00111111111111starting ant = 3

p = 0.00133333333333starting ant = 4

Ant 0 : [3, 4], 15starting ant = 5

Explorationstarting ant = 6

avg = 0.000829449426888starting ant = 7

p = 0.001starting ant = 8

p = 0.00133333333332starting ant = 9

Ant 1 : [4, 3], 15starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [3, 4], 15starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [0, 1], 10starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [0, 1], 10starting ant = 16

Explorationstarting ant = 17

avg = 0.000661488124744starting ant = 18

p = 0.001starting ant = 19

p = 0.000769230769231

Ant 0 : [3, 4, 2], 41

Exploration

avg = 0.000837148864603

p = 0.00111111111111

p = 0.00148146666667

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [3, 4], 15

Exploration

avg = 0.00104164367016

p = 0.0022222

Ant 7 : [0, 1], 10

Exploration
avg = 0.000887269939712
p = 0.001
p = 0.00148
Ant 8 : [4, 3], 15
Exploration
avg = 0.00104164917016
p = 0.002222222
Ant 9 : [0, 1], 10
Exploration
avg = 0.000622376263915
p = 0.0011111111111
Ant 1 : [4, 3, 2], 33
Exploration
avg = 0.000867708123495
p = 0.001233333333333
p = 0.00148148148
Ant 10 : [3, 4], 15
Exploitation
Ant 11 : [0, 1], 10
Exploration
avg = 0.000689693252949
p = 0.001
p = 0.000853846153846
Ant 2 : [3, 4, 2], 41
Exploration
avg = 0.00105885888357
p = 0.002
p = 0.001111111111111
Ant 12 : [1, 3], 18
Exploration
avg = 0.00108941443913
p = 0.002
p = 0.001233333333333
Ant 13 : [1, 3], 18
Exploration
avg = 0.000786293326246
p = 0.000909090818182
p = 0.001234555555556
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 14 : [2, 3], 18
Exploration
avg = 0.00108972305024
p = 0.002
p = 0.00123456777778
Ant 15 : [1, 3], 18
Exploitation
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [1, 0], 10
Exploration

avg = 0.00069013275087
p = 0.000909090908182
p = 0.00123333333222
Ant 18 : [2, 3], 18
Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.000598034524091
p = 0.000909090908182
Ant 0 : [3, 4, 2, 1], 63
Exploration
avg = 0.000689975304231
p = 0.001
p = 0.000854692307692
Ant 5 : [3, 4, 2], 41
Exploration
avg = 0.000689978124744
p = 0.001
p = 0.000854700769231
Ant 6 : [3, 4, 2], 41
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000663117004659
p = 0.001233333333333
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [0, 1, 3], 28
Exploitation
Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 10 : [3, 4, 0], 35
Exploitation
Ant 11 : [0, 1, 3], 28
Exploration
avg = 0.000648534524545
p = 0.00101009090909
Ant 2 : [3, 4, 2, 1], 63
Exploitation
Ant 12 : [1, 3, 4], 33
Exploration
avg = 0.000997919272561
p = 0.001234555555556
p = 0.00148148148148
Ant 13 : [1, 3, 4], 33
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.000745833054042
p = 0.00148148148148
Ant 14 : [2, 3, 4], 33
Exploitation

Ant 15 : [1, 3, 4], 33
Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 4 : [0, 1, 3, 4], 43
Exploration
avg = 0.000648124893547
p = 0.000666653999995
p = 0.0009999999
Ant 16 : [1, 0, 4], 30
Exploration
avg = 0.000684791593213
p = 0.001109999999
Ant 17 : [1, 0, 4], 30
Exploitation
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.000745833054042
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33
Exploration
avg = 0.0022222
Ant 0 : [3, 4, 2, 1, 0], 73
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 4, 2, 1], 63

Exploitation
Ant 6 : [3, 4, 2, 1], 63
Exploitation
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploitation
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [3, 4, 0, 1], 45

Exploration
avg = 0.00135801851852
p = 0.00148148148148
Ant 11 : [0, 1, 3, 4], 43
Exploration
avg = 0.00222222222
Ant 2 : [3, 4, 2, 1, 0], 73
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [1, 3, 4, 0], 53

Exploitation
Ant 13 : [1, 3, 4, 0], 53

Exploration
avg = 0.000854700853846
Ant 3 : [0, 1, 3, 4, 2], 69
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [2, 3, 4, 0], 53

Exploitation
Ant 15 : [1, 3, 4, 0], 53
Exploitation
Ant 4 : [0, 1, 3, 4, 2], 69
Update called by 4Exploitation

Ant thread 4 terminating.Ant 16 : [1, 0, 4, 3], 45

Exploitation
Ant 17 : [1, 0, 4, 3], 45
Exploitation
Ant 18 : [2, 3, 4, 0], 53
Exploitation
Ant 19 : [2, 3, 4, 0], 53
Exploitation
Ant 5 : [3, 4, 2, 1, 0], 73
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 2, 1, 0], 73

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000854700854701

Ant 7 : [0, 1, 3, 4, 2], 69
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000854700854701

Ant 9 : [0, 1, 3, 4, 2], 69
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 0, 1, 2], 67

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000666653999995

Ant 12 : [1, 3, 4, 0, 2], 83

Update called by 12Exploitation
Ant thread 12 terminating.Ant 13 : [1, 3, 4, 0, 2], 83
Update called by 13Exploitation
Ant thread 13 terminating.Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploration
Ant thread 14 terminating.avg = 0.000740733332067
Ant 15 : [1, 3, 4, 0, 2], 83
Update called by 15Exploration
Ant thread 15 terminating.avg = 0.00123455555556
Ant 16 : [1, 0, 4, 3, 2], 63
Update called by 16Exploration
Ant thread 16 terminating.avg = 0.00123456777778
Ant 17 : [1, 0, 4, 3, 2], 63
Update called by 17Exploration
Ant thread 17 terminating.avg = 0.00222222222222
Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploitation
Ant thread 18 terminating.Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 10, 95
Ant thread 19 terminating.iter_counter = 11
starting ant = 0
Explorationstarting ant = 1
avg = 0.000781215088978starting ant = 2
p = 0.001111111111starting ant = 3
p = 0.00133333333333starting ant = 4
Ant 0 : [3, 4], 15starting ant = 5
Exploitationstarting ant = 6
Ant 1 : [4, 3], 15starting ant = 7
Exploitationstarting ant = 8
Ant 2 : [3, 4], 15starting ant = 9

Explorationstarting ant = 10

avg = 0.00097915132564starting ant = 11

p = 0.002starting ant = 12

p = 0.000999989999991starting ant = 13

Ant 3 : [0, 4], 20starting ant = 14

Explorationstarting ant = 15

avg = 0.00100665380064starting ant = 16

p = 0.002starting ant = 17

p = 0.0011099999starting ant = 18

Ant 4 : [0, 4], 20starting ant = 19

Exploration

avg = 0.000654313671244

p = 0.001

p = 0.000769230769231

Ant 0 : [3, 4, 2], 41

Exploitation

Ant 5 : [3, 4], 15

Exploration

avg = 0.000818252088978

p = 0.001111111111

p = 0.00148148133333

Ant 6 : [3, 4], 15

Exploitation

Ant 1 : [4, 3, 2], 33

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.000881889099583

p = 0.001

p = 0.00147999999999

Ant 8 : [4, 3], 15

Exploration

avg = 0.000682518799449

p = 0.001

p = 0.000853846153846

Ant 2 : [3, 4, 2], 41

Exploration

avg = 0.00106192882539

p = 0.00222

p = 0.001111099999

Ant 9 : [0, 4], 20

Exploitation

Ant 10 : [3, 4], 15

Exploration
avg = 0.00106193157564
p = 0.00222
p = 0.001111110999999
Ant 11 : [0, 4], 20
Exploration
avg = 0.00105325079324
p = 0.002
p = 0.001111111111111
Ant 12 : [1, 3], 18
Exploitation
Ant 13 : [1, 0], 10
Exploration
avg = 0.00084328973962
p = 0.000854692307692
p = 0.001481466666667
Ant 3 : [0, 4, 3], 35
Exploitation
Ant 14 : [2, 3], 18
Exploitation
Ant 15 : [1, 0], 10
Exploration
avg = 0.0011393563488
p = 0.0022222
p = 0.001233333333333
Ant 16 : [1, 3], 18
Exploitation
Ant 17 : [1, 0], 10
Exploration
avg = 0.000674680082021
p = 0.000909090909091
p = 0.001233333333222
Ant 18 : [2, 3], 18
Exploitation
Ant 4 : [0, 4, 3], 35
Exploration
avg = 0.000674985637851
p = 0.000909090909091
p = 0.001234555555554
Ant 19 : [2, 3], 18
Exploration
avg = 0.000583685617545
p = 0.000909090909091
Ant 0 : [3, 4, 2, 1], 63
Exploitation
Ant 5 : [3, 4, 0], 35
Exploration
avg = 0.000719467517397
p = 0.00111
p = 0.000854692307692
Ant 6 : [3, 4, 2], 41
Exploration
avg = 0.000633685617545
p = 0.00100909090909


```

Ant 1 : [4, 3, 2, 1], 55
Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 2 : [3, 4, 2, 1], 63
Exploitation
Ant 9 : [0, 4, 3], 35
Exploitation
Ant 10 : [3, 4, 0], 35
Exploration
avg = 0.000843297498399
p = 0.000854700769231
p = 0.00148148148147
Ant 11 : [0, 4, 3], 35
Exploitation
Ant 12 : [1, 3, 4], 33
Exploitation
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 3 : [0, 4, 3, 2], 53
Exploration
avg = 0.000720632464687
p = 0.00148148148148
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.000675908804556
p = 0.00111111111111
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 16 : [1, 3, 4], 33
Exploitation
Ant 17 : [1, 0, 4], 30
Exploitation
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.000832517493889
p = 0.00123456777778
Ant 4 : [0, 4, 3, 2], 53
Exploration
avg = 0.000720632464687
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33
Exploration
avg = 0.002222222
Ant 0 : [3, 4, 2, 1, 0], 73
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 4, 0, 1], 45

Exploitation
Ant 6 : [3, 4, 2, 1], 63
Exploration

```

avg = 0.002222222222
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3, 4], 43

Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.002222222222
Ant 2 : [3, 4, 2, 1, 0], 73
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000832517555

p = 0.0012345679
Ant 9 : [0, 4, 3, 2], 53
Exploration
avg = 0.00144443329999
p = 0.0022222
Ant 10 : [3, 4, 0, 1], 45
Exploration
avg = 0.000832517555611
p = 0.00123456790122
Ant 11 : [0, 4, 3, 2], 53
Exploitation
Ant 12 : [1, 3, 4, 0], 53
Exploration
avg = 0.00116809112536
p = 0.00148148148148
Ant 13 : [1, 0, 4, 3], 45
Exploration
avg = 0.00101010101009
Ant 3 : [0, 4, 3, 2, 1], 75
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [2, 3, 4, 0], 53

Exploitation
Ant 15 : [1, 0, 4, 3], 45
Exploration
avg = 0.000982905939615
p = 0.001111111111
Ant 16 : [1, 3, 4, 0], 53
Exploitation
Ant 17 : [1, 0, 4, 3], 45
Exploitation
Ant 18 : [2, 3, 4, 0], 53
Exploration
avg = 0.0010101010101
Ant 4 : [0, 4, 3, 2, 1], 75
Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [2, 3, 4, 0], 53

Exploitation

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [3, 4, 2, 1, 0], 73

ExploitationUpdate called by 6

Ant 7 : [0, 1, 3, 4, 2], 69Ant thread 6 terminating.

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.0010101010101

Ant 9 : [0, 4, 3, 2, 1], 75

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 0, 1, 2], 67

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 4, 3, 2, 1], 75

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 3, 4, 0, 2], 83

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 0, 1], 63

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 4, 3, 2], 63

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 3, 4, 0, 2], 83

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00123456790123

Ant 17 : [1, 0, 4, 3, 2], 63

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.002222222222

Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.002222222222

Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 11, 90
Ant thread 19 terminating.iter_counter = 12

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [3, 4], 15starting ant = 2

Explorationstarting ant = 3

avg = 0.000819225830461starting ant = 4

p = 0.001starting ant = 5

p = 0.001333333333333starting ant = 6

Ant 1 : [4, 3], 15starting ant = 7

Exploitationstarting ant = 8

Ant 0 : [3, 4, 0], 35starting ant = 9

Exploitationstarting ant = 10

Ant 2 : [3, 4], 15starting ant = 11

Explorationstarting ant = 12

avg = 0.000972903458079starting ant = 13

p = 0.002starting ant = 14

p = 0.001starting ant = 15

Ant 3 : [0, 4], 20starting ant = 16

Exploitationstarting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Exploitationstarting ant = 19

Ant 5 : [3, 4], 15
Exploitation

Ant 6 : [3, 4], 15
Exploitation
Ant 1 : [4, 3, 2], 33
Exploration
avg = 0.00105540345808
p = 0.00222
p = 0.00111
Ant 7 : [0, 4], 20
Exploration
avg = 0.000883392497128
p = 0.00111
p = 0.00148
Ant 8 : [4, 3], 15
Exploration
avg = 0.00144333
p = 0.00222
Ant 0 : [3, 4, 0, 1], 45
Exploitation
Ant 9 : [0, 1], 10
Exploitation
Ant 10 : [3, 4], 15
Exploitation
Ant 2 : [3, 4, 0], 35
Exploitation
Ant 11 : [0, 1], 10
Exploration
avg = 0.0010486329891
p = 0.002
p = 0.001111111
Ant 12 : [1, 3], 18
Exploitation
Ant 13 : [1, 0], 10
Exploration
avg = 0.000630217096796
p = 0.000909090909091
p = 0.001111111
Ant 14 : [2, 3], 18
Exploration
avg = 0.00113418857216
p = 0.00222
p = 0.001233333333222
Ant 15 : [1, 3], 18
Exploitation
Ant 3 : [0, 4, 3], 35
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [1, 0], 10
Exploitation
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.000660772679851
p = 0.000909090909091
p = 0.001233333333222

Ant 18 : [2, 3], 18
Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.000684889996171
p = 0.00111111
p = 0.000769230768462
Ant 5 : [3, 4, 2], 41
Exploration
avg = 0.000713095124629
p = 0.00111111
p = 0.000853846153838
Ant 6 : [3, 4, 2], 41
Exploitation
Ant 1 : [4, 3, 2, 1], 55
Exploration
avg = 0.000836837620359
p = 0.000854692307692
p = 0.00148148133333
Ant 7 : [0, 4, 3], 35
Exploitation
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 0 : [3, 4, 0, 1, 2], 67
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00080599927173

p = 0.00100909081736
p = 0.00123456777778
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000713377175914
p = 0.00111111
p = 0.000854692307692
Ant 10 : [3, 4, 2], 41
Exploration
avg = 0.00144444111
p = 0.00222222222
Ant 2 : [3, 4, 0, 1], 45
Exploration
avg = 0.000805999312471
p = 0.00100909081736
p = 0.0012345679
Ant 11 : [0, 1, 3], 28
Exploitation
Ant 12 : [1, 3, 4], 33
Exploration
avg = 0.000667571277439
p = 0.00111111
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [2, 3, 4], 33
Exploration

avg = 0.000980330289787
p = 0.00123455555556
p = 0.00148148148148
Ant 15 : [1, 3, 4], 33
Exploitation
Ant 3 : [0, 4, 3, 2], 53
Exploitation
Ant 16 : [1, 0, 4], 30
Exploitation
Ant 17 : [1, 0, 4], 30
Exploitation
Ant 4 : [0, 1, 3, 4], 43
Exploitation
Ant 18 : [2, 3, 4], 33
Exploration
avg = 0.000697951934268
p = 0.00148148148148
Ant 19 : [2, 3, 4], 33
Exploitation
Ant 5 : [3, 4, 2, 1], 63
Exploitation
Ant 6 : [3, 4, 2, 1], 63
Exploitation
Ant 1 : [4, 3, 2, 1, 0], 65
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 4, 3, 2], 53

Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.00135802469074
p = 0.00148148148148
Ant 9 : [0, 1, 3, 4], 43
Exploitation
Ant 10 : [3, 4, 2, 1], 63
Exploitation
Ant 2 : [3, 4, 0, 1, 2], 67
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [0, 1, 3, 4], 43

Exploration
avg = 0.000982900384615
p = 0.00111111
Ant 12 : [1, 3, 4, 0], 53
Exploration
avg = 0.00116809112462
p = 0.00148148148
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [2, 3, 4, 0], 53
Exploration
avg = 0.000982905939615

p = 0.001111111111
Ant 15 : [1, 3, 4, 0], 53
Exploration
avg = 0.00101010101009
Ant 3 : [0, 4, 3, 2, 1], 75
Update called by 3Exploitation

Ant thread 3 terminating.Ant 16 : [1, 0, 4, 3], 45

Exploitation
Ant 17 : [1, 0, 4, 3], 45
Exploitation
Ant 4 : [0, 1, 3, 4, 2], 69
Update called by 4Exploitation

Ant thread 4 terminating.Ant 18 : [2, 3, 4, 0], 53

Exploration
avg = 0.000642725165581
p = 0.001111111111111
Ant 19 : [2, 3, 4, 0], 53
Exploration
avg = 0.002222222222
Ant 5 : [3, 4, 2, 1, 0], 73
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00222222222222

Ant 6 : [3, 4, 2, 1, 0], 73
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.001010101010101

Ant 7 : [0, 4, 3, 2, 1], 75
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.002222222222222

Ant 8 : [4, 3, 2, 1, 0], 65
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000854700853846

Ant 9 : [0, 1, 3, 4, 2], 69
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 2, 1, 0], 73

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 1, 3, 4, 2], 69

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.0006666599999994

Ant 12 : [1, 3, 4, 0, 2], 83
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 0, 1], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0007399999933333

Ant 15 : [1, 3, 4, 0, 2], 83
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00123456790122

Ant 16 : [1, 0, 4, 3, 2], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00123456790123

Ant 17 : [1, 0, 4, 3, 2], 63
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.002222222222222

Ant 18 : [2, 3, 4, 0, 1], 63
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 4, 0, 1], 63
Update called by 19
Best: [3, 4, 0, 1, 2], 85, 12, 91
Ant thread 19 terminating.

Results

Best path = [3, 4, 0, 1, 2]
('D ' ,)
('E ' ,)
('A ' ,)
('B ' ,)
('C ' ,)

Best path cost = 85

>>>

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester

```

3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
pickled.py
>>>
  RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py
[[0, 10, 30, 31, 20, 28], [10, 0, 22, 18, 40, 26], [30, 22, 0, 18, 26, 23], [31,
18, 18, 0, 15, 22], [20, 40, 26, 15, 0, 12], [28, 26, 23, 22, 12, 0]]
6
Average = 18
Tau0 = 0.0185185185185
iter_counter = 1
starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [0, 1], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000979524590636starting ant = 4

p = 0.00185185185185starting ant = 5

p = 0.00102880658436starting ant = 6

Ant 1 : [1, 3], 18starting ant = 7

Explorationstarting ant = 8

avg = 0.000761442775332starting ant = 9

p = 0.000841750841751starting ant = 10

p = 0.00102880658436starting ant = 11

Ant 0 : [0, 1, 3], 28starting ant = 12

Explorationstarting ant = 13

avg = 0.000975783475783starting ant = 14

p = 0.00123456790123starting ant = 15

p = 0.00154320987654starting ant = 16

Ant 2 : [4, 5], 12starting ant = 17

Explorationstarting ant = 18

avg = 0.000946260695365starting ant = 19

p = 0.00102880658436

```

p = 0.00102880658436
p = 0.00123456790123
Ant 3 : [3, 4], 15
Exploration
avg = 0.000912748014197
p = 0.00154320987654
Ant 4 : [5, 4], 12
Exploration
avg = 0.000946260695365
p = 0.00102880658436
p = 0.00102880658436
p = 0.00123456790123
Ant 5 : [3, 4], 15
Exploration
avg = 0.000801049013609
p = 0.000841750841751
p = 0.00102880658436
p = 0.000805152979066
Ant 6 : [2, 5], 23
Exploration
avg = 0.000925624223115
p = 0.00102880658436
p = 0.00123456790123
Ant 1 : [1, 3, 4], 33
Exploitation
Ant 7 : [0, 1], 10
Exploitation
Ant 8 : [2, 3], 18
Exploitation
Ant 9 : [2, 3], 18
Exploitation
Ant 10 : [3, 4], 15
Exploration
avg = 0.000975783475783
p = 0.00123456790123
p = 0.00154320987654
Ant 11 : [4, 5], 12
Exploration
avg = 0.00103504177578
p = 0.00123456790123
Ant 0 : [0, 1, 3, 4], 43
Exploitation
Ant 12 : [3, 4], 15
Exploration
avg = 0.000801049013609
p = 0.000841750841751
p = 0.00102880658436
p = 0.000805152979066
Ant 13 : [2, 5], 23
Exploration
avg = 0.000975783475783
p = 0.00123456790123
p = 0.00154320987654
Ant 14 : [4, 5], 12

Exploration
avg = 0.000801049013609
p = 0.000841750841751
p = 0.00102880658436
p = 0.000805152979066
Ant 15 : [2, 5], 23
Exploitation
Ant 16 : [4, 5], 12
Exploitation
Ant 2 : [4, 5, 3], 34
Exploitation
Ant 17 : [2, 3], 18
Exploitation
Ant 18 : [4, 5], 12
Exploitation
Ant 19 : [5, 4], 12
Exploitation
Ant 3 : [3, 4, 5], 27
Exploitation
Ant 4 : [5, 4, 3], 27
Exploitation
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [2, 5, 4], 35
Exploitation
Ant 1 : [1, 3, 4, 5], 45
Exploration
avg = 0.000761442775332
p = 0.000841750841751
p = 0.00102880658436
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000925624223115
p = 0.00102880658436
p = 0.00123456790123
Ant 8 : [2, 3, 4], 33
Exploration
avg = 0.000925624223115
p = 0.00102880658436
p = 0.00123456790123
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000911087369421
p = 0.000925925925926
p = 0.00154320987654
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000755132548611
p = 0.000805152979066
p = 0.000841750841751
Ant 11 : [4, 5, 3], 34
Exploitation
Ant 0 : [0, 1, 3, 4, 5], 55
Exploitation

Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.00093964677298
p = 0.00154320987654
Ant 13 : [2, 5, 4], 35
Exploration
avg = 0.000755132548611
p = 0.000805152979066
p = 0.000841750841751
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 5, 4], 35
Exploration
avg = 0.000755132548611
p = 0.000805152979066
p = 0.000841750841751
Ant 16 : [4, 5, 3], 34
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 2 : [4, 5, 3, 2], 52
Exploitation
Ant 17 : [2, 3, 4], 33
Exploration
avg = 0.000755132548611
p = 0.000805152979066
p = 0.000841750841751
Ant 18 : [4, 5, 3], 34
Exploration
avg = 0.000833926875594
p = 0.000925925925926
p = 0.00123456790123
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000726259784231
p = 0.000805152979066
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 4 : [5, 4, 3, 2], 45
Exploration
avg = 0.000726259784231
p = 0.000805152979066
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [2, 5, 4, 3], 50
Exploration
avg = 0.000733264320221
p = 0.000805152979066
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration

```
avg = 0.00103504177578
p = 0.00123456790123
Ant 7 : [0, 1, 3, 4], 43
Exploration
avg = 0.000977366255144
p = 0.00154320987654
Ant 8 : [2, 3, 4, 5], 45
Exploitation
Ant 9 : [2, 3, 4, 5], 45
Exploitation
Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 11 : [4, 5, 3, 2], 52
Exploration
avg = 0.000805152979066
Ant 0 : [0, 1, 3, 4, 5, 2], 78
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000726259784231
```

```
p = 0.000805152979066
Ant 12 : [3, 4, 5, 2], 50
Exploration
avg = 0.000874485596708
p = 0.000925925925926
p = 0.00123456790123
Ant 13 : [2, 5, 4, 3], 50
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 5, 4, 3], 50
Exploitation
Ant 16 : [4, 5, 3, 1], 52
Exploration
avg = 0.000729517396184
p = 0.000841750841751
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000977366255144
p = 0.00154320987654
Ant 17 : [2, 3, 4, 5], 45
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 18 : [4, 5, 3, 2], 52
Exploration
avg = 0.000884994911279
```

p = 0.00102880658436
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000729517396184
p = 0.000841750841751
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 4 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000729517396184
p = 0.000841750841751
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [2, 5, 4, 3, 1], 68
Exploitation
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.0011277302944

p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000686813186813
p = 0.000712250712251
Ant 8 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000729517396184
p = 0.000841750841751
Ant 10 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 11 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 12 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 13 : [2, 5, 4, 3, 1], 68
Exploration
avg = 0.000729517396184
p = 0.000841750841751
Ant 14 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 15 : [2, 5, 4, 3, 1], 68
Exploration
avg = 0.0013468013468
p = 0.00185185185185
Ant 16 : [4, 5, 3, 1, 0], 62
Exploration
avg = 0.00185185185185
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000686813186813

p = 0.000712250712251

Ant 17 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 18 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000729517396184

p = 0.000841750841751

Ant 19 : [5, 4, 3, 2, 1], 67

Exploitation

Ant 3 : [3, 4, 5, 2, 1, 0], 82

Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [5, 4, 3, 2, 1, 0], 77

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [2, 5, 4, 3, 1, 0], 78

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 4, 5, 2], 78

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [2, 3, 4, 5, 1, 0], 81

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [4, 5, 3, 2, 1, 0], 84

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [3, 4, 5, 2, 1, 0], 82

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 5, 4, 3, 1, 0], 78
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00185185185185

Ant 15 : [2, 5, 4, 3, 1, 0], 78
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 5, 3, 1, 0, 2], 92
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [2, 3, 4, 5, 1, 0], 81
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [4, 5, 3, 2, 1, 0], 84
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 1, 108
Ant thread 19 terminating.iter_counter = 2

starting ant = 0
Explorationstarting ant = 1

avg = 0.000837685611879starting ant = 2

p = 0.00166666666667starting ant = 3

Ant 0 : [0, 1], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.000881572131572starting ant = 6

p = 0.00166666666667starting ant = 7

p = 0.000925925925926starting ant = 8

Ant 1 : [1, 3], 18starting ant = 9

Exploitationstarting ant = 10

Ant 2 : [4, 5], 12starting ant = 11

Exploitationstarting ant = 12

Ant 3 : [3, 4], 15starting ant = 13

Explorationstarting ant = 14

avg = 0.000710761460761starting ant = 15

p = 0.000757575757576starting ant = 16

p = 0.00102777777778starting ant = 17

Ant 0 : [0, 1, 3], 28starting ant = 18

Explorationstarting ant = 19

avg = 0.000821473212778

p = 0.00138888888889

Ant 4 : [5, 4], 12

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [2, 3], 18

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 1 : [1, 3, 4], 33

Exploration

avg = 0.000741518186323

p = 0.000757575757576

p = 0.0010287962963

Ant 9 : [2, 3], 18

Exploration

avg = 0.000876325959162

p = 0.000925925925926

p = 0.000925925925926

p = 0.00123456777778

Ant 10 : [3, 4], 15

Exploration

avg = 0.00067961929375

p = 0.000724637681159

p = 0.000757575757576

Ant 2 : [4, 5, 3], 34

Exploitation

Ant 11 : [4, 5], 12

Exploitation

Ant 12 : [3, 4], 15

Exploration

avg = 0.000858555021368

p = 0.00154319444444

Ant 3 : [3, 4, 5], 27

Exploration
avg = 0.00074152022336
p = 0.000757575757576
p = 0.00102880648148
Ant 13 : [2, 3], 18
Exploration
avg = 0.000909069294872
p = 0.001111111111111
p = 0.00154320972222
Ant 14 : [4, 5], 12
Exploitation
Ant 15 : [2, 3], 18
Exploration
avg = 0.000909069325427
p = 0.001111111111111
p = 0.001543209875
Ant 16 : [4, 5], 12
Exploration
avg = 0.000741520243934
p = 0.000757575757576
p = 0.00102880658435
Ant 17 : [2, 3], 18
Exploration
avg = 0.000972689861575
p = 0.00123456790122
Ant 0 : [0, 1, 3, 4], 43
Exploration
avg = 0.000909069325733
p = 0.001111111111111
p = 0.00154320987653
Ant 18 : [4, 5], 12
Exploitation
Ant 19 : [5, 4], 12
Exploitation
Ant 4 : [5, 4, 3], 27
Exploration
avg = 0.000858558879392
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [2, 3, 4], 33
Exploration
avg = 0.000711016090391
p = 0.000757575757576
p = 0.0010287962963
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000863925998335
p = 0.000925925925926
p = 0.00123456790123
Ant 8 : [2, 3, 4], 33
Exploitation
Ant 1 : [1, 3, 4, 5], 45
Exploitation

Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000858558879392
p = 0.00154320987654
Ant 10 : [3, 4, 5], 27
Exploitation
Ant 2 : [4, 5, 3, 1], 52
Exploitation
Ant 11 : [4, 5, 3], 34
Exploitation
Ant 12 : [3, 4, 5], 27
Exploitation
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000889388961298
p = 0.00102777777778
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploration
avg = 0.000720588496648
p = 0.000804347826087
p = 0.000841742424242
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [4, 5, 3], 34
Exploration
avg = 0.000889388961298
p = 0.00102777777778
p = 0.00123456790123
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 0 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000720590600815
p = 0.000804347826087
p = 0.000841750840909
Ant 18 : [4, 5, 3], 34
Exploration
avg = 0.00078108974359
p = 0.000833333333333
p = 0.001233333333333
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000830446037435
p = 0.00102777777778
p = 0.000925925925926
Ant 4 : [5, 4, 3, 2], 45
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [2, 3, 4, 5], 45
Exploration

```
avg = 0.00100664047886
p = 0.001027777777778
p = 0.00123456790123
Ant 7 : [0, 1, 3, 4], 43
Exploration
avg = 0.000931069958848
p = 0.00154320987654
Ant 8 : [2, 3, 4, 5], 45
Exploration
avg = 0.000700191511387
p = 0.000805144927536
Ant 1 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000680472211605
p = 0.000805152898551
Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.00121212121212
p = 0.001666666666667
Ant 2 : [4, 5, 3, 1, 0], 62
Exploration
avg = 0.000864396654719
p = 0.001027777777778
p = 0.001027777777778
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 12 : [3, 4, 5, 2], 50
Exploitation
Ant 3 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000931069958848
p = 0.00154320987654
Ant 13 : [2, 3, 4, 5], 45
Exploitation
Ant 14 : [4, 5, 3, 2], 52
Exploration
avg = 0.000931069958848
p = 0.00154320987654
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.000864739555954
p = 0.001027777777778
p = 0.00102880648148
Ant 16 : [4, 5, 3, 2], 52
Exploration
avg = 0.000931069958848
p = 0.00154320987654
Ant 17 : [2, 3, 4, 5], 45
Exploration
avg = 0.000805152979058
Ant 0 : [0, 1, 3, 4, 5, 2], 78
Update called by 0Exploitation
```

Ant thread 0 terminating.Ant 18 : [4, 5, 3, 2], 52

Exploitation

Ant 19 : [5, 4, 3, 2], 45

Exploration

avg = 0.000698232323232

p = 0.000840909090909

Ant 4 : [5, 4, 3, 2, 1], 67

Exploitation

Ant 5 : [3, 4, 5, 2, 1], 72

Exploitation

Ant 6 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 7 : [0, 1, 3, 4, 5], 55

Exploitation

Ant 8 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000555555555556

Ant 1 : [1, 3, 4, 5, 2, 0], 98

Update called by 1Exploitation

Ant thread 1 terminating.Ant 9 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000729208712121

p = 0.000841750757576

Ant 10 : [3, 4, 5, 2, 1], 72

Exploration

avg = 0.000555555555556

Ant 2 : [4, 5, 3, 1, 0, 2], 92

ExploitationUpdate called by 2

Ant 11 : [4, 5, 3, 2, 1], 74Ant thread 2 terminating.

Exploitation

Ant 12 : [3, 4, 5, 2, 1], 72

Exploration

avg = 0.00185

Ant 3 : [3, 4, 5, 2, 1, 0], 82

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000653744368132

p = 0.000712250641026

Ant 13 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000729208754209

p = 0.000841750841751

Ant 14 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000653744403388

p = 0.000712250711538

Ant 15 : [2, 3, 4, 5, 1], 71

Exploitation
Ant 16 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000653744403741
p = 0.000712250712244
Ant 17 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000729208754209
p = 0.000841750841751
Ant 18 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.001851833333333
Ant 4 : [5, 4, 3, 2, 1, 0], 77
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [2, 3, 4, 5, 1, 0], 81

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000805152979066

Ant 7 : [0, 1, 3, 4, 5, 2], 78
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185183

Ant 8 : [2, 3, 4, 5, 1, 0], 81
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [4, 5, 3, 2, 1, 0], 84

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185

Ant 12 : [3, 4, 5, 2, 1, 0], 82
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [2, 3, 4, 5, 1, 0], 81

Update called by 13Exploration
Ant thread 13 terminating.avg = 0.00185185185185
Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploitation
Ant thread 14 terminating.Ant 15 : [2, 3, 4, 5, 1, 0], 81
Update called by 15Exploitation
Ant thread 15 terminating.Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [2, 3, 4, 5, 1, 0], 81
Update called by 17Exploitation
Ant thread 17 terminating.Ant 18 : [4, 5, 3, 2, 1, 0], 84
Update called by 18Exploitation
Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 2, 109
Ant thread 19 terminating.iter_counter = 3

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [0, 1], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000845266751748starting ant = 4

p = 0.00166666666667starting ant = 5

p = 0.000925925833333starting ant = 6

Ant 1 : [1, 3], 18starting ant = 7

Explorationstarting ant = 8

avg = 0.000665379758898starting ant = 9

p = 0.000681818181818starting ant = 10

p = 0.00102777777685starting ant = 11

Ant 0 : [0, 1, 3], 28starting ant = 12

Explorationstarting ant = 13

avg = 0.000840382393162starting ant = 14

p = 0.00111111starting ant = 15

p = 0.00138888888889starting ant = 16

Ant 2 : [4, 5], 12starting ant = 17

Explorationstarting ant = 18

avg = 0.000825545237319starting ant = 19

p = 0.000925

p = 0.000925925925926

p = 0.00111111111111

Ant 3 : [3, 4], 15

Exploitation

Ant 4 : [5, 4], 12

Exploration

avg = 0.000849989681764

p = 0.000925

p = 0.000925925925926

p = 0.00123333333333

Ant 5 : [3, 4], 15

Exploration

avg = 0.000693519734694

p = 0.000757575757576

p = 0.000925925925926

Ant 6 : [2, 3], 18

Exploration

avg = 0.00083154265776

p = 0.000925925925926

p = 0.00123455555556

Ant 1 : [1, 3, 4], 33

Exploration

avg = 0.000834917017358

p = 0.00184999983333

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18

Exploration

avg = 0.000850236570653

p = 0.000925

p = 0.000925925925926

p = 0.00123456777778

Ant 10 : [3, 4], 15

Exploration

avg = 0.000870937948718

p = 0.0011111

p = 0.00154166666667

Ant 11 : [4, 5], 12
Exploitation
Ant 0 : [0, 1, 3, 4], 43
Exploitation
Ant 12 : [3, 4], 15
Exploration
avg = 0.000714095845805
p = 0.000757575757576
p = 0.00102880648148
Ant 13 : [2, 3], 18
Exploitation
Ant 14 : [4, 5], 12
Exploitation
Ant 15 : [2, 3], 18
Exploration
avg = 0.000871246559829
p = 0.0011111
p = 0.00154320972222
Ant 16 : [4, 5], 12
Exploration
avg = 0.000664738341367
p = 0.000724637681159
p = 0.000757575757568
Ant 2 : [4, 5, 3], 34
Exploitation
Ant 17 : [2, 3], 18
Exploration
avg = 0.000871246590385
p = 0.0011111
p = 0.001543209875
Ant 18 : [4, 5], 12
Exploitation
Ant 19 : [5, 4], 12
Exploration
avg = 0.000811283238363
p = 0.00154320987653
Ant 3 : [3, 4, 5], 27
Exploration
avg = 0.000703255769231
p = 0.00075
p = 0.0011111
Ant 4 : [5, 4, 3], 27
Exploitation
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000831314262699
p = 0.000925
p = 0.00123456790123
Ant 6 : [2, 3, 4], 33
Exploration
avg = 0.000956710984489
p = 0.00154320987654
Ant 1 : [1, 3, 4, 5], 45
Exploitation

Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000831314262699
p = 0.000925
p = 0.00123456790123
Ant 8 : [2, 3, 4], 33
Exploitation
Ant 9 : [2, 3, 4], 33
Exploitation
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000685571674702
p = 0.000724637681159
p = 0.000840909090909
Ant 11 : [4, 5, 3], 34
Exploration
avg = 0.00106006647673
p = 0.00154320987654
Ant 0 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.000831314262699
p = 0.000925
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploitation
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [4, 5, 3], 34
Exploitation
Ant 2 : [4, 5, 3, 2], 52
Exploration
avg = 0.000831314262699
p = 0.000925
p = 0.00123456790123
Ant 17 : [2, 3, 4], 33
Exploration
avg = 0.000685782112202
p = 0.000724637681159
p = 0.000841750840909
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000812216248507
p = 0.000925
p = 0.00102777777778
Ant 4 : [5, 4, 3, 2], 45
Exploitation

Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000889403292181
p = 0.00154320987654
Ant 6 : [2, 3, 4, 5], 45
Exploitation
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000981727459783
p = 0.0010287962963
p = 0.00123456790123
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [2, 3, 4, 5], 45
Exploitation
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000660630941764
p = 0.000805152898551
Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.000812555754679
p = 0.000925
p = 0.0010287962963
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 0 : [0, 1, 3, 4, 5, 2], 78
Update called by 0Exploitation

Ant thread 0 terminating.Ant 12 : [3, 4, 5, 2], 50

Exploration
avg = 0.000889403292181
p = 0.00154320987654
Ant 13 : [2, 3, 4, 5], 45
Exploration
avg = 0.000812559149741
p = 0.000925
p = 0.00102880648148
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploitation
Ant 16 : [4, 5, 3, 2], 52
Exploitation
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000889403292181
p = 0.00154320987654
Ant 17 : [2, 3, 4, 5], 45
Exploration
avg = 0.000812559184031
p = 0.000925
p = 0.00102880658435

Ant 18 : [4, 5, 3, 2], 52
Exploration
avg = 0.000812559184035
p = 0.000925
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000697954545455
p = 0.000840909090909
Ant 3 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000698371212121
p = 0.000841742424242
Ant 4 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.00058836996337
p = 0.000641025641026
Ant 6 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000555
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00106006647673

p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000623626373626
p = 0.000711538461538
Ant 8 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000623978937729
p = 0.000712243589744
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00072920597601
p = 0.000841750840909
Ant 10 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000729205976427
p = 0.000841750841742
Ant 11 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000729205976431
p = 0.000841750841751
Ant 12 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 13 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 14 : [4, 5, 3, 2, 1], 74
Exploitation

Ant 15 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000729205976431

p = 0.000841750841751

Ant 16 : [4, 5, 3, 2, 1], 74

Exploitation

Ant 2 : [4, 5, 3, 2, 1, 0], 84

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000623982498979

p = 0.000712250712244

Ant 17 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 18 : [4, 5, 3, 2, 1], 74

Exploitation

Ant 19 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.00185

Ant 3 : [3, 4, 5, 2, 1, 0], 82

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.001851833333333

Ant 4 : [5, 4, 3, 2, 1, 0], 77

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00185185166667

Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185

Ant 6 : [2, 3, 4, 5, 1, 0], 81

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 4, 5, 2], 78

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [2, 3, 4, 5, 1, 0], 81

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [4, 5, 3, 2, 1, 0], 84

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [3, 4, 5, 2, 1, 0], 82

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 3, 4, 5, 1, 0], 81

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [4, 5, 3, 2, 1, 0], 84

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 4, 5, 1, 0], 81

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [2, 3, 4, 5, 1, 0], 81

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [4, 5, 3, 2, 1, 0], 84

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 3, 108

Ant thread 19 terminating.iter_counter = 4

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [0, 1], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.00059907324155starting ant = 6
p = 0.000613636363636starting ant = 7
p = 0.000925925833333starting ant = 8
Ant 0 : [0, 1, 3], 28starting ant = 9
Explorationstarting ant = 10
avg = 0.000806343931424starting ant = 11
p = 0.001111099999starting ant = 12
p = 0.00138888888889starting ant = 13
Ant 2 : [4, 5], 12starting ant = 14
Explorationstarting ant = 15
avg = 0.000783731454328starting ant = 16
p = 0.0008325starting ant = 17
p = 0.000925925925926starting ant = 18
p = 0.00111111111111starting ant = 19
Ant 3 : [3, 4], 15
Exploitation
Ant 1 : [1, 0, 4], 30
Exploitation
Ant 4 : [5, 4], 12
Exploration
avg = 0.000808175898773
p = 0.0008325
p = 0.000925925925926
p = 0.00123333333333
Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [2, 3], 18
Exploitation
Ant 7 : [0, 1], 10
Exploitation
Ant 8 : [2, 3], 18
Exploitation
Ant 0 : [0, 1, 3, 4], 43
Exploitation
Ant 9 : [2, 3], 18
Exploitation
Ant 10 : [3, 4], 15
Exploration
avg = 0.000836899486979
p = 0.001111099999

p = 0.00154166666667
Ant 11 : [4, 5], 12
Exploitation
Ant 12 : [3, 4], 15
Exploration
avg = 0.000689512906005
p = 0.000757575757576
p = 0.00102880648148
Ant 13 : [2, 3], 18
Exploration
avg = 0.000651345484224
p = 0.000724637681159
p = 0.000757575757568
Ant 2 : [4, 5, 3], 34
Exploration
avg = 0.000837205042535
p = 0.001111099999
p = 0.00154319444444
Ant 14 : [4, 5], 12
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [4, 5], 12
Exploration
avg = 0.00068951292658
p = 0.000757575757576
p = 0.00102880658435
Ant 17 : [2, 3], 18
Exploitation
Ant 18 : [4, 5], 12
Exploration
avg = 0.0008460763596
p = 0.00154166652777
Ant 19 : [5, 4], 12
Exploration
avg = 0.00076873516144
p = 0.00154320987653
Ant 3 : [3, 4, 5], 27
Exploration
avg = 0.00105784688159
p = 0.001111099999
p = 0.00154320987654
Ant 1 : [1, 0, 4, 5], 42
Exploration
avg = 0.000660707692058
p = 0.000675
p = 0.001111099999
Ant 4 : [5, 4, 3], 27
Exploration
avg = 0.000768735161443
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [2, 3, 4], 33

Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00077904703396
p = 0.0008325
p = 0.00123456790123
Ant 8 : [2, 3, 4], 33
Exploration
avg = 0.00103122032289
p = 0.00154320987654
Ant 0 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000768735161443
p = 0.00154320987654
Ant 10 : [3, 4, 5], 27
Exploitation
Ant 11 : [4, 5, 3], 34
Exploration
avg = 0.000768735161443
p = 0.00154320987654
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.00077904703396
p = 0.0008325
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploitation
Ant 2 : [4, 5, 3, 2], 52
Exploration
avg = 0.000672387150893
p = 0.000724637681159
p = 0.000841742424242
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [4, 5, 3], 34
Exploitation
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000615935393109
p = 0.000641025641026
p = 0.000724637681159
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000823049333915
p = 0.000841750841742
Ant 1 : [1, 0, 4, 5, 3], 64

Exploration
avg = 0.000765253882915
p = 0.0008325
p = 0.001027777777778
Ant 4 : [5, 4, 3, 2], 45
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [2, 3, 4, 5], 45
Exploitation
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [2, 3, 4, 5], 45
Exploration
avg = 0.000805144927536
Ant 0 : [0, 1, 3, 4, 5, 2], 78
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000851903292181

p = 0.00154320987654
Ant 9 : [2, 3, 4, 5], 45
Exploitation
Ant 10 : [3, 4, 5, 2], 50
Exploitation
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 12 : [3, 4, 5, 2], 50
Exploration
avg = 0.000851903292181
p = 0.00154320987654
Ant 13 : [2, 3, 4, 5], 45
Exploration
avg = 0.000656285378788
p = 0.000757575757576
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.00076559678415
p = 0.0008325
p = 0.00102880648148
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.0007655968181
p = 0.0008325
p = 0.00102880658333
Ant 16 : [4, 5, 3, 2], 52
Exploration
avg = 0.000851903292181
p = 0.00154320987654
Ant 17 : [2, 3, 4, 5], 45
Exploitation
Ant 18 : [4, 5, 3, 2], 52

Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000697952045455
p = 0.000840909090909
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000698368712121

p = 0.000841742424242
Ant 4 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00103122032289
p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000596840659341
p = 0.000711538461538
Ant 8 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000698372920455
p = 0.000841750840909
Ant 10 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 11 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000698372920875
p = 0.000841750841751
Ant 12 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000597196749084
p = 0.000712250641026
Ant 13 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00185
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000698372920875

p = 0.000841750841751
Ant 14 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000597196784341
p = 0.000712250711538

Ant 15 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000698372920875
p = 0.000841750841751
Ant 16 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 17 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 18 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000698372920875
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.001851833333333
Ant 3 : [3, 4, 5, 2, 1, 0], 82
Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [5, 4, 3, 2, 1, 0], 77
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00185185185

Ant 5 : [3, 4, 5, 2, 1, 0], 82
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185183

Ant 6 : [2, 3, 4, 5, 1, 0], 81
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000805152979058

Ant 7 : [0, 1, 3, 4, 5, 2], 78
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [2, 3, 4, 5, 1, 0], 81
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [2, 3, 4, 5, 1, 0], 81
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 5, 2, 1, 0], 82
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [4, 5, 3, 2, 1, 0], 84
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185

Ant 12 : [3, 4, 5, 2, 1, 0], 82
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 3, 4, 5, 1, 0], 81
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 4, 5, 1, 0], 81
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [2, 3, 4, 5, 1, 0], 81
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [4, 5, 3, 2, 1, 0], 84
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00185185185185

Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 4, 108
Ant thread 19 terminating.iter_counter = 5

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [0, 1], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [0, 1, 3], 28starting ant = 6

Explorationstarting ant = 7

avg = 0.000775709316039starting ant = 8

p = 0.001111099999starting ant = 9

p = 0.00138888888889starting ant = 10

Ant 2 : [4, 5], 12starting ant = 11

Exploitationstarting ant = 12

Ant 3 : [3, 4], 15starting ant = 13

Explorationstarting ant = 14

avg = 0.000526622263825starting ant = 15

p = 0.000831075starting ant = 16

Ant 1 : [1, 0, 4], 30starting ant = 17

Explorationstarting ant = 18

avg = 0.000789208529988starting ant = 19

p = 0.00138887499875

Ant 4 : [5, 4], 12

Exploration

avg = 0.000770543494081

p = 0.000925925925926

p = 0.00123333333333

Ant 5 : [3, 4], 15

Exploitation

Ant 0 : [0, 1, 3, 4], 43

Exploration

avg = 0.000635713149075

p = 0.000757575757576

p = 0.000925925925926

Ant 6 : [2, 3], 18

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18

Exploration

avg = 0.000770790382969

p = 0.000925925925926

p = 0.00123456777778

Ant 10 : [3, 4], 15

Exploitation

Ant 2 : [4, 5, 3], 34

Exploitation

Ant 11 : [4, 5], 12
Exploitation
Ant 12 : [3, 4], 15
Exploitation
Ant 3 : [3, 4, 5], 27
Exploitation
Ant 13 : [2, 3], 18
Exploitation
Ant 14 : [4, 5], 12
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [4, 5], 12
Exploitation
Ant 1 : [1, 0, 4, 5], 42
Exploitation
Ant 17 : [2, 3], 18
Exploitation
Ant 18 : [4, 5], 12
Exploration
avg = 0.000836433502458
p = 0.000840909090909
p = 0.00154166652777
Ant 19 : [5, 4], 12
Exploitation
Ant 4 : [5, 4, 3], 27
Exploration
avg = 0.000730441892213
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 0 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 6 : [2, 3, 4], 33
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000732006528095
p = 0.00074925
p = 0.00123456790123
Ant 8 : [2, 3, 4], 33
Exploration
avg = 0.000732006528095
p = 0.00074925
p = 0.00123456790123
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000730441892213
p = 0.00154320987654
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000689037136599
p = 0.00074925
p = 0.000925925925926


```
Ant 2 : [4, 5, 3, 2], 52
Exploitation
Ant 11 : [4, 5, 3], 34
Exploration
avg = 0.000730441892213
p = 0.00154320987654
Ant 12 : [3, 4, 5], 27
Exploitation
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000732006528095
p = 0.00074925
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploration
avg = 0.000680261115696
p = 0.000804347826087
p = 0.000841742424242
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [4, 5, 3], 34
Exploitation
Ant 1 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000732006528095
p = 0.00074925
p = 0.00123456790123
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000722987753883
p = 0.00074925
p = 0.001027777777778
Ant 4 : [5, 4, 3, 2], 45
Exploration
avg = 0.000626434012847
p = 0.000641025641026
p = 0.000804347826087
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000805144927536
Ant 0 : [0, 1, 3, 4, 5, 2], 78
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000818153292181

p = 0.00154320987654
Ant 6 : [2, 3, 4, 5], 45
Exploitation
```

Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [2, 3, 4, 5], 45
Exploitation
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000626702370335
p = 0.000641025641026
p = 0.000805152898551
Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.000628535628788
p = 0.000757575757576
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000723327260056
p = 0.00074925
p = 0.0010287962963
Ant 11 : [4, 5, 3, 2], 52
Exploration
avg = 0.000626702396905
p = 0.000641025641026
p = 0.000805152978261
Ant 12 : [3, 4, 5, 2], 50
Exploitation
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 13 : [2, 3, 4, 5], 45
Exploration
avg = 0.000723330655117
p = 0.00074925
p = 0.00102880648148
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.000723330689068
p = 0.00074925
p = 0.00102880658333
Ant 16 : [4, 5, 3, 2], 52
Exploitation
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploitation

Ant thread 1 terminating.Ant 17 : [2, 3, 4, 5], 45

Exploitation
Ant 18 : [4, 5, 3, 2], 52
Exploration
avg = 0.000723330689411
p = 0.00074925
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploration

```
avg = 0.000670618962121
p = 0.000841742424242
Ant 4 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000670623128788
p = 0.000841750757576
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00100525878443
p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000572733516484
p = 0.000711538461538
Ant 8 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000573086080586
p = 0.000712243589744
Ant 9 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 10 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000670623170871

p = 0.000841750841742
Ant 11 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000670623170875
p = 0.000841750841751
Ant 12 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 3 : [3, 4, 5, 2, 1, 0], 82
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000573089606227

p = 0.000712250641026
Ant 13 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 14 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000573089641484
p = 0.000712250711538
Ant 15 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 16 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000573089641836
p = 0.000712250712244
```

Ant 17 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000670623170875

p = 0.000841750841751

Ant 18 : [4, 5, 3, 2, 1], 74

Exploitation

Ant 19 : [5, 4, 3, 2, 1], 67

Exploitation

Ant 4 : [5, 4, 3, 2, 1, 0], 77

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00185185185

Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [2, 3, 4, 5, 1, 0], 81

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000805152979058

Ant 7 : [0, 1, 3, 4, 5, 2], 78

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [2, 3, 4, 5, 1, 0], 81

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00185185185185

Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [4, 5, 3, 2, 1, 0], 84

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185

Ant 12 : [3, 4, 5, 2, 1, 0], 82

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 3, 4, 5, 1, 0], 81

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00185185185185

Ant 15 : [2, 3, 4, 5, 1, 0], 81
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [2, 3, 4, 5, 1, 0], 81
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [4, 5, 3, 2, 1, 0], 84
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00185185185185

Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 5, 108
Ant thread 19 terminating.iter_counter = 6

starting ant = 0
Explorationstarting ant = 1

avg = 0.000729400464654starting ant = 2

p = 0.0016666499985starting ant = 3

p = 0.000832479675starting ant = 4

Ant 0 : [0, 4], 20starting ant = 5

Explorationstarting ant = 6

avg = 0.000756716142024starting ant = 7

p = 0.00166666666667starting ant = 8

p = 0.000925916665833starting ant = 9

Ant 1 : [1, 3], 18starting ant = 10

Explorationstarting ant = 11

avg = 0.000748138162193starting ant = 12

p = 0.001111099999starting ant = 13

p = 0.0013888888889starting ant = 14

Ant 2 : [4, 5], 12starting ant = 15

Explorationstarting ant = 16

avg = 0.000712229885413starting ant = 17

p = 0.000925925925926starting ant = 18

p = 0.001111111111111starting ant = 19

Ant 3 : [3, 4], 15

Exploitation

Ant 4 : [5, 4], 12

Exploitation

Ant 0 : [0, 4, 5], 32

Exploration

avg = 0.000736674329858

p = 0.000925925925926

p = 0.001233333333333

Ant 5 : [3, 4], 15

Exploration

avg = 0.000605811867837

p = 0.000757575757576

p = 0.000925925925926

Ant 6 : [2, 3], 18

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.000626182238208

p = 0.000757575757576

p = 0.001027777777778

Ant 8 : [2, 3], 18

Exploration

avg = 0.000626385941912

p = 0.000757575757576

p = 0.0010287962963

Ant 9 : [2, 3], 18

Exploration

avg = 0.000752567217878

p = 0.000925925925926

p = 0.001234555555556

Ant 1 : [1, 3, 4], 33

Exploitation

Ant 10 : [3, 4], 15

Exploration

avg = 0.000778999273304

p = 0.001111099999

p = 0.00154319444444

Ant 11 : [4, 5], 12
Exploration
avg = 0.000736921243191
p = 0.000925925925926
p = 0.0012345679
Ant 12 : [3, 4], 15
Exploration
avg = 0.000626387978949
p = 0.000757575757576
p = 0.00102880648148
Ant 13 : [2, 3], 18
Exploitation
Ant 14 : [4, 5], 12
Exploration
avg = 0.000628443698512
p = 0.000641025641026
p = 0.000724637681159
p = 0.000757575757576
Ant 2 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [4, 5], 12
Exploitation
Ant 17 : [2, 3], 18
Exploration
avg = 0.000779002359721
p = 0.001111099999
p = 0.00154320987653
Ant 18 : [4, 5], 12
Exploitation
Ant 19 : [5, 4], 12
Exploration
avg = 0.000695977949905
p = 0.00154320987654
Ant 3 : [3, 4, 5], 27
Exploration
avg = 0.000587950480519
p = 0.001111099999
Ant 4 : [5, 4, 3], 27
Exploitation
Ant 0 : [0, 4, 5, 3], 54
Exploitation
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000689670072813
p = 0.00123456790122
Ant 6 : [2, 3, 4], 33
Exploration
avg = 0.0005546937657
p = 0.00102777768518
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [2, 3, 4], 33

Exploration
avg = 0.000689670072816
p = 0.00123456790123
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000836845599873
p = 0.00154320987654
Ant 1 : [1, 3, 4, 5], 45
Exploitation
Ant 10 : [3, 4, 5], 27
Exploitation
Ant 11 : [4, 5, 3], 34
Exploration
avg = 0.000695977949905
p = 0.00154320987654
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.000689670072816
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploration
avg = 0.000649487448512
p = 0.000724637681159
p = 0.000841750757576
Ant 14 : [4, 5, 3], 34
Exploration
avg = 0.00065099762047
p = 0.000674325
p = 0.000925925925926
Ant 2 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4], 33
Exploration
avg = 0.000649487469345
p = 0.000724637681159
p = 0.000841750840909
Ant 16 : [4, 5, 3], 34
Exploration
avg = 0.000689670072816
p = 0.00123456790123
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000585399678824
p = 0.000641025641026
p = 0.000724637681159
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000684948237754
p = 0.001027777777778
Ant 4 : [5, 4, 3, 2], 45

Exploration
avg = 0.000851560648148
p = 0.0010287962963
Ant 0 : [0, 4, 5, 3, 2], 72
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000787778292181
p = 0.00154320987654
Ant 6 : [2, 3, 4, 5], 45
Exploitation
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [2, 3, 4, 5], 45
Exploration
avg = 0.000787778292181
p = 0.00154320987654
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000597840320911
p = 0.000805144927536
Ant 1 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.000685291138988
p = 0.00102880648148
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 12 : [3, 4, 5, 2], 50
Exploitation
Ant 13 : [2, 3, 4, 5], 45
Exploitation
Ant 14 : [4, 5, 3, 2], 52
Exploration
avg = 0.000603560853788
p = 0.000757575757576
Ant 2 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.000685291173279
p = 0.00102880658435
Ant 16 : [4, 5, 3, 2], 52
Exploitation
Ant 17 : [2, 3, 4, 5], 45
Exploitation
Ant 18 : [4, 5, 3, 2], 52
Exploration
avg = 0.000685291173282
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000645227520455

p = 0.000840909090909
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 4 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 0 : [0, 4, 5, 3, 2, 1], 94
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 4, 5, 2, 1], 72

Exploitation
Ant 6 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00098189339981
p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 8 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000551389652015
p = 0.000712243589744
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00044954595
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [3, 4, 5, 2, 1], 72

Exploration
avg = 0.000728678706181
p = 0.000841750841751
Ant 11 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000728678706181
p = 0.000841750841751
Ant 12 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 13 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000728678706181
p = 0.000841750841751
Ant 14 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploitation

Ant thread 2 terminating.Ant 15 : [2, 3, 4, 5, 1], 71

Exploration
avg = 0.000728678706181
p = 0.000841750841751
Ant 16 : [4, 5, 3, 2, 1], 74
Exploration

```
avg = 0.000551393213265
p = 0.000712250712244
Ant 17 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000728678706181
p = 0.000841750841751
Ant 18 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000728678706181
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.00185
Ant 3 : [3, 4, 5, 2, 1, 0], 82
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.001851833333333

Ant 4 : [5, 4, 3, 2, 1, 0], 77
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185

Ant 6 : [2, 3, 4, 5, 1, 0], 81
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000805152979058

Ant 7 : [0, 1, 3, 4, 5, 2], 78
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [2, 3, 4, 5, 1, 0], 81

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [4, 5, 3, 2, 1, 0], 84
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185
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Ant 12 : [3, 4, 5, 2, 1, 0], 82
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [2, 3, 4, 5, 1, 0], 81
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00185185185185

Ant 15 : [2, 3, 4, 5, 1, 0], 81
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [2, 3, 4, 5, 1, 0], 81
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [4, 5, 3, 2, 1, 0], 84
ExploitationUpdate called by 18

Ant 19 : [5, 4, 3, 2, 1, 0], 77Ant thread 18 terminating.
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 6, 108
Ant thread 19 terminating.iter_counter = 7

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [0, 1], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000732896194472starting ant = 4

p = 0.001666666666667starting ant = 5

p = 0.000925916665833starting ant = 6

Ant 1 : [1, 3], 18starting ant = 7

Exploitationstarting ant = 8

Ant 0 : [0, 1, 3], 28starting ant = 9

Exploitationstarting ant = 10

Ant 2 : [4, 5], 12starting ant = 11

Exploitationstarting ant = 12

Ant 3 : [3, 4], 15starting ant = 13

Explorationstarting ant = 14

avg = 0.000772719244274starting ant = 15

p = 0.00138887499875starting ant = 16

Ant 4 : [5, 4], 12starting ant = 17

Explorationstarting ant = 18

avg = 0.000706192082057starting ant = 19

p = 0.000925925925926

p = 0.001233333333333

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [2, 3], 18

Exploration

avg = 0.000731322533127

p = 0.000925925925926

p = 0.001234555555556

Ant 1 : [1, 3, 4], 33

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.000629161996804

p = 0.000757575757576

p = 0.001027777777778

Ant 8 : [2, 3], 18

Exploitation

Ant 0 : [0, 1, 3, 4], 43

Exploitation

Ant 9 : [2, 3], 18

Exploration

avg = 0.00070643899539

p = 0.000925925925926

p = 0.0012345679

Ant 10 : [3, 4], 15

Exploration

avg = 0.000618680305654

p = 0.000641025641026

p = 0.000724637681159

p = 0.000757575757576

Ant 2 : [4, 5, 3], 34

Exploration

avg = 0.000753879679287
p = 0.001111099999
p = 0.00154166666667
Ant 11 : [4, 5], 12
Exploration
avg = 0.000706438995635
p = 0.000925925925926
p = 0.00123456790122
Ant 12 : [3, 4], 15
Exploitation
Ant 3 : [3, 4, 5], 27
Exploitation
Ant 13 : [2, 3], 18
Exploration
avg = 0.000754188290398
p = 0.001111099999
p = 0.00154320972222
Ant 14 : [4, 5], 12
Exploration
avg = 0.000629367757915
p = 0.000757575757576
p = 0.00102880658333
Ant 15 : [2, 3], 18
Exploration
avg = 0.000754188320954
p = 0.001111099999
p = 0.001543209875
Ant 16 : [4, 5], 12
Exploration
avg = 0.000556932932442
p = 0.001111099999
Ant 4 : [5, 4, 3], 27
Exploration
avg = 0.000629367758119
p = 0.000757575757576
p = 0.00102880658435
Ant 17 : [2, 3], 18
Exploitation
Ant 18 : [4, 5], 12
Exploration
avg = 0.000819944216743
p = 0.000840909090909
p = 0.00154166652777
Ant 19 : [5, 4], 12
Exploitation
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000651567263065
p = 0.00123456790123
Ant 6 : [2, 3, 4], 33
Exploration
avg = 0.000804601369104
p = 0.00154320987654
Ant 1 : [1, 3, 4, 5], 45

Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [2, 3, 4], 33
Exploration
avg = 0.000960864553656
p = 0.00154320987654
Ant 0 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000664960401828
p = 0.00154320987654
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000616762055954
p = 0.000925925925926
Ant 2 : [4, 5, 3, 2], 52
Exploitation
Ant 11 : [4, 5, 3], 34
Exploration
avg = 0.000664960401828
p = 0.00154320987654
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.000572381821681
p = 0.000641025641026
p = 0.000724637681159
Ant 3 : [3, 4, 5, 2], 50
Exploitation
Ant 13 : [2, 3, 4], 33
Exploration
avg = 0.000659649508553
p = 0.000804347826087
p = 0.000841742424242
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [4, 5, 3], 34
Exploitation
Ant 4 : [5, 4, 3, 2], 45
Exploitation
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 18 : [4, 5, 3], 34
Exploration
avg = 0.000587491238245
p = 0.00123333322221
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.00059895186999
p = 0.000641025641026
p = 0.000804347826087

Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000760440792181
p = 0.00154320987654
Ant 6 : [2, 3, 4, 5], 45
Exploration
avg = 0.000578313535197
p = 0.000805144927536
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000903568368874
p = 0.0010287962963
p = 0.00123456790123
Ant 7 : [0, 1, 3, 4], 43
Exploration
avg = 0.000760440792181
p = 0.00154320987654
Ant 8 : [2, 3, 4, 5], 45
Exploitation
Ant 0 : [0, 1, 3, 4, 5, 2], 78
Update called by 0Exploitation

Ant thread 0 terminating.Ant 9 : [2, 3, 4, 5], 45

Exploration
avg = 0.000599220254048
p = 0.000641025641026
p = 0.000805152978261
Ant 10 : [3, 4, 5, 2], 50
Exploitation
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000651052179411
p = 0.0010287962963
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 12 : [3, 4, 5, 2], 50
Exploitation
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 13 : [2, 3, 4, 5], 45
Exploration
avg = 0.000651055574472
p = 0.00102880648148
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.000651055608423
p = 0.00102880658333
Ant 16 : [4, 5, 3, 2], 52
Exploration
avg = 0.000697894168896
p = 0.000841742424242

Ant 4 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000760440792181
p = 0.00154320987654
Ant 17 : [2, 3, 4, 5], 45
Exploration
avg = 0.000651055608762
p = 0.00102880658435
Ant 18 : [4, 5, 3, 2], 52
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000496253891941
p = 0.000641025641026
Ant 6 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000960864553656

p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000531510302198
p = 0.000711538461538
Ant 8 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000729201205578
p = 0.000841750840909
Ant 10 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.001666666666667
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000729201205995

p = 0.000841750841742
Ant 11 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000729201205999
p = 0.000841750841751
Ant 12 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 3 : [3, 4, 5, 2, 1, 0], 82
Update called by 3Exploitation

Ant thread 3 terminating.Ant 13 : [2, 3, 4, 5, 1], 71

Exploitation
Ant 14 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000531866427198
p = 0.000712250711538
Ant 15 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 16 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.001851833333333
Ant 4 : [5, 4, 3, 2, 1, 0], 77
Update called by 4Exploitation

Ant thread 4 terminating.Ant 17 : [2, 3, 4, 5, 1], 71

Exploitation
Ant 18 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000729201205999
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 5 : [3, 4, 5, 2, 1, 0], 82
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185

Ant 6 : [2, 3, 4, 5, 1, 0], 81
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000805152979066

Ant 7 : [0, 1, 3, 4, 5, 2], 78
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185183

Ant 8 : [2, 3, 4, 5, 1, 0], 81
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 4, 5, 1, 0], 81
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00185185185185

Ant 10 : [3, 4, 5, 2, 1, 0], 82
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [4, 5, 3, 2, 1, 0], 84
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185

Ant 12 : [3, 4, 5, 2, 1, 0], 82
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 3, 4, 5, 1, 0], 81
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 5, 3, 2, 1, 0], 84

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 4, 5, 1, 0], 81

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 5, 3, 2, 1, 0], 84

ExploitationUpdate called by 16

Ant 17 : [2, 3, 4, 5, 1, 0], 81Ant thread 16 terminating.

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [4, 5, 3, 2, 1, 0], 84
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00185185185185

Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 7, 108

Ant thread 19 terminating.iter_counter = 8

starting ant = 0

Explorationstarting ant = 1

avg = 0.000669133956333starting ant = 2

p = 0.00166664984999starting ant = 3

p = 0.000749243085368starting ant = 4

Ant 0 : [0, 4], 20starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [1, 0], 10starting ant = 7

Exploitationstarting ant = 8

Ant 2 : [4, 5], 12starting ant = 9
Exploitationstarting ant = 10
Ant 3 : [3, 4], 15starting ant = 11
Exploitationstarting ant = 12
Ant 4 : [5, 4], 12starting ant = 13
Explorationstarting ant = 14
avg = 0.00080371693084starting ant = 15
p = 0.001111099999starting ant = 16
p = 0.0015416666667starting ant = 17
Ant 0 : [0, 4, 5], 32starting ant = 18
Exploitationstarting ant = 19

Ant 5 : [3, 4], 15
Exploration
avg = 0.000592851515666
p = 0.000757575757576
p = 0.000925925925926
Ant 6 : [2, 3], 18
Exploration
avg = 0.000463483985958
p = 0.00092415909752
Ant 1 : [1, 0, 4], 30
Exploration
avg = 0.000704466990788
p = 0.00166664984999
p = 0.000925908257642
Ant 7 : [0, 4], 20
Exploitation
Ant 8 : [2, 3], 18
Exploitation
Ant 2 : [4, 5, 3], 34
Exploitation
Ant 9 : [2, 3], 18
Exploration
avg = 0.000679002503481
p = 0.000925925925926
p = 0.00123455555556
Ant 10 : [3, 4], 15
Exploration
avg = 0.000637040750534
p = 0.00154319444444
Ant 3 : [3, 4, 5], 27
Exploration
avg = 0.000731855655783

p = 0.001111099999
p = 0.00154320972222
Ant 11 : [4, 5], 12
Exploitation
Ant 12 : [3, 4], 15
Exploration
avg = 0.000529017139173
p = 0.001111099999
Ant 4 : [5, 4, 3], 27
Exploitation
Ant 13 : [2, 3], 18
Exploration
avg = 0.000756302330981
p = 0.00123333322221
p = 0.001543209875
Ant 14 : [4, 5], 12
Exploration
avg = 0.000613427647147
p = 0.000757575757576
p = 0.00102880658333
Ant 15 : [2, 3], 18
Exploration
avg = 0.000756302331286
p = 0.00123333322221
p = 0.00154320987653
Ant 16 : [4, 5], 12
Exploration
avg = 0.000613427647351
p = 0.000757575757576
p = 0.00102880658435
Ant 17 : [2, 3], 18
Exploration
avg = 0.000735524137698
p = 0.000840909090909
Ant 0 : [0, 4, 5, 3], 54
Exploitation
Ant 18 : [4, 5], 12
Exploration
avg = 0.000813081240553
p = 0.000841742424242
p = 0.00154166652777
Ant 19 : [5, 4], 12
Exploitation
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000617274733981
p = 0.0012345679
Ant 6 : [2, 3, 4], 33
Exploitation
Ant 1 : [1, 0, 4, 5], 42
Exploitation
Ant 7 : [0, 4, 5], 32
Exploration
avg = 0.000617274734286

p = 0.00123456790122
Ant 8 : [2, 3, 4], 33
Exploitation
Ant 2 : [4, 5, 3, 2], 52
Exploration
avg = 0.00061727473429
p = 0.00123456790123
Ant 9 : [2, 3, 4], 33
Exploitation
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000560665750252
p = 0.000641025641026
p = 0.000724637681159
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000650862454982
p = 0.000804347826087
p = 0.000841742424242
Ant 11 : [4, 5, 3], 34
Exploitation
Ant 12 : [3, 4, 5], 27
Exploitation
Ant 4 : [5, 4, 3, 2], 45
Exploration
avg = 0.00061727473429
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploitation
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [4, 5, 3], 34
Exploitation
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 0 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000650864559357
p = 0.000804347826087
p = 0.000841750841742
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000587235798561
p = 0.000641025641026
p = 0.000804347826087
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000735837042181
p = 0.00154320987654
Ant 6 : [2, 3, 4, 5], 45

Exploration
avg = 0.000823447884643
p = 0.000841750841751
Ant 1 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000762640470104
p = 0.000805144927536
p = 0.000841750841751
Ant 7 : [0, 4, 5, 3], 54
Exploration
avg = 0.000735837042181
p = 0.00154320987654
Ant 8 : [2, 3, 4, 5], 45
Exploration
avg = 0.000656281085399
p = 0.000757575757576
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000735837042181
p = 0.00154320987654
Ant 9 : [2, 3, 4, 5], 45
Exploitation
Ant 10 : [3, 4, 5, 2], 50
Exploitation
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 11 : [4, 5, 3, 2], 52
Exploration
avg = 0.000587504156049
p = 0.000641025641026
p = 0.000805152898551
Ant 12 : [3, 4, 5, 2], 50
Exploration
avg = 0.000698364418732
p = 0.000841742424242
Ant 4 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000735837042181
p = 0.00154320987654
Ant 13 : [2, 3, 4, 5], 45
Exploitation
Ant 14 : [4, 5, 3, 2], 52
Exploration
avg = 0.000735837042181
p = 0.00154320987654
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.000620243600698
p = 0.00102880658435
Ant 16 : [4, 5, 3, 2], 52
Exploitation
Ant 17 : [2, 3, 4, 5], 45
Exploitation
Ant 0 : [0, 4, 5, 3, 2, 1], 94

Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000620243600701

p = 0.00102880658436

Ant 18 : [4, 5, 3, 2], 52

Exploitation

Ant 19 : [5, 4, 3, 2], 45

Exploration

avg = 0.000698368627066

p = 0.000841750840909

Ant 5 : [3, 4, 5, 2, 1], 72

Exploration

avg = 0.000478679784799

p = 0.000641025641026

Ant 6 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.00102880658436

Ant 1 : [1, 0, 4, 5, 3, 2], 82

Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 4, 5, 3, 2], 72

Exploration

avg = 0.000513936195055

p = 0.000711538461538

Ant 8 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 2 : [4, 5, 3, 2, 1, 0], 84

Update called by 2Exploitation

Ant thread 2 terminating.Ant 9 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000698368627482

p = 0.000841750841742

Ant 10 : [3, 4, 5, 2, 1], 72

Exploitation

Ant 3 : [3, 4, 5, 2, 1, 0], 82

Update called by 3Exploitation

Ant thread 3 terminating.Ant 11 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000698368627486

p = 0.000841750841751

Ant 12 : [3, 4, 5, 2, 1], 72

Exploration

avg = 0.00185185166667

Ant 4 : [5, 4, 3, 2, 1, 0], 77

Update called by 4Exploitation

Ant thread 4 terminating.Ant 13 : [2, 3, 4, 5, 1], 71

Exploration
avg = 0.000698368627486
p = 0.000841750841751
Ant 14 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000514292320055
p = 0.000712250711538
Ant 15 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 16 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 17 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000698368627486
p = 0.000841750841751
Ant 18 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 5 : [3, 4, 5, 2, 1, 0], 82
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [2, 3, 4, 5, 1, 0], 81

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000841750841751

Ant 7 : [0, 4, 5, 3, 2, 1], 94
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [2, 3, 4, 5, 1, 0], 81
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [4, 5, 3, 2, 1, 0], 84
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [3, 4, 5, 2, 1, 0], 82

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [2, 3, 4, 5, 1, 0], 81

ExplorationUpdate called by 13

avg = 0.00185185185185Ant thread 13 terminating.

Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 4, 5, 1, 0], 81

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [2, 3, 4, 5, 1, 0], 81

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [4, 5, 3, 2, 1, 0], 84
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00185185185185

Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 8, 108
Ant thread 19 terminating.iter_counter = 9

starting ant = 0
Explorationstarting ant = 1

avg = 0.000634023440198starting ant = 2

p = 0.00149998486499starting ant = 3

p = 0.000833333174319starting ant = 4

Ant 0 : [0, 4], 20starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [1, 0], 10starting ant = 7

Explorationstarting ant = 8

avg = 0.000680892117962starting ant = 9

p = 0.001111099999starting ant = 10

p = 0.00138888888889starting ant = 11

Ant 2 : [4, 5], 12starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [3, 4], 15starting ant = 14

Explorationstarting ant = 15

avg = 0.0007593629227starting ant = 16

p = 0.00138887499875starting ant = 17

Ant 4 : [5, 4], 12starting ant = 18

Exploitationstarting ant = 19

Ant 0 : [0, 4, 5], 32

Exploration

avg = 0.000654067438318

p = 0.000925925925926

p = 0.00123333333333

Ant 5 : [3, 4], 15

Exploration

avg = 0.000567236397769

p = 0.000757575757576

p = 0.000925925925926

Ant 6 : [2, 3], 18

Exploration

avg = 0.000440449790023

p = 0.00092499999841

Ant 1 : [1, 0, 4], 30

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.00058760676814

p = 0.000757575757576

p = 0.00102777777778

Ant 8 : [2, 3], 18

Exploration

avg = 0.000587810471843

p = 0.000757575757576

p = 0.0010287962963

Ant 9 : [2, 3], 18

Exploitation

Ant 10 : [3, 4], 15

Exploration

avg = 0.000711753229073

p = 0.001111099999

p = 0.00154319444444

Ant 11 : [4, 5], 12

Exploitation

Ant 2 : [4, 5, 3], 34

Exploitation
Ant 12 : [3, 4], 15
Exploration
avg = 0.00058781250888
p = 0.000757575757576
p = 0.00102880648148
Ant 13 : [2, 3], 18
Exploitation
Ant 3 : [3, 4, 5], 27
Exploration
avg = 0.000711756315185
p = 0.001111099999
p = 0.001543209875
Ant 14 : [4, 5], 12
Exploitation
Ant 15 : [2, 3], 18
Exploration
avg = 0.00071175631549
p = 0.001111099999
p = 0.00154320987653
Ant 16 : [4, 5], 12
Exploration
avg = 0.000587812529454
p = 0.000757575757576
p = 0.00102880658435
Ant 17 : [2, 3], 18
Exploitation
Ant 4 : [5, 4, 3], 27
Exploration
avg = 0.000736202960136
p = 0.00123333322221
p = 0.00154320987654
Ant 18 : [4, 5], 12
Exploration
avg = 0.00080658789517
p = 0.000840909090909
p = 0.00154166652777
Ant 19 : [5, 4], 12
Exploration
avg = 0.000735524137456
p = 0.000840909090909
Ant 0 : [0, 4, 5, 3], 54
Exploitation
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000586411458083
p = 0.0012345679
Ant 6 : [2, 3, 4], 33
Exploitation
Ant 1 : [1, 0, 4, 5], 42
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000586411458388

p = 0.00123456790122
Ant 8 : [2, 3, 4], 33
Exploration
avg = 0.000586411458391
p = 0.00123456790123
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000611920394617
p = 0.00154320987654
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000623026570354
p = 0.000641025641026
p = 0.000724637680435
p = 0.000841742424242
Ant 11 : [4, 5, 3], 34
Exploration
avg = 0.000558219240631
p = 0.000925925925926
Ant 2 : [4, 5, 3, 2], 52
Exploration
avg = 0.000611920394617
p = 0.00154320987654
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.000586411458391
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploitation
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000642956190099
p = 0.00080434782608
p = 0.000841750757576
Ant 14 : [4, 5, 3], 34
Exploration
avg = 0.000586411458391
p = 0.00123456790123
Ant 15 : [2, 3, 4], 33
Exploration
avg = 0.000642956210932
p = 0.00080434782608
p = 0.000841750840909
Ant 16 : [4, 5, 3], 34
Exploration
avg = 0.000586411458391
p = 0.00123456790123
Ant 17 : [2, 3, 4], 33
Exploration
avg = 0.000592169857915
p = 0.00102777777778
Ant 4 : [5, 4, 3, 2], 45
Exploitation
Ant 18 : [4, 5, 3], 34

Exploration
avg = 0.000534451231034
p = 0.00123333322221
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000760189610648
p = 0.0010287962963
Ant 0 : [0, 4, 5, 3, 2], 72
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [2, 3, 4, 5], 45
Exploitation
Ant 1 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000875240173027
p = 0.00102880648148
p = 0.00123456790123
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [2, 3, 4, 5], 45
Exploration
avg = 0.000713693667181
p = 0.00154320987654
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000576957034759
p = 0.000641025641026
p = 0.000805144927536
Ant 10 : [3, 4, 5, 2], 50
Exploitation
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000576959691764
p = 0.000641025641026
p = 0.000805152898551
Ant 12 : [3, 4, 5, 2], 50
Exploration
avg = 0.000713693667181
p = 0.00154320987654
Ant 13 : [2, 3, 4, 5], 45
Exploitation
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 14 : [4, 5, 3, 2], 52
Exploration
avg = 0.000713693667181
p = 0.00154320987654
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.00059251279344
p = 0.00102880658435

Ant 16 : [4, 5, 3, 2], 52
Exploitation
Ant 17 : [2, 3, 4, 5], 45
Exploration
avg = 0.000670615098071
p = 0.000841742424242
Ant 4 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 18 : [4, 5, 3, 2], 52
Exploration
avg = 0.000592512793443
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 0 : [0, 4, 5, 3, 2, 1], 94
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 4, 5, 2, 1], 72

Exploration
avg = 0.00046286308837
p = 0.000641025641026
Ant 6 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000924905226733

p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000498119498626
p = 0.000711538461538
Ant 8 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000670619306821
p = 0.000841750841742
Ant 10 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 11 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.00185
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [3, 4, 5, 2, 1], 72

Exploitation
Ant 13 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 3 : [3, 4, 5, 2, 1, 0], 82

Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000498475623626

p = 0.000712250711538

Ant 15 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000670619306825

p = 0.000841750841751

Ant 16 : [4, 5, 3, 2, 1], 74

Exploitation

Ant 17 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 4 : [5, 4, 3, 2, 1, 0], 77

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000670619306825

p = 0.000841750841751

Ant 18 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000670619306825

p = 0.000841750841751

Ant 19 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.00185185185

Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [2, 3, 4, 5, 1, 0], 81

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 4, 5, 2], 78

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [2, 3, 4, 5, 1, 0], 81

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00185185185185

Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [4, 5, 3, 2, 1, 0], 84
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [3, 4, 5, 2, 1, 0], 82

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 3, 4, 5, 1, 0], 81
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00185185185185

Ant 15 : [2, 3, 4, 5, 1, 0], 81
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [2, 3, 4, 5, 1, 0], 81

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [4, 5, 3, 2, 1, 0], 84

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 9, 108
Ant thread 19 terminating.iter_counter = 10

starting ant = 0
Explorationstarting ant = 1

avg = 0.000649988821857starting ant = 2

p = 0.00166349986378starting ant = 3

p = 0.000833324999986starting ant = 4

Ant 0 : [0, 4], 20starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [1, 0], 10starting ant = 7

Explorationstarting ant = 8

avg = 0.000662802683924starting ant = 9

p = 0.001111099999starting ant = 10

p = 0.0013888888889starting ant = 11

Ant 2 : [4, 5], 12starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [3, 4], 15starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [5, 4], 12starting ant = 16

Exploitationstarting ant = 17

Ant 0 : [0, 4, 5], 32starting ant = 18

Explorationstarting ant = 19

avg = 0.000631845879671

p = 0.000925925925926

p = 0.001233333333333

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [2, 3], 18

Exploration

avg = 0.000419529790545

p = 0.000924999916667

Ant 1 : [1, 0, 4], 30

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18

Exploitation

Ant 10 : [3, 4], 15

Exploitation

Ant 11 : [4, 5], 12

Exploration

avg = 0.000594867390474

p = 0.000641025641026

p = 0.000724637681152

p = 0.000757575757576

Ant 2 : [4, 5, 3], 34

Exploitation
Ant 12 : [3, 4], 15
Exploitation
Ant 13 : [2, 3], 18
Exploration
avg = 0.000589308563488
p = 0.00154320972222
Ant 3 : [3, 4, 5], 27
Exploration
avg = 0.000693666881146
p = 0.001111099999
p = 0.001543209875
Ant 14 : [4, 5], 12
Exploration
avg = 0.000564758923144
p = 0.000757575757576
p = 0.00102880658333
Ant 15 : [2, 3], 18
Exploration
avg = 0.000481281132683
p = 0.001111099999
Ant 4 : [5, 4, 3], 27
Exploitation
Ant 16 : [4, 5], 12
Exploitation
Ant 17 : [2, 3], 18
Exploration
avg = 0.000735524137696
p = 0.000840909090909
Ant 0 : [0, 4, 5, 3], 54
Exploration
avg = 0.000718113526097
p = 0.00123333322221
p = 0.00154320987654
Ant 18 : [4, 5], 12
Exploration
avg = 0.000801060551266
p = 0.000841742424242
p = 0.00154166652777
Ant 19 : [5, 4], 12
Exploitation
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [2, 3, 4], 33
Exploitation
Ant 1 : [1, 0, 4, 5], 42
Exploration
avg = 0.000426395011344
p = 0.000924166665917
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [2, 3, 4], 33
Exploration
avg = 0.000558634510083

p = 0.00123456790123
Ant 9 : [2, 3, 4], 33
Exploitation
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000615909057141
p = 0.000641025641026
p = 0.000724637681152
p = 0.000841742424242
Ant 11 : [4, 5, 3], 34
Exploitation
Ant 2 : [4, 5, 3, 2], 52
Exploration
avg = 0.000589308602068
p = 0.00154320987654
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.000558634510083
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploration
avg = 0.000540631268107
p = 0.000641025641026
p = 0.000724637681152
Ant 3 : [3, 4, 5, 2], 50
Exploitation
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 4 : [5, 4, 3, 2], 45
Exploitation
Ant 16 : [4, 5, 3], 34
Exploration
avg = 0.000558634510083
p = 0.00123456790123
Ant 17 : [2, 3, 4], 33
Exploration
avg = 0.000735610464398
p = 0.0010287962963
Ant 0 : [0, 4, 5, 3, 2], 72
Exploitation
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [2, 3, 4, 5], 45
Exploitation
Ant 1 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000863161968481
p = 0.00102880648148

p = 0.00123456790123
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [2, 3, 4, 5], 45
Exploration
avg = 0.000693764629681
p = 0.00154320987654
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000567467016902
p = 0.000641025641026
p = 0.000805144927536
Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.000567555032617
p = 0.00102880648148
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000567469673906
p = 0.000641025641026
p = 0.000805152898551
Ant 12 : [3, 4, 5, 2], 50
Exploitation
Ant 13 : [2, 3, 4, 5], 45
Exploration
avg = 0.000645224042809
p = 0.000840909090909
Ant 3 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000567555066568
p = 0.00102880658333
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.000645640709476
p = 0.000841742424242
Ant 4 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000567555066908
p = 0.00102880658435
Ant 16 : [4, 5, 3, 2], 52
Exploitation
Ant 17 : [2, 3, 4, 5], 45
Exploitation
Ant 0 : [0, 4, 5, 3, 2, 1], 94
Update called by 0Exploitation

Ant thread 0 terminating.Ant 18 : [4, 5, 3, 2], 52

Exploitation
Ant 19 : [5, 4, 3, 2], 45

Exploration
avg = 0.000645644917809
p = 0.000841750840909
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3, 4, 5], 55

Exploration
avg = 0.000483884471841
p = 0.000711538461538
Ant 8 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000645644918226
p = 0.000841750841742
Ant 10 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 11 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00064564491823

p = 0.000841750841751
Ant 12 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000484240561584
p = 0.000712250641026
Ant 13 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 3 : [3, 4, 5, 2, 1, 0], 82
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [4, 5, 3, 2, 1], 74

Exploitation
Ant 15 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00185185166667
Ant 4 : [5, 4, 3, 2, 1, 0], 77
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00064564491823

p = 0.000841750841751
Ant 16 : [4, 5, 3, 2, 1], 74
Exploitation

Ant 17 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 18 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.00185185185
Ant 5 : [3, 4, 5, 2, 1, 0], 82
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185183

Ant 6 : [2, 3, 4, 5, 1, 0], 81
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000805152978261

Ant 7 : [0, 1, 3, 4, 5, 2], 78
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [2, 3, 4, 5, 1, 0], 81
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [2, 3, 4, 5, 1, 0], 81
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00185185185185

Ant 10 : [3, 4, 5, 2, 1, 0], 82
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [4, 5, 3, 2, 1, 0], 84
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185

Ant 12 : [3, 4, 5, 2, 1, 0], 82
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 3, 4, 5, 1, 0], 81
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 4, 5, 1, 0], 81

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [2, 3, 4, 5, 1, 0], 81

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [4, 5, 3, 2, 1, 0], 84

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 10, 108

Ant thread 19 terminating.iter_counter = 11

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [0, 1], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.000407064052043starting ant = 6

p = 0.00092498416666starting ant = 7

Ant 0 : [0, 1, 3], 28starting ant = 8

Exploitationstarting ant = 9

Ant 2 : [4, 5], 12starting ant = 10

Exploitationstarting ant = 11

Ant 3 : [3, 4], 15starting ant = 12

Explorationstarting ant = 13

avg = 0.000377783080053starting ant = 14

p = 0.00083332499925starting ant = 15

Ant 1 : [1, 0, 4], 30starting ant = 16

Explorationstarting ant = 17

avg = 0.000748544302486starting ant = 18

p = 0.000757575757576starting ant = 19

p = 0.00138887499875

Ant 4 : [5, 4], 12

Exploration

avg = 0.00061184647689

p = 0.000925925925926

p = 0.001233333333333

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [2, 3], 18

Exploration

avg = 0.000690558057189

p = 0.00184998304832

p = 0.000924999916659

Ant 7 : [0, 4], 20

Exploitation

Ant 0 : [0, 1, 3, 4], 43

Exploitation

Ant 8 : [2, 3], 18

Exploitation

Ant 9 : [2, 3], 18

Exploitation

Ant 2 : [4, 5, 3], 34

Exploitation

Ant 10 : [3, 4], 15

Exploitation

Ant 11 : [4, 5], 12

Exploitation

Ant 3 : [3, 4, 5], 27

Exploration

avg = 0.000612093390223

p = 0.000925925925926

p = 0.0012345679

Ant 12 : [3, 4], 15

Exploration

avg = 0.000544010657277

p = 0.000757575757576

p = 0.00102880648148

Ant 13 : [2, 3], 18

Exploitation

Ant 14 : [4, 5], 12

Exploration

avg = 0.000544010677648

p = 0.000757575757576

p = 0.00102880658333

Ant 15 : [2, 3], 18
Exploitation
Ant 1 : [1, 0, 4, 5], 42
Exploration
avg = 0.000677386390817
p = 0.0011110999999
p = 0.00154320987653
Ant 16 : [4, 5], 12
Exploitation
Ant 17 : [2, 3], 18
Exploration
avg = 0.00067738639082
p = 0.0011110999999
p = 0.00154320987654
Ant 18 : [4, 5], 12
Exploitation
Ant 19 : [5, 4], 12
Exploration
avg = 0.000460930519389
p = 0.0011110999999
Ant 4 : [5, 4, 3], 27
Exploration
avg = 0.000568957988775
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [2, 3, 4], 33
Exploitation
Ant 7 : [0, 4, 5], 32
Exploitation
Ant 0 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000533635256606
p = 0.00123456790123
Ant 8 : [2, 3, 4], 33
Exploration
avg = 0.000533635256606
p = 0.00123456790123
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.00051079956022
p = 0.000925925925926
Ant 2 : [4, 5, 3, 2], 52
Exploitation
Ant 10 : [3, 4, 5], 27
Exploration
avg = 0.000609294961754
p = 0.000641025641026
p = 0.000724637681152
p = 0.000840909090909
Ant 11 : [4, 5, 3], 34
Exploration
avg = 0.000532090252035
p = 0.000641025641026

p = 0.000724637681152
Ant 3 : [3, 4, 5, 2], 50
Exploration
avg = 0.000568957988775
p = 0.00154320987654
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.000533635256606
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploration
avg = 0.000629430831321
p = 0.000641025641026
p = 0.000804347826087
p = 0.000841742424242
Ant 14 : [4, 5, 3], 34
Exploration
avg = 0.000533635256606
p = 0.00123456790123
Ant 15 : [2, 3, 4], 33
Exploration
avg = 0.000823049291831
p = 0.000841750757576
Ant 1 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000629432935488
p = 0.000641025641026
p = 0.000804347826087
p = 0.000841750840909
Ant 16 : [4, 5, 3], 34
Exploration
avg = 0.000533635256606
p = 0.00123456790123
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 4 : [5, 4, 3, 2], 45
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000675828495931
p = 0.00154320987654
Ant 6 : [2, 3, 4, 5], 45
Exploration
avg = 0.000762640470104
p = 0.000805144927536
p = 0.000841750841751
Ant 7 : [0, 4, 5, 3], 54
Exploration
avg = 0.000805144927536
Ant 0 : [0, 1, 3, 4, 5, 2], 78

ExplorationUpdate called by 0

avg = 0.000675828495931Ant thread 0 terminating.

p = 0.00154320987654
Ant 8 : [2, 3, 4, 5], 45
Exploration
avg = 0.000675828495931
p = 0.00154320987654
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000581080426407
p = 0.000757575757576
Ant 2 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000558928657835
p = 0.000641025641026
p = 0.000805152898551
Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.000545089683677
p = 0.0010287962963
Ant 11 : [4, 5, 3, 2], 52
Exploitation
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 12 : [3, 4, 5, 2], 50
Exploitation
Ant 13 : [2, 3, 4, 5], 45
Exploration
avg = 0.000545093078738
p = 0.00102880648148
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploration
avg = 0.00102880658333
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploitation

Ant thread 1 terminating.Ant 16 : [4, 5, 3, 2], 52

Exploration
avg = 0.000675828495931
p = 0.00154320987654
Ant 17 : [2, 3, 4, 5], 45
Exploration
avg = 0.000545093113032
p = 0.00102880658436
Ant 18 : [4, 5, 3, 2], 52
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 4 : [5, 4, 3, 2, 1], 67

Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 7 : [0, 4, 5, 3, 2], 72
Exploitation
Ant 8 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000471425511836
p = 0.000712243589744
Ant 9 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00185
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000623167968074

p = 0.000841750840909
Ant 10 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 11 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.001851833333333
Ant 3 : [3, 4, 5, 2, 1, 0], 82
ExplorationUpdate called by 3

avg = 0.000623167968495Ant thread 3 terminating.

p = 0.000841750841751
Ant 12 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 13 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 14 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 15 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000623167968495
p = 0.000841750841751
Ant 16 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000471429073086
p = 0.000712250712244
Ant 17 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000623167968495
p = 0.000841750841751
Ant 18 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 4 : [5, 4, 3, 2, 1, 0], 77

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185183

Ant 6 : [2, 3, 4, 5, 1, 0], 81

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000841750841751

Ant 7 : [0, 4, 5, 3, 2, 1], 94

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [2, 3, 4, 5, 1, 0], 81

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [2, 3, 4, 5, 1, 0], 81

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [3, 4, 5, 2, 1, 0], 82

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [4, 5, 3, 2, 1, 0], 84

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185

Ant 12 : [3, 4, 5, 2, 1, 0], 82

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [2, 3, 4, 5, 1, 0], 81

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 5, 3, 2, 1, 0], 84

ExplorationUpdate called by 14

avg = 0.00185185185185Ant thread 14 terminating.

Ant 15 : [2, 3, 4, 5, 1, 0], 81

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [2, 3, 4, 5, 1, 0], 81
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [4, 5, 3, 2, 1, 0], 84
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 11, 108
Ant thread 19 terminating.iter_counter = 12

starting ant = 0
Explorationstarting ant = 1

avg = 0.000621667266321starting ant = 2

p = 0.00166498474349starting ant = 3

p = 0.00083332499925starting ant = 4

Ant 0 : [0, 4], 20starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [1, 0], 10starting ant = 7

Explorationstarting ant = 8

avg = 0.000631869751718starting ant = 9

p = 0.001111099999starting ant = 10

p = 0.00138888888889starting ant = 11

Ant 2 : [4, 5], 12starting ant = 12

Explorationstarting ant = 13

avg = 0.000569402569941starting ant = 14

p = 0.000925925925926starting ant = 15

p = 0.00111111111111starting ant = 16

Ant 3 : [3, 4], 15starting ant = 17

Explorationstarting ant = 18

avg = 0.000743932153808starting ant = 19

p = 0.000757575757576

p = 0.00138887499875

Ant 4 : [5, 4], 12

Exploitation

Ant 0 : [0, 4, 5], 32

Exploitation

Ant 5 : [3, 4], 15

Exploration

avg = 0.00050476112522

p = 0.000757575757576

p = 0.000925925925926

Ant 6 : [2, 3], 18

Exploration

avg = 0.000383756626381

p = 0.000924999916659

Ant 1 : [1, 0, 4], 30

Exploitation

Ant 7 : [0, 1], 10

Exploitation

Ant 8 : [2, 3], 18

Exploration

avg = 0.000525335199294

p = 0.000757575757576

p = 0.0010287962963

Ant 9 : [2, 3], 18

Exploration

avg = 0.00059409145883

p = 0.000925925925926

p = 0.001234555555556

Ant 10 : [3, 4], 15

Exploration

avg = 0.000662730862829

p = 0.001111099999

p = 0.00154319444444

Ant 11 : [4, 5], 12

Exploration

avg = 0.000582696442572

p = 0.000641025641026

p = 0.000724637681152

p = 0.000757575757576

Ant 2 : [4, 5, 3], 34

Exploration

avg = 0.000594093903275

p = 0.000925925925926

p = 0.00123456777778

Ant 12 : [3, 4], 15

Exploitation

Ant 13 : [2, 3], 18

Exploration

avg = 0.000662733918385
p = 0.001111099999
p = 0.00154320972222
Ant 14 : [4, 5], 12
Exploitation
Ant 15 : [2, 3], 18
Exploration
avg = 0.00066273394894
p = 0.001111099999
p = 0.001543209875
Ant 16 : [4, 5], 12
Exploitation
Ant 3 : [3, 4, 5], 27
Exploitation
Ant 17 : [2, 3], 18
Exploration
avg = 0.000662733949249
p = 0.001111099999
p = 0.00154320987654
Ant 18 : [4, 5], 12
Exploration
avg = 0.000791157126278
p = 0.000840909090909
p = 0.00154166652777
Ant 19 : [5, 4], 12
Exploration
avg = 0.000442614967425
p = 0.001111099999
Ant 4 : [5, 4, 3], 27
Exploitation
Ant 0 : [0, 4, 5, 3], 54
Exploration
avg = 0.000550642436811
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [2, 3, 4], 33
Exploration
avg = 0.00100001830644
p = 0.00123333322221
p = 0.00154320987654
Ant 1 : [1, 0, 4, 5], 42
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.000511135928473
p = 0.00123456790122
Ant 8 : [2, 3, 4], 33
Exploitation
Ant 9 : [2, 3, 4], 33
Exploration
avg = 0.000550642436811
p = 0.00154320987654
Ant 10 : [3, 4, 5], 27

Exploitation
Ant 11 : [4, 5, 3], 34
Exploitation
Ant 2 : [4, 5, 3, 2], 52
Exploitation
Ant 12 : [3, 4, 5], 27
Exploration
avg = 0.000511135928476
p = 0.00123456790123
Ant 13 : [2, 3, 4], 33
Exploitation
Ant 14 : [4, 5, 3], 34
Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [4, 5, 3], 34
Exploration
avg = 0.000524403337571
p = 0.000641025641026
p = 0.000724637681152
Ant 3 : [3, 4, 5, 2], 50
Exploitation
Ant 17 : [2, 3, 4], 33
Exploitation
Ant 18 : [4, 5, 3], 34
Exploitation
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 4 : [5, 4, 3, 2], 45
Exploration
avg = 0.000693580124311
p = 0.0010287962963
Ant 0 : [0, 4, 5, 3, 2], 72
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000659685975556
p = 0.00154320987654
Ant 6 : [2, 3, 4, 5], 45
Exploitation
Ant 1 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000842508238708
p = 0.00102880648148
p = 0.00123456790123
Ant 7 : [0, 1, 3, 4], 43
Exploitation
Ant 8 : [2, 3, 4, 5], 45
Exploitation
Ant 9 : [2, 3, 4, 5], 45
Exploration
avg = 0.000551239086366
p = 0.000641025641026
p = 0.000805144927536

Ant 10 : [3, 4, 5, 2], 50
Exploration
avg = 0.000524877320247
p = 0.00102880648148
Ant 11 : [4, 5, 3, 2], 52
Exploration
avg = 0.000560851171645
p = 0.000757575757576
Ant 2 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 12 : [3, 4, 5, 2], 50
Exploration
avg = 0.000659685975556
p = 0.00154320987654
Ant 13 : [2, 3, 4, 5], 45
Exploration
avg = 0.000524877354198
p = 0.00102880658333
Ant 14 : [4, 5, 3, 2], 52
Exploitation
Ant 15 : [2, 3, 4, 5], 45
Exploitation
Ant 16 : [4, 5, 3, 2], 52
Exploration
avg = 0.000602517838312
p = 0.000840909090909
Ant 3 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 17 : [2, 3, 4, 5], 45
Exploration
avg = 0.000524877354541
p = 0.00102880658436
Ant 18 : [4, 5, 3, 2], 52
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 4 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000841750757576
Ant 0 : [0, 4, 5, 3, 2, 1], 94
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 4, 5, 2, 1], 72

Exploration
avg = 0.000424286165781
p = 0.000641025641026
Ant 6 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00088336084856

p = 0.00154320987654
Ant 7 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 8 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00045989514014
p = 0.000712243589744
Ant 9 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 10 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 11 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 2 : [4, 5, 3, 2, 1, 0], 84
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [3, 4, 5, 2, 1], 72

Exploration
avg = 0.000459898665781
p = 0.000712250641026
Ant 13 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000602938713733
p = 0.000841750841751
Ant 14 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000459898701037
p = 0.000712250711538
Ant 15 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000602938713733
p = 0.000841750841751
Ant 16 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.001851833333333
Ant 3 : [3, 4, 5, 2, 1, 0], 82
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00045989870139

p = 0.000712250712244
Ant 17 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000602938713733
p = 0.000841750841751
Ant 18 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.00185185166667
Ant 4 : [5, 4, 3, 2, 1, 0], 77
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00185185185

Ant 5 : [3, 4, 5, 2, 1, 0], 82
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [2, 3, 4, 5, 1, 0], 81

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000805152978261

Ant 7 : [0, 1, 3, 4, 5, 2], 78
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [2, 3, 4, 5, 1, 0], 81
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [2, 3, 4, 5, 1, 0], 81
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00185185185185

Ant 10 : [3, 4, 5, 2, 1, 0], 82
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [4, 5, 3, 2, 1, 0], 84
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00185185185185

Ant 12 : [3, 4, 5, 2, 1, 0], 82
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [2, 3, 4, 5, 1, 0], 81

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [4, 5, 3, 2, 1, 0], 84
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 4, 5, 1, 0], 81

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00185185185185

Ant 16 : [4, 5, 3, 2, 1, 0], 84
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [2, 3, 4, 5, 1, 0], 81

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [4, 5, 3, 2, 1, 0], 84

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00185185185185

Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 12, 108

Ant thread 19 terminating.

Results

Best path = [4, 5, 3, 2, 1, 0]

('E ',)
('F ',)
('D ',)
('C ',)
('B ',)
('A ',)

Best path cost = 104

>>>

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan

Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
pickled.py

>>>

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan

Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py

[[0, 10, 30, 31, 20, 28, 44], [10, 0, 22, 18, 40, 26, 37], [30, 22, 0, 18, 26,
23, 50], [31, 18, 18, 0, 15, 22, 42], [20, 40, 26, 15, 0, 12, 10], [28, 26, 23,
22, 12, 0, 16], [44, 37, 50, 42, 10, 16, 0]]

7

Average = 22

Tau0 = 0.012987012987

iter_counter = 1

starting ant = 0

Explorationstarting ant = 1

avg = 0.000630949494586starting ant = 2

p = 0.0012987012987starting ant = 3
p = 0.000721500721501starting ant = 4
Ant 0 : [1, 3], 18starting ant = 5
Explorationstarting ant = 6
avg = 0.000554250700355starting ant = 7
p = 0.0012987012987starting ant = 8
p = 0.000811688311688starting ant = 9
Ant 1 : [6, 5], 16starting ant = 10
Exploitationstarting ant = 11
Ant 2 : [6, 4], 10starting ant = 12
Explorationstarting ant = 13
avg = 0.000630949494586starting ant = 14
p = 0.0012987012987starting ant = 15
p = 0.000721500721501starting ant = 16
Ant 3 : [1, 3], 18starting ant = 17
Explorationstarting ant = 18
avg = 0.000604545263113starting ant = 19

p = 0.000721500721501
p = 0.000721500721501
p = 0.000865800865801
Ant 4 : [3, 4], 15
Exploitation
Ant 0 : [1, 3, 4], 33
Exploitation
Ant 5 : [4, 6], 10
Exploration
avg = 0.000630949494586
p = 0.0012987012987
p = 0.000721500721501
Ant 6 : [1, 3], 18
Exploitation
Ant 7 : [4, 6], 10
Exploitation
Ant 8 : [3, 4], 15
Exploitation
Ant 9 : [0, 1], 10
Exploration

avg = 0.00064010899697
p = 0.00108225108225
Ant 1 : [6, 5, 4], 28
Exploration
avg = 0.000668705549423
p = 0.00108225108225
p = 0.000811688311688
Ant 10 : [5, 6], 16
Exploration
avg = 0.000668705549423
p = 0.00108225108225
p = 0.000811688311688
Ant 11 : [5, 6], 16
Exploitation
Ant 2 : [6, 4, 5], 22
Exploration
avg = 0.000554250700355
p = 0.0012987012987
p = 0.000811688311688
Ant 12 : [6, 5], 16
Exploitation
Ant 13 : [4, 6], 10
Exploitation
Ant 14 : [4, 6], 10
Exploitation
Ant 15 : [4, 6], 10
Exploration
avg = 0.000786713286713
p = 0.000865800865801
p = 0.00108225108225
p = 0.0012987012987
Ant 16 : [4, 6], 10
Exploitation
Ant 3 : [1, 3, 4], 33
Exploration
avg = 0.000593144927037
p = 0.0012987012987
p = 0.000649350649351
Ant 17 : [0, 4], 20
Exploration
avg = 0.000593144927037
p = 0.0012987012987
p = 0.000649350649351
Ant 18 : [0, 4], 20
Exploration
avg = 0.000604545263113
p = 0.000721500721501
p = 0.000721500721501
p = 0.000865800865801
Ant 19 : [3, 4], 15
Exploration
avg = 0.000770895770896
p = 0.00108225108225
p = 0.0012987012987

Ant 4 : [3, 4, 6], 25
Exploration
avg = 0.000882450882451
p = 0.00108225108225
p = 0.0012987012987
Ant 0 : [1, 3, 4, 6], 43
Exploration
avg = 0.000405360580685
p = 0.000811688311688
Ant 5 : [4, 6, 5], 26
Exploration
avg = 0.000581154171435
p = 0.000721500721501
p = 0.000865800865801
p = 0.000590318772137
Ant 6 : [1, 3, 5], 40
Exploitation
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 8 : [3, 4, 6], 25
Exploitation
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000584831834832
p = 0.000649350649351
p = 0.000865800865801
Ant 1 : [6, 5, 4, 3], 43
Exploitation
Ant 10 : [5, 6, 4], 26
Exploitation
Ant 11 : [5, 6, 4], 26
Exploitation
Ant 2 : [6, 4, 5, 3], 44
Exploitation
Ant 12 : [6, 5, 4], 28
Exploration
avg = 0.000405360580685
p = 0.000811688311688
Ant 13 : [4, 6, 5], 26
Exploration
avg = 0.000405360580685
p = 0.000811688311688
Ant 14 : [4, 6, 5], 26
Exploitation
Ant 15 : [4, 6, 5], 26
Exploitation
Ant 16 : [4, 6, 5], 26
Exploration
avg = 0.000882450882451
p = 0.00108225108225
p = 0.0012987012987
Ant 3 : [1, 3, 4, 6], 43
Exploitation
Ant 17 : [0, 4, 6], 30

Exploitation
Ant 18 : [0, 4, 6], 30
Exploitation
Ant 19 : [3, 4, 6], 25
Exploration
avg = 0.000429397077124
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploration
avg = 0.000455529319166
p = 0.000811688311688
Ant 0 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000529573475649
p = 0.000564652738566
p = 0.000590318772137
Ant 5 : [4, 6, 5, 3], 48
Exploitation
Ant 6 : [1, 3, 5, 4], 52
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.000429397077124
p = 0.000811688311688
Ant 8 : [3, 4, 6, 5], 41
Exploration
avg = 0.000621708738592
p = 0.000721500721501
p = 0.000865800865801
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.000620645781936
p = 0.000721500721501
p = 0.000721500721501
Ant 1 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000584831834832
p = 0.000649350649351
p = 0.000865800865801
Ant 10 : [5, 6, 4, 3], 41
Exploration
avg = 0.000584831834832
p = 0.000649350649351
p = 0.000865800865801
Ant 11 : [5, 6, 4, 3], 41
Exploration
avg = 0.000620645781936
p = 0.000721500721501
p = 0.000721500721501
Ant 2 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000584831834832
p = 0.000649350649351
p = 0.000865800865801

Ant 12 : [6, 5, 4, 3], 43
Exploration
avg = 0.000529573475649
p = 0.000564652738566
p = 0.000590318772137
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000529573475649
p = 0.000564652738566
p = 0.000590318772137
Ant 14 : [4, 6, 5, 3], 48
Exploration
avg = 0.000529573475649
p = 0.000564652738566
p = 0.000590318772137
Ant 15 : [4, 6, 5, 3], 48
Exploration
avg = 0.000529573475649
p = 0.000564652738566
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3], 48
Exploitation
Ant 3 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000432910879339
p = 0.000811688311688
Ant 17 : [0, 4, 6, 5], 46
Exploration
avg = 0.000432910879339
p = 0.000811688311688
Ant 18 : [0, 4, 6, 5], 46
Exploration
avg = 0.000429397077124
p = 0.000811688311688
Ant 19 : [3, 4, 6, 5], 41
Exploration
avg = 0.000509325043487
p = 0.000564652738566
Ant 4 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.00051423731548
p = 0.000564652738566
Ant 0 : [1, 3, 4, 6, 5, 2], 82
Exploitation
Ant 5 : [4, 6, 5, 3, 1], 66
Exploitation
Ant 6 : [1, 3, 5, 4, 6], 62
Exploration
avg = 0.000620645781936
p = 0.000721500721501
p = 0.000721500721501
Ant 7 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 8 : [3, 4, 6, 5, 2], 64

Exploration
avg = 0.000960150960151
p = 0.00108225108225
p = 0.0012987012987
Ant 9 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000511609602519
p = 0.000590318772137
Ant 1 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 10 : [5, 6, 4, 3, 1], 59
Exploitation
Ant 11 : [5, 6, 4, 3, 1], 59
Exploration
avg = 0.000511609602519
p = 0.000590318772137
Ant 2 : [6, 4, 5, 3, 2, 1], 84
Exploitation
Ant 12 : [6, 5, 4, 3, 1], 61
Exploration
avg = 0.000620645781936
p = 0.000721500721501
p = 0.000721500721501
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000620645781936
p = 0.000721500721501
p = 0.000721500721501
Ant 14 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 15 : [4, 6, 5, 3, 1], 66
Exploitation
Ant 16 : [4, 6, 5, 3, 1], 66
Exploration
avg = 0.00051423731548
p = 0.000564652738566
Ant 3 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.000551490670068
p = 0.000564652738566
p = 0.000590318772137
Ant 17 : [0, 4, 6, 5, 3], 68
Exploration
avg = 0.000551490670068
p = 0.000564652738566
p = 0.000590318772137
Ant 18 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 19 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.0004329004329
Ant 0 : [1, 3, 4, 6, 5, 2, 0], 112

ExplorationUpdate called by 0

avg = 0.000944510035419Ant thread 0 terminating.

p = 0.0012987012987

Ant 5 : [4, 6, 5, 3, 1, 0], 76

Exploration

avg = 0.000277449822904

p = 0.000295159386068

Ant 6 : [1, 3, 5, 4, 6, 0], 106

Exploitation

Ant 7 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000511609602519

p = 0.000590318772137

Ant 8 : [3, 4, 6, 5, 2, 1], 86

Exploitation

Ant 9 : [0, 1, 3, 4, 6, 5], 69

Exploration

avg = 0.0012987012987

Ant 1 : [6, 5, 4, 3, 2, 1, 0], 93

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000944510035419

p = 0.0012987012987

Ant 10 : [5, 6, 4, 3, 1, 0], 69

Exploration

avg = 0.000944510035419

p = 0.0012987012987

Ant 11 : [5, 6, 4, 3, 1, 0], 69

Exploration

avg = 0.0012987012987

Ant 2 : [6, 4, 5, 3, 2, 1, 0], 94

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000944510035419

p = 0.0012987012987

Ant 12 : [6, 5, 4, 3, 1, 0], 71

Exploration

avg = 0.000511609602519

p = 0.000590318772137

Ant 13 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000511609602519

p = 0.000590318772137

Ant 14 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000944510035419

p = 0.0012987012987

Ant 15 : [4, 6, 5, 3, 1, 0], 76

Exploration

avg = 0.000944510035419

p = 0.0012987012987
Ant 16 : [4, 6, 5, 3, 1, 0], 76
Exploitation
Ant 3 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000721500721501

Ant 17 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 18 : [0, 4, 6, 5, 3, 1], 86
Exploration
avg = 0.000511609602519
p = 0.000590318772137
Ant 19 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.0012987012987
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.0004329004329

Ant 5 : [4, 6, 5, 3, 1, 0, 2], 106
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.0004329004329

Ant 6 : [1, 3, 5, 4, 6, 0, 2], 136
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [5, 6, 4, 3, 1, 0, 2], 99
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 3, 1, 0, 2], 99
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.0004329004329

Ant 12 : [6, 5, 4, 3, 1, 0, 2], 101
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 1, 0, 2], 106

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 6, 5, 3, 1, 0, 2], 106

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [0, 4, 6, 5, 3, 2, 1], 108

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000590318772137

Ant 18 : [0, 4, 6, 5, 3, 1, 2], 108

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 19

Best: [4, 6, 5, 3, 2, 1, 0], 118, 1, 129

Ant thread 19 terminating.iter_counter = 2

starting ant = 0

Explorationstarting ant = 1

avg = 0.000567854545127starting ant = 2

p = 0.00116883116883starting ant = 3

p = 0.000649350649351starting ant = 4

Ant 0 : [1, 3], 18starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [6, 4], 10starting ant = 7

Explorationstarting ant = 8

avg = 0.000520254201748starting ant = 9

p = 0.0012974025974starting ant = 10

p = 0.000730519480519starting ant = 11

Ant 2 : [6, 5], 16starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [3, 4], 15starting ant = 16

Exploitationstarting ant = 17

Ant 0 : [1, 3, 4], 33starting ant = 18

Explorationstarting ant = 19

avg = 0.000708041958042

p = 0.000779220779221

p = 0.000974025974026

p = 0.00116883116883

Ant 5 : [4, 6], 10

Exploration

avg = 0.000601187878461

p = 0.0012974025974

p = 0.000720779220779

Ant 6 : [1, 3], 18

Exploitation

Ant 1 : [6, 4, 5], 22

Exploitation

Ant 7 : [4, 6], 10

Exploitation

Ant 8 : [3, 4], 15

Exploitation

Ant 9 : [0, 1], 10

Exploitation

Ant 10 : [5, 4], 12

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000597740954415

p = 0.00108224025974

Ant 2 : [6, 5, 4], 28

Exploration

avg = 0.000533647058891

p = 0.0012974025974

p = 0.000810876623377

Ant 12 : [6, 5], 16

Exploitation

Ant 13 : [4, 6], 10

Exploration

avg = 0.000406830287434

p = 0.000584415584416
p = 0.000417439703154
Ant 3 : [1, 0, 5], 38
Exploration
avg = 0.000747544100899
p = 0.000779220779221
p = 0.00108116883117
p = 0.00129870116883
Ant 14 : [4, 6], 10
Exploration
avg = 0.000747544122328
p = 0.000779220779221
p = 0.00108116883117
p = 0.0012987012974
Ant 15 : [4, 6], 10
Exploitation
Ant 4 : [3, 4, 6], 25
Exploitation
Ant 16 : [4, 6], 10
Exploitation
Ant 17 : [0, 1], 10
Exploitation
Ant 0 : [1, 3, 4, 6], 43
Exploitation
Ant 18 : [0, 1], 10
Exploration
avg = 0.000558520736801
p = 0.000649350649351
p = 0.000649350649351
p = 0.000865800779221
Ant 19 : [3, 4], 15
Exploration
avg = 0.000381056665474
p = 0.000811680194805
Ant 5 : [4, 6, 5], 26
Exploration
avg = 0.000540354771434
p = 0.000649350649351
p = 0.000865800864935
Ant 6 : [1, 3, 4], 33
Exploration
avg = 0.000476616128084
p = 0.000508187464709
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3], 44
Exploration
avg = 0.000381058272617
p = 0.000811688230519
Ant 7 : [4, 6, 5], 26
Exploration
avg = 0.000741208791209
p = 0.00108116883117
p = 0.0012987012987
Ant 8 : [3, 4, 6], 25

Exploration
avg = 0.000462087791815
p = 0.000531286894923
p = 0.000721493506494
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000680819180819
p = 0.000779220779221
p = 0.0012987012987
Ant 10 : [5, 4, 6], 22
Exploration
avg = 0.000680819180819
p = 0.000779220779221
p = 0.0012987012987
Ant 11 : [5, 4, 6], 22
Exploitation
Ant 2 : [6, 5, 4, 3], 43
Exploration
avg = 0.000609431408961
p = 0.00108225097403
Ant 12 : [6, 5, 4], 28
Exploration
avg = 0.000381058288688
p = 0.000811688310877
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 3 : [1, 0, 5, 4], 50
Exploration
avg = 0.000381058288849
p = 0.00081168831168
Ant 14 : [4, 6, 5], 26
Exploitation
Ant 15 : [4, 6, 5], 26
Exploration
avg = 0.000406749577204
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploitation
Ant 16 : [4, 6, 5], 26
Exploration
avg = 0.000462089220386
p = 0.000531286894923
p = 0.000721500649351
Ant 17 : [0, 1, 3], 28
Exploration
avg = 0.000437032664305
p = 0.000811688311688
Ant 0 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000462089234672
p = 0.000531286894923
p = 0.000721500720779
Ant 18 : [0, 1, 3], 28
Exploration

avg = 0.000741208791209
p = 0.00108116883117
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploitation
Ant 5 : [4, 6, 5, 3], 48
Exploitation
Ant 6 : [1, 3, 4, 6], 43
Exploitation
Ant 1 : [6, 4, 5, 3, 1], 62
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.000406749577204
p = 0.000811688311688
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.000273400783141
p = 0.0003159003159
p = 0.000278293135436
Ant 10 : [5, 4, 6, 3], 64
Exploitation
Ant 11 : [5, 4, 6, 1], 59
Exploration
avg = 0.000582390727552
p = 0.000720779220779
p = 0.000649350649351
Ant 2 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000547777222777
p = 0.000584415584416
p = 0.000864935064935
Ant 12 : [6, 5, 4, 3], 43
Exploitation
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000871347985348
p = 0.0012987012987
Ant 3 : [1, 0, 5, 4, 6], 60
Exploitation
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 15 : [4, 6, 5, 3], 48
Exploration
avg = 0.000458392539138
p = 0.000508187464709
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 16 : [4, 6, 5, 3], 48
Exploitation
Ant 17 : [0, 1, 3, 4], 43
Exploitation

Ant 0 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.000599040029235
p = 0.000720779220779
p = 0.000865800865801
Ant 18 : [0, 1, 3, 4], 43
Exploration
avg = 0.000415436835891
p = 0.000811688311688
Ant 19 : [3, 4, 6, 5], 41
Exploitation
Ant 5 : [4, 6, 5, 3, 1], 66
Exploration
avg = 0.000437032664305
p = 0.000811688311688
Ant 6 : [1, 3, 4, 6, 5], 59
Exploitation
Ant 1 : [6, 4, 5, 3, 1, 0], 72
Exploration
avg = 0.0006064383466
p = 0.000721493506494
p = 0.000720779220779
Ant 7 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000477212414914
p = 0.000564647092038
Ant 8 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.00094314019314
p = 0.00108116883117
p = 0.0012987012987
Ant 9 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000606676441838
p = 0.000721493506494
p = 0.000721493506494
Ant 10 : [5, 4, 6, 3, 2], 82
Exploration
avg = 0.000850491976035
p = 0.00129868831169
Ant 11 : [5, 4, 6, 1, 0], 69
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.00060667882279
p = 0.000721493506494
p = 0.000721500649351
Ant 12 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.00027133580705
p = 0.000308905380334
Ant 3 : [1, 0, 5, 4, 6, 3], 102

Exploitation
Ant 14 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 15 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000489669421488
p = 0.000589728453365
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 16 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.00094314019314
p = 0.00108116883117
p = 0.0012987012987
Ant 17 : [0, 1, 3, 4, 6], 53
Exploitation
Ant 0 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00094314019314

p = 0.00108116883117
p = 0.0012987012987
Ant 18 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000477214278268
p = 0.000564652682101
Ant 19 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000914994031877
p = 0.00129870116883
Ant 5 : [4, 6, 5, 3, 1, 0], 76
Exploration
avg = 0.000491046220578
p = 0.000564652738001
Ant 6 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.00038961038961
Ant 1 : [6, 4, 5, 3, 1, 0, 2], 102
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000511390200708

p = 0.000590312868949
Ant 7 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000511393122786
p = 0.000590318713105
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 9 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.000511393152007
p = 0.000590318771547

Ant 10 : [5, 4, 6, 3, 2, 1], 104
Exploitation
Ant 11 : [5, 4, 6, 1, 0, 2], 99
Exploration
avg = 0.0012987012974
Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [6, 5, 4, 3, 2, 1], 83

Exploitation
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000721500721501
Ant 3 : [1, 0, 5, 4, 6, 3, 2], 120
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [4, 6, 5, 3, 2, 1], 88

Exploration
avg = 0.000511393152302
p = 0.000590318772137
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.00129870129869
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000511393152302

p = 0.000590318772137
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 17 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 18 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 19 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 5 : [4, 6, 5, 3, 1, 0, 2], 106
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000432467532468

Ant 6 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 9Exploration
Ant thread 9 terminating.avg = 0.0012987012987
Ant 10 : [5, 4, 6, 3, 2, 1, 0], 114
Update called by 10Exploration
Ant thread 10 terminating.avg = 0.000649350649351
Ant 11 : [5, 4, 6, 1, 0, 2, 3], 117
Update called by 11Exploitation
Ant thread 11 terminating.Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 12Exploitation
Ant thread 12 terminating.Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 13Exploitation
Ant thread 13 terminating.Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 14Exploitation
Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 15Exploitation
Ant thread 15 terminating.Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 17Exploitation
Ant thread 17 terminating.Ant 18 : [0, 1, 3, 4, 6, 5, 2], 92
ExploitationUpdate called by 18
Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96Ant thread 18 terminating.
Update called by 19
Best: [4, 6, 5, 3, 2, 1, 0], 118, 2, 128
Ant thread 19 terminating.iter_counter = 3
starting ant = 0
Exploitationstarting ant = 1
Ant 0 : [1, 0], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [6, 4], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [1, 0, 4], 30starting ant = 6

Exploitationstarting ant = 7

Ant 2 : [6, 4], 10starting ant = 8

Explorationstarting ant = 9

avg = 0.000562800692345starting ant = 10

p = 0.0012974025974starting ant = 11

p = 0.000649350649344starting ant = 12

Ant 3 : [1, 3], 18starting ant = 13

Explorationstarting ant = 14

avg = 0.000589164275724starting ant = 15

p = 0.000779212987013starting ant = 16

p = 0.000973051948052starting ant = 17

Ant 1 : [6, 4, 5], 22starting ant = 18

Exploitationstarting ant = 19

Ant 4 : [3, 4], 15

Exploitation

Ant 5 : [4, 6], 10

Exploration

avg = 0.00089059251998

p = 0.00108115909091

p = 0.0012974025974

Ant 0 : [1, 0, 4, 6], 40

Exploitation

Ant 6 : [1, 0], 10

Exploration

avg = 0.000725436138861

p = 0.000779212987013

p = 0.00108115909091

p = 0.00129868831169

Ant 7 : [4, 6], 10

Exploration

avg = 0.000610785704296

p = 0.000779212987013

p = 0.00108115909091

Ant 2 : [6, 4, 5], 22
Exploration
avg = 0.000538598329788
p = 0.000649344155844
p = 0.000649350649351
p = 0.000864935064935
Ant 8 : [3, 4], 15
Exploration
avg = 0.000533666288859
p = 0.00116883105195
p = 0.000648116883117
Ant 9 : [0, 4], 20
Exploitation
Ant 10 : [5, 4], 12
Exploration
avg = 0.000593066976784
p = 0.00108116883117
p = 0.000657467532468
Ant 11 : [5, 6], 16
Exploitation
Ant 12 : [6, 4], 10
Exploration
avg = 0.000516620593148
p = 0.000649350649351
p = 0.000865792207792
Ant 3 : [1, 3, 4], 33
Exploration
avg = 0.00072561846029
p = 0.000779212987013
p = 0.00108224016234
p = 0.00129870116883
Ant 13 : [4, 6], 10
Exploration
avg = 0.000725618481718
p = 0.000779212987013
p = 0.00108224016234
p = 0.0012987012974
Ant 14 : [4, 6], 10
Exploitation
Ant 15 : [4, 6], 10
Exploitation
Ant 16 : [4, 6], 10
Exploration
avg = 0.000533869860288
p = 0.00116883105195
p = 0.000649338311688
Ant 17 : [0, 4], 20
Exploitation
Ant 1 : [6, 4, 5, 3], 44
Exploitation
Ant 18 : [0, 1], 10
Exploitation
Ant 19 : [3, 4], 15
Exploitation

Ant 4 : [3, 4, 6], 25
Exploration
avg = 0.000354772592343
p = 0.000730519480519
Ant 5 : [4, 6, 5], 26
Exploration
avg = 0.000433185528757
p = 0.000810876623377
Ant 0 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000406880064813
p = 0.000649350525974
p = 0.000417022263451
Ant 6 : [1, 0, 5], 38
Exploration
avg = 0.0003710047352
p = 0.000811680194805
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 2 : [6, 4, 5, 3], 44
Exploitation
Ant 8 : [3, 4, 6], 25
Exploitation
Ant 9 : [0, 4, 6], 30
Exploration
avg = 0.000654294145854
p = 0.000779212987013
p = 0.0012987012987
Ant 10 : [5, 4, 6], 22
Exploration
avg = 0.000468408929771
p = 0.00129870116766
Ant 11 : [5, 6, 4], 26
Exploration
avg = 0.000611001918581
p = 0.000779212987013
p = 0.00108224016234
Ant 12 : [6, 4, 5], 22
Exploration
avg = 0.000827880425581
p = 0.00108225097305
p = 0.0012987012987
Ant 3 : [1, 3, 4, 6], 43
Exploration
avg = 0.000371006342343
p = 0.000811688230519
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 14 : [4, 6, 5], 26
Exploitation
Ant 15 : [4, 6, 5], 26
Exploitation
Ant 16 : [4, 6, 5], 26
Exploitation

Ant 17 : [0, 4, 6], 30
Exploitation
Ant 1 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000430166025621
p = 0.000478158205431
p = 0.000720779220779
Ant 18 : [0, 1, 3], 28
Exploration
avg = 0.000714901743062
p = 0.00108225097305
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploration
avg = 0.000394185360094
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploitation
Ant 5 : [4, 6, 5, 3], 48
Exploration
avg = 0.000549253088907
p = 0.000590318713105
Ant 0 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 6 : [1, 0, 5, 4], 50
Exploration
avg = 0.000469699343422
p = 0.000508187464709
p = 0.000590318771547
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.000569820485966
p = 0.000649344155844
p = 0.000720779220779
Ant 2 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000394185360094
p = 0.000811688311688
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 9 : [0, 4, 6, 5], 46
Exploitation
Ant 10 : [5, 4, 6, 1], 59
Exploration
avg = 0.000493192357642
p = 0.000525974025974
p = 0.000779212987013
Ant 11 : [5, 6, 4, 3], 41
Exploitation
Ant 12 : [6, 4, 5, 3], 44
Exploitation
Ant 3 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.00046969934357

p = 0.000508187464709
p = 0.000590318772137
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.00046969934357
p = 0.000508187464709
p = 0.000590318772137
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 15 : [4, 6, 5, 3], 48
Exploitation
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000412753616557
p = 0.000811688311688
Ant 17 : [0, 4, 6, 5], 46
Exploration
avg = 0.000460446694215
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3, 2, 1], 84
Exploration
avg = 0.000578979099688
p = 0.000721493506494
p = 0.000865800864935
Ant 18 : [0, 1, 3, 4], 43
Exploitation
Ant 19 : [3, 4, 6, 5], 41
Exploitation
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 5 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000721500649351
Ant 0 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000856077230103

p = 0.000864934987013
p = 0.0012987012987
Ant 6 : [1, 0, 5, 4, 6], 60
Exploration
avg = 0.000570060985966
p = 0.000649344155844
p = 0.000721500720779
Ant 7 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000489667473436
p = 0.000589728453365
Ant 2 : [6, 4, 5, 3, 2, 1], 84
Exploration
avg = 0.000448126407754
p = 0.000564088085827
Ant 8 : [3, 4, 6, 5, 2], 64

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Exploration
avg = 0.000519853756257
p = 0.000564647092038
p = 0.000590318772137
Ant 9 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 10 : [5, 4, 6, 1, 0], 69
Exploration
avg = 0.000570060986204
p = 0.000649344155844
p = 0.000721500721494
Ant 11 : [5, 6, 4, 3, 2], 59
Exploitation
Ant 12 : [6, 4, 5, 3, 2], 62
Exploitation
Ant 3 : [1, 3, 4, 6, 5, 2], 82
Exploitation
Ant 13 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 14 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 15 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000570060986206
p = 0.000649344155844
p = 0.000721500721501
Ant 16 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 17 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 1 : [6, 4, 5, 3, 2, 1, 0], 94
Update called by 1Exploitation

Ant thread 1 terminating.Ant 18 : [0, 1, 3, 4, 6], 53

Exploitation
Ant 19 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000489962603306
p = 0.000590318713105
Ant 5 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000244339981447
p = 0.000278290352505
Ant 6 : [1, 0, 5, 4, 6, 3], 102
Exploration
avg = 0.000489962632527
p = 0.000590318771547
Ant 7 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.0012987012974
Ant 2 : [6, 4, 5, 3, 2, 1, 0], 94
```

Update called by 2Exploitation

Ant thread 2 terminating.Ant 8 : [3, 4, 6, 5, 2, 1], 86

Exploration

avg = 0.000685422438672

p = 0.000721500721501

Ant 9 : [0, 4, 6, 5, 3, 2], 86

Exploration

avg = 0.000364474215961

p = 0.000389610350649

Ant 10 : [5, 4, 6, 1, 0, 2], 99

Exploitation

Ant 11 : [5, 6, 4, 3, 2, 1], 81

Exploration

avg = 0.000489962632822

p = 0.000590318772137

Ant 12 : [6, 4, 5, 3, 2, 1], 84

Exploitation

Ant 3 : [1, 3, 4, 6, 5, 2, 0], 112

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000511393132822

p = 0.000590318772137

Ant 13 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000511393132822

p = 0.000590318772137

Ant 14 : [4, 6, 5, 3, 2, 1], 88

Exploitation

Ant 15 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000511393132822

p = 0.000590318772137

Ant 16 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000685422438672

p = 0.000721500721501

Ant 17 : [0, 4, 6, 5, 3, 2], 86

Exploitation

Ant 18 : [0, 1, 3, 4, 6, 5], 69

Exploitation

Ant 19 : [3, 4, 6, 5, 2, 1], 86

Exploitation

Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000721500721501

Ant 6 : [1, 0, 5, 4, 6, 3, 2], 120
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 4, 6, 5, 3, 2, 1], 108

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000648701298701

Ant 10 : [5, 4, 6, 1, 0, 2, 3], 117
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [6, 4, 5, 3, 2, 1, 0], 94

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0012987012987

Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000590318772137

Ant 17 : [0, 4, 6, 5, 3, 2, 1], 108
ExplorationUpdate called by 17

avg = 0.000564652738001Ant thread 17 terminating.

Ant 18 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 19

Best: [4, 6, 5, 3, 2, 1, 0], 118, 3, 125

Ant thread 19 terminating.iter_counter = 4

starting ant = 0

Explorationstarting ant = 1

avg = 0.000517536856878starting ant = 2

p = 0.00116883116883starting ant = 3

p = 0.000649344155844starting ant = 4

Ant 0 : [1, 3], 18starting ant = 5

Explorationstarting ant = 6

avg = 0.00048291147995starting ant = 7

p = 0.00116883116765starting ant = 8

p = 0.000730519480519starting ant = 9

Ant 1 : [6, 5], 16starting ant = 10

Explorationstarting ant = 11

avg = 0.000496304337093starting ant = 12

p = 0.00116883116765starting ant = 13

p = 0.000810876623377starting ant = 14

Ant 2 : [6, 5], 16starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [1, 0], 10starting ant = 17

Exploitationstarting ant = 18

Ant 4 : [3, 4], 15starting ant = 19

Exploitation

Ant 0 : [1, 3, 4], 33

Exploitation

Ant 5 : [4, 6], 10

Exploration

avg = 0.00055087126164

p = 0.0012974025974

p = 0.000720779155844
Ant 6 : [1, 3], 18
Exploration
avg = 0.000687345126777
p = 0.000778441488312
p = 0.000974025875747
p = 0.0012974025974
Ant 7 : [4, 6], 10
Exploitation
Ant 8 : [3, 4], 15
Exploitation
Ant 9 : [0, 1], 10
Exploitation
Ant 1 : [6, 5, 4], 28
Exploration
avg = 0.000592006101765
p = 0.00108116873377
p = 0.000729131493506
Ant 10 : [5, 6], 16
Exploitation
Ant 11 : [5, 4], 12
Exploitation
Ant 12 : [6, 4], 10
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.000687561555348
p = 0.000778441488312
p = 0.000974025875747
p = 0.00129870116883
Ant 14 : [4, 6], 10
Exploitation
Ant 2 : [6, 5, 4], 28
Exploitation
Ant 15 : [4, 6], 10
Exploration
avg = 0.000687561576991
p = 0.000778441488312
p = 0.000974025875747
p = 0.00129870129869
Ant 16 : [4, 6], 10
Exploitation
Ant 3 : [1, 0, 4], 30
Exploitation
Ant 17 : [0, 1], 10
Exploitation
Ant 18 : [0, 1], 10
Exploration
avg = 0.00066938559473
p = 0.000974025875747
p = 0.0012987012987
Ant 4 : [3, 4, 6], 25
Exploitation
Ant 19 : [3, 4], 15

Exploitation
Ant 0 : [1, 3, 4, 6], 43
Exploration
avg = 0.000361959685267
p = 0.000811680194805
Ant 5 : [4, 6, 5], 26
Exploitation
Ant 6 : [1, 3, 4], 33
Exploitation
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 8 : [3, 4, 6], 25
Exploitation
Ant 9 : [0, 1, 3], 28
Exploitation
Ant 1 : [6, 5, 4, 3], 43
Exploitation
Ant 10 : [5, 6, 4], 26
Exploration
avg = 0.000647565873986
p = 0.000864927272026
p = 0.0012987012987
Ant 11 : [5, 4, 6], 22
Exploration
avg = 0.000582630789395
p = 0.000864927272026
p = 0.000974025875747
Ant 12 : [6, 4, 5], 22
Exploitation
Ant 13 : [4, 6, 5], 26
Exploration
avg = 0.000361961308642
p = 0.00081168831168
Ant 14 : [4, 6, 5], 26
Exploitation
Ant 2 : [6, 5, 4, 3], 43
Exploitation
Ant 15 : [4, 6, 5], 26
Exploitation
Ant 16 : [4, 6, 5], 26
Exploitation
Ant 3 : [1, 0, 4, 6], 40
Exploration
avg = 0.000401709293187
p = 0.000430342384888
p = 0.000721500649344
Ant 17 : [0, 1, 3], 28
Exploitation
Ant 18 : [0, 1, 3], 28
Exploration
avg = 0.000382947931491
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploration

avg = 0.000690814185618
p = 0.00108116883019
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploration
avg = 0.000405403384494
p = 0.000811688311688
Ant 0 : [1, 3, 4, 6, 5], 59
Exploitation
Ant 5 : [4, 6, 5, 3], 48
Exploitation
Ant 6 : [1, 3, 4, 6], 43
Exploration
avg = 0.00045004448544
p = 0.000508187464704
p = 0.000589728453365
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.000382947931491
p = 0.000811688311688
Ant 8 : [3, 4, 6, 5], 41
Exploration
avg = 0.000542727834933
p = 0.000649350649351
p = 0.000865800865792
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.000513054887586
p = 0.00058440974026
p = 0.000649350649351
Ant 1 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 10 : [5, 6, 4, 3], 41
Exploration
avg = 0.000249529557883
p = 0.000315581572482
p = 0.000278014817254
Ant 11 : [5, 4, 6, 3], 64
Exploration
avg = 0.000450190589336
p = 0.000508187464704
p = 0.000590312868949
Ant 12 : [6, 4, 5, 3], 44
Exploitation
Ant 13 : [4, 6, 5, 3], 48
Exploitation
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 2 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000450192065131
p = 0.000508187464704
p = 0.000590318772131
Ant 15 : [4, 6, 5, 3], 48

Exploitation
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000436647186064
p = 0.000811688311688
Ant 3 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000560763549221
p = 0.000721493506494
p = 0.000865800865801
Ant 17 : [0, 1, 3, 4], 43
Exploration
avg = 0.000560763549221
p = 0.000721493506494
p = 0.000865800865801
Ant 18 : [0, 1, 3, 4], 43
Exploitation
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 19 : [3, 4, 6, 5], 41
Exploration
avg = 0.000451107122691
p = 0.000564088085827
Ant 0 : [1, 3, 4, 6, 5, 2], 82
Exploitation
Ant 5 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 6 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000537104887586
p = 0.00058440974026
p = 0.000721500649351
Ant 7 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000422303038576
p = 0.000564647092038
Ant 8 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000914668664341
p = 0.00108116883019
p = 0.0012987012987
Ant 9 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.00046025381954
p = 0.000531286894923
Ant 1 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.000537104911395
p = 0.00058440974026
p = 0.000721500720779
Ant 10 : [5, 6, 4, 3, 2], 59
Exploitation
Ant 11 : [5, 4, 6, 3, 2], 82
Exploitation

Ant 12 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000537104911636
p = 0.00058440974026
p = 0.000721500721501
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000537104911636
p = 0.00058440974026
p = 0.000721500721501
Ant 14 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.00048947459876
p = 0.000589728453365
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 15 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 16 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 3 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 17 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000914668664341
p = 0.00108116883019
p = 0.0012987012987
Ant 18 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000489766806553
p = 0.000590312868949
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 19 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 0 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [4, 6, 5, 3, 2, 1], 88

Exploration
avg = 0.000451389448778
p = 0.000564652738001
Ant 6 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.00051139120378
p = 0.000590318771547
Ant 7 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 9 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.0012974025974

Ant 1 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000511391204075

p = 0.000590318772137
Ant 10 : [5, 6, 4, 3, 2, 1], 81
Exploitation
Ant 11 : [5, 4, 6, 3, 2, 1], 104
Exploration
avg = 0.000511391204075
p = 0.000590318772137
Ant 12 : [6, 4, 5, 3, 2, 1], 84
Exploitation
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000511391204075
p = 0.000590318772137
Ant 14 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.00129868831169
Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploitation

Ant thread 2 terminating.Ant 15 : [4, 6, 5, 3, 2, 1], 88

Exploration
avg = 0.000511391204075
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 3 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000500519480519

p = 0.000811688311688
Ant 17 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 18 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [3, 4, 6, 5, 2, 1], 86

Exploitation
Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 3, 4, 6, 5, 2, 0], 112

ExplorationUpdate called by 6

avg = 0.00129870129869Ant thread 6 terminating.

Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 6, 3, 2, 1, 0], 114

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [6, 4, 5, 3, 2, 1, 0], 94

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0012987012987

Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0012987012987

Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000564652738566

Ant 17 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000564652738566

Ant 18 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 19

Best: [4, 6, 5, 3, 2, 1, 0], 118, 4, 124

Ant thread 19 terminating.iter_counter = 5

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [6, 4], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [1, 0, 4], 30starting ant = 6

Exploitationstarting ant = 7

Ant 2 : [6, 4], 10starting ant = 8

Explorationstarting ant = 9

avg = 0.000517515746946starting ant = 10

p = 0.0012974025974starting ant = 11

p = 0.000649350649344starting ant = 12

Ant 3 : [1, 3], 18starting ant = 13

Explorationstarting ant = 14

avg = 0.000543810673409starting ant = 15

p = 0.000779220700597starting ant = 16

p = 0.000973051947167starting ant = 17

Ant 1 : [6, 4, 5], 22starting ant = 18

Exploitationstarting ant = 19

Ant 4 : [3, 4], 15

Exploration

avg = 0.000665998613268

p = 0.000779220700597

p = 0.0010811590909

p = 0.00116883116883

Ant 5 : [4, 6], 10

Exploitation

Ant 0 : [1, 0, 4, 6], 40

Exploitation
Ant 6 : [1, 0], 10
Exploration
avg = 0.000687641470411
p = 0.000779220700597
p = 0.0010811590909
p = 0.00129868831169
Ant 7 : [4, 6], 10
Exploitation
Ant 2 : [6, 4, 5], 22
Exploration
avg = 0.00048421702808
p = 0.000525968766234
p = 0.000649350649351
p = 0.000864935064935
Ant 8 : [3, 4], 15
Exploration
avg = 0.000501943296882
p = 0.0011688310509
p = 0.000648695454535
Ant 9 : [0, 4], 20
Exploitation
Ant 10 : [5, 4], 12
Exploitation
Ant 11 : [5, 4], 12
Exploration
avg = 0.000492552200221
p = 0.00129868831052
p = 0.000730519480519
Ant 12 : [6, 5], 16
Exploitation
Ant 3 : [1, 3, 4], 33
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.00068782381327
p = 0.000779220700597
p = 0.00108224016234
p = 0.0012987012974
Ant 14 : [4, 6], 10
Exploitation
Ant 15 : [4, 6], 10
Exploitation
Ant 16 : [4, 6], 10
Exploration
avg = 0.000502051404026
p = 0.0011688310509
p = 0.000649344097402
Ant 17 : [0, 4], 20
Exploitation
Ant 1 : [6, 4, 5, 3], 44
Exploration
avg = 0.000502052485098
p = 0.0011688310509

p = 0.000649350583831
Ant 18 : [0, 4], 20
Exploitation
Ant 19 : [3, 4], 15
Exploration
avg = 0.000669544436064
p = 0.00108224016234
p = 0.0012987012987
Ant 4 : [3, 4, 6], 25
Exploitation
Ant 5 : [4, 6, 5], 26
Exploitation
Ant 0 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000368696784911
p = 0.000649350648695
p = 0.000375316655844
Ant 6 : [1, 0, 5], 38
Exploitation
Ant 7 : [4, 6, 5], 26
Exploration
avg = 0.000432487934849
p = 0.000508187464709
p = 0.000589728453365
Ant 2 : [6, 4, 5, 3], 44
Exploration
avg = 0.000669544436064
p = 0.00108224016234
p = 0.0012987012987
Ant 8 : [3, 4, 6], 25
Exploration
avg = 0.000740180783976
p = 0.000779220700597
p = 0.00108224016234
p = 0.0012987012987
Ant 9 : [0, 4, 6], 30
Exploitation
Ant 10 : [5, 4, 6], 22
Exploitation
Ant 11 : [5, 4, 6], 22
Exploration
avg = 0.000562555282942
p = 0.000590312868949
p = 0.00108224025973
Ant 12 : [6, 5, 4], 28
Exploitation
Ant 3 : [1, 3, 4, 6], 43
Exploitation
Ant 13 : [4, 6, 5], 26
Exploration
avg = 0.000347558744393
p = 0.00081168831168
Ant 14 : [4, 6, 5], 26
Exploitation

Ant 15 : [4, 6, 5], 26
Exploration
avg = 0.000347558744395
p = 0.000811688311688
Ant 16 : [4, 6, 5], 26
Exploration
avg = 0.000740180783976
p = 0.000779220700597
p = 0.00108224016234
p = 0.0012987012987
Ant 17 : [0, 4, 6], 30
Exploitation
Ant 1 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000740180783976
p = 0.000779220700597
p = 0.00108224016234
p = 0.0012987012987
Ant 18 : [0, 4, 6], 30
Exploration
avg = 0.000669544436064
p = 0.00108224016234
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploration
avg = 0.000364945346134
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploration
avg = 0.000432634038745
p = 0.000508187464709
p = 0.000590312868949
Ant 5 : [4, 6, 5, 3], 48
Exploration
avg = 0.000549253088907
p = 0.000590318713105
Ant 0 : [1, 0, 4, 6, 5, 3], 78
Exploration
avg = 0.000727633419859
p = 0.00108225097403
p = 0.000729776469156
Ant 6 : [1, 0, 5, 6], 54
Exploration
avg = 0.000432635514394
p = 0.000508187464709
p = 0.000590318771547
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 2 : [6, 4, 5, 3, 2], 62
Exploitation
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 9 : [0, 4, 6, 5], 46
Exploitation

Ant 10 : [5, 4, 6, 1], 59
Exploitation
Ant 11 : [5, 4, 6, 1], 59
Exploration
avg = 0.00043650035497
p = 0.000779220700597
Ant 12 : [6, 5, 4, 3], 43
Exploration
avg = 0.000391919323101
p = 0.000811688311688
Ant 3 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.00043263551454
p = 0.000508187464709
p = 0.000590318772131
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000432635514542
p = 0.000508187464709
p = 0.000590318772137
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 15 : [4, 6, 5, 3], 48
Exploration
avg = 0.000432635514542
p = 0.000508187464709
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000402777471712
p = 0.000811688311688
Ant 17 : [0, 4, 6, 5], 46
Exploration
avg = 0.000460446676681
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3, 2, 1], 84
Exploitation
Ant 18 : [0, 4, 6, 5], 46
Exploitation
Ant 19 : [3, 4, 6, 5], 41
Exploitation
Ant 4 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.00050744203952
p = 0.000525968766234
p = 0.000721493506494
Ant 5 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000721500649351
Ant 0 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [1, 0, 5, 6, 4], 64

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Exploitation
Ant 7 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 2 : [6, 4, 5, 3, 2, 1], 84
Exploration
avg = 0.00039870796905
p = 0.000564088085827
Ant 8 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000494229380633
p = 0.000564647092038
p = 0.000590318772137
Ant 9 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 10 : [5, 4, 6, 1, 0], 69
Exploitation
Ant 11 : [5, 4, 6, 1, 0], 69
Exploration
avg = 0.00050744444452
p = 0.000525968766234
p = 0.000721500721494
Ant 12 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 3 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.000507444444522
p = 0.000525968766234
p = 0.000721500721501
Ant 13 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 14 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000507444444522
p = 0.000525968766234
p = 0.000721500721501
Ant 15 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000507444444522
p = 0.000525968766234
p = 0.000721500721501
Ant 16 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 17 : [0, 4, 6, 5, 3], 68
Exploration
avg = 0.0012987012974
Ant 1 : [6, 4, 5, 3, 2, 1, 0], 94
Update called by 1Exploitation

Ant thread 1 terminating.Ant 18 : [0, 4, 6, 5, 3], 68

Exploration
avg = 0.000398896167807
p = 0.000564652682101
Ant 19 : [3, 4, 6, 5, 2], 64
```

Exploration
avg = 0.000489959663694
p = 0.000590312868949
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000489962585772
p = 0.000590318713105
Ant 5 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 6 : [1, 0, 5, 6, 4, 3], 79
Exploitation
Ant 7 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.00129870129869
Ant 2 : [6, 4, 5, 3, 2, 1, 0], 94
Update called by 2Exploitation

Ant thread 2 terminating.Ant 8 : [3, 4, 6, 5, 2, 1], 86

Exploitation
Ant 9 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 10 : [5, 4, 6, 1, 0, 2], 99
Exploration
avg = 0.000353469130706
p = 0.000432074415581
Ant 11 : [5, 4, 6, 1, 0, 2], 99
Exploration
avg = 0.000489962615288
p = 0.000590318772137
Ant 12 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 3 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000511393132646

p = 0.000590318772137
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 14 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 17 : [0, 4, 6, 5, 3, 2], 86
Exploration
avg = 0.000623734743867
p = 0.000721500721501
Ant 18 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 19 : [3, 4, 6, 5, 2, 1], 86
Exploitation

Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.0012987012987

Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000721500721501

Ant 6 : [1, 0, 5, 6, 4, 3, 2], 97
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000590318772137

Ant 9 : [0, 4, 6, 5, 3, 2, 1], 108
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [5, 4, 6, 1, 0, 2, 3], 117
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 6, 1, 0, 2, 3], 117
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.0012987012987

Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0012987012987

Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000590318772137

Ant 17 : [0, 4, 6, 5, 3, 2, 1], 108
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000590318772137

Ant 18 : [0, 4, 6, 5, 3, 2, 1], 108
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 19
Best: [4, 6, 5, 3, 2, 1, 0], 118, 5, 124
Ant thread 19 terminating.
iter_counter = 6
starting ant = 0
Explorationstarting ant = 1

avg = 0.000476673263162starting ant = 2

p = 0.00116883116883starting ant = 3

p = 0.000648701298701starting ant = 4

Ant 0 : [1, 3], 18starting ant = 5

Explorationstarting ant = 6

avg = 0.00046551976933starting ant = 7

p = 0.00116883105194starting ant = 8

p = 0.000730519480519starting ant = 9

Ant 1 : [6, 5], 16starting ant = 10

Explorationstarting ant = 11

avg = 0.000478912626473starting ant = 12

p = 0.00116883105194starting ant = 13

p = 0.000810876623377starting ant = 14

Ant 2 : [6, 5], 16starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [1, 0], 10starting ant = 17

Explorationstarting ant = 18

avg = 0.000446747706095starting ant = 19

p = 0.00047337188961
p = 0.000649350649351
p = 0.000779220778442
Ant 4 : [3, 4], 15
Exploration
avg = 0.000458565726689
p = 0.000649350649351
p = 0.000864935064927
Ant 0 : [1, 3, 4], 33
Exploitation
Ant 5 : [4, 6], 10
Exploitation
Ant 6 : [1, 0], 10
Exploration
avg = 0.000653455729644
p = 0.000779212987006
p = 0.000974016146104
p = 0.0012974025974
Ant 7 : [4, 6], 10
Exploration
avg = 0.000461176277653
p = 0.00047337188961
p = 0.000649350649351
p = 0.000865792207792
Ant 8 : [3, 4], 15
Exploration
avg = 0.000477379294707
p = 0.00105194794581
p = 0.000584415583826
Ant 9 : [0, 4], 20
Exploration
avg = 0.000516466494987
p = 0.000531286894923
p = 0.000974025876623
Ant 1 : [6, 5, 4], 28
Exploitation
Ant 10 : [5, 4], 12
Exploration
avg = 0.00057005485533
p = 0.00108224025973
p = 0.000729782273937
Ant 11 : [5, 6], 16
Exploitation
Ant 12 : [6, 4], 10
Exploration
avg = 0.000653670015358
p = 0.000779212987006
p = 0.000974016146104
p = 0.00129868831169

Ant 13 : [4, 6], 10
Exploitation
Ant 14 : [4, 6], 10
Exploitation
Ant 2 : [6, 5, 4], 28
Exploitation
Ant 15 : [4, 6], 10
Exploration
avg = 0.000653672179858
p = 0.000779212987006
p = 0.000974016146104
p = 0.00129870129869
Ant 16 : [4, 6], 10
Exploitation
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.000488200723376
p = 0.00105194794581
p = 0.000649344155844
Ant 17 : [0, 4], 20
Exploration
avg = 0.000488201794805
p = 0.00105194794581
p = 0.000649350584416
Ant 18 : [0, 4], 20
Exploration
avg = 0.000461177706225
p = 0.00047337188961
p = 0.000649350649351
p = 0.000865800779221
Ant 19 : [3, 4], 15
Exploration
avg = 0.000628564018432
p = 0.000974016146104
p = 0.0012987012987
Ant 4 : [3, 4, 6], 25
Exploration
avg = 0.000737775639923
p = 0.000974016146104
p = 0.0012987012987
Ant 0 : [1, 3, 4, 6], 43
Exploration
avg = 0.000341089655666
p = 0.000811680194805
Ant 5 : [4, 6, 5], 26
Exploration
avg = 0.000375452577462
p = 0.000389602955455
p = 0.000649350648701
p = 0.000416643156025
Ant 6 : [1, 0, 5], 38
Exploitation
Ant 7 : [4, 6, 5], 26
Exploration

avg = 0.000628564018432
p = 0.000974016146104
p = 0.0012987012987
Ant 8 : [3, 4, 6], 25
Exploration
avg = 0.000707719602846
p = 0.000779212987006
p = 0.000974016146104
p = 0.0012987012987
Ant 9 : [0, 4, 6], 30
Exploitation
Ant 1 : [6, 5, 4, 3], 43
Exploitation
Ant 10 : [5, 4, 6], 22
Exploration
avg = 0.000438234135951
p = 0.00129740259623
Ant 11 : [5, 6, 4], 26
Exploration
avg = 0.000541810756094
p = 0.000864934987013
p = 0.000974016146104
Ant 12 : [6, 4, 5], 22
Exploitation
Ant 13 : [4, 6, 5], 26
Exploration
avg = 0.000341091279041
p = 0.00081168831168
Ant 14 : [4, 6, 5], 26
Exploitation
Ant 2 : [6, 5, 4, 3], 43
Exploration
avg = 0.000341091279042
p = 0.000811688311688
Ant 15 : [4, 6, 5], 26
Exploration
avg = 0.000341091279042
p = 0.000811688311688
Ant 16 : [4, 6, 5], 26
Exploitation
Ant 3 : [1, 0, 4, 6], 40
Exploration
avg = 0.000746465964204
p = 0.000865792207013
p = 0.00108116873289
p = 0.0012987012987
Ant 17 : [0, 4, 6], 30
Exploitation
Ant 18 : [0, 4, 6], 30
Exploration
avg = 0.000649994535789
p = 0.00108116873289
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25

Exploration
avg = 0.00036381132288
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploitation
Ant 0 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000402076649578
p = 0.000508187464201
p = 0.000531286894923
Ant 5 : [4, 6, 5, 3], 48
Exploitation
Ant 6 : [1, 0, 5, 4], 50
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.00036381132288
p = 0.000811688311688
Ant 8 : [3, 4, 6, 5], 41
Exploration
avg = 0.000382791932333
p = 0.000811688311688
Ant 9 : [0, 4, 6, 5], 46
Exploitation
Ant 1 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000223442020881
p = 0.000315894287976
p = 0.000250211103693
Ant 10 : [5, 4, 6, 3], 64
Exploration
avg = 0.000433973713591
p = 0.000865792207013
Ant 11 : [5, 6, 4, 3], 41
Exploration
avg = 0.000416833143085
p = 0.000508187464201
p = 0.000590312868949
Ant 12 : [6, 4, 5, 3], 44
Exploitation
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000416834618734
p = 0.000508187464201
p = 0.000590318771547
Ant 14 : [4, 6, 5, 3], 48
Exploration
avg = 0.000480509523879
p = 0.000720779220779
Ant 2 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.00041683461888
p = 0.000508187464201
p = 0.000590318772131

Ant 15 : [4, 6, 5, 3], 48
Exploitation
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000424562299226
p = 0.000811688311688
Ant 3 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000397395296414
p = 0.000811688311688
Ant 17 : [0, 4, 6, 5], 46
Exploitation
Ant 18 : [0, 4, 6, 5], 46
Exploration
avg = 0.00036381132288
p = 0.000811688311688
Ant 19 : [3, 4, 6, 5], 41
Exploration
avg = 0.000359006567797
p = 0.000508187464201
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 0 : [1, 3, 4, 6, 5, 2], 82
Exploitation
Ant 5 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 6 : [1, 0, 5, 4, 6], 60
Exploitation
Ant 7 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 8 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 9 : [0, 4, 6, 5, 3], 68
Exploration
avg = 0.000460253819382
p = 0.000531286894923
Ant 1 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 10 : [5, 4, 6, 3, 2], 82
Exploitation
Ant 11 : [5, 6, 4, 3, 2], 59
Exploitation
Ant 12 : [6, 4, 5, 3, 2], 62
Exploitation
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.00048075002412
p = 0.000721500721501
Ant 14 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.00048075002412
p = 0.000721500721501

Ant 15 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 16 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 3 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 17 : [0, 4, 6, 5, 3], 68
Exploration
avg = 0.000483307168063
p = 0.000564652682101
p = 0.000590318772137
Ant 18 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 19 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000489766806395
p = 0.000590312868949
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 0 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000511391174557

p = 0.000590318713105
Ant 5 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000230999292995
p = 0.000308624560017
Ant 6 : [1, 0, 5, 4, 6, 3], 102
Exploitation
Ant 7 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.00051139120407
p = 0.000590318772131
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000597436305556
p = 0.000721500721501
Ant 9 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 1 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [5, 4, 6, 3, 2, 1], 104

Exploitation
Ant 11 : [5, 6, 4, 3, 2, 1], 81
Exploitation
Ant 12 : [6, 4, 5, 3, 2, 1], 84
Exploitation
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000511391204073

p = 0.000590318772137
Ant 14 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000511391204073

p = 0.000590318772137
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000511391204073
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000721500721501
Ant 3 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 3Exploitation

Ant thread 3 terminating.Ant 17 : [0, 4, 6, 5, 3, 2], 86

Exploration
avg = 0.000597436305556
p = 0.000721500721501
Ant 18 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 19 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.0012987012974
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 5, 4, 6, 3, 2], 120

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0012987012987

Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [0, 4, 6, 5, 3, 2, 1], 108

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0012987012987

Ant 10 : [5, 4, 6, 3, 2, 1, 0], 114
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 3, 2, 1, 0], 91
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [6, 4, 5, 3, 2, 1, 0], 94
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0012987012987

Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0012987012987

Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [0, 4, 6, 5, 3, 2, 1], 108
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000590318772137

Ant 18 : [0, 4, 6, 5, 3, 2, 1], 108
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 19
Best: [4, 6, 5, 3, 2, 1, 0], 118, 6, 124
Ant thread 19 terminating.iter_counter = 7

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [6, 4], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.000346314570536starting ant = 6

p = 0.000350642659909starting ant = 7

p = 0.000584415583831starting ant = 8

p = 0.000417015094527starting ant = 9

Ant 0 : [1, 0, 5], 38starting ant = 10

Explorationstarting ant = 11

avg = 0.000480901844668starting ant = 12

p = 0.00129740248052starting ant = 13

p = 0.000730519480519starting ant = 14

Ant 2 : [6, 5], 16starting ant = 15

Explorationstarting ant = 16

avg = 0.000480725742041starting ant = 17

p = 0.0012974025974starting ant = 18

p = 0.000648695454545starting ant = 19

Ant 3 : [1, 3], 18

Exploitation

Ant 1 : [6, 4, 5], 22

Exploitation

Ant 4 : [3, 4], 15

Exploitation

Ant 5 : [4, 6], 10

Exploitation

Ant 6 : [1, 0], 10

Exploration

avg = 0.000656812461889

p = 0.000779220701292

p = 0.00108115909002

p = 0.0012974025974

Ant 7 : [4, 6], 10

Exploitation

Ant 8 : [3, 4], 15

Exploration

avg = 0.000454110788966

p = 0.000946753151226

p = 0.000584415583831

p = 0.000463353824415

Ant 9 : [0, 5], 28
Exploitation
Ant 0 : [1, 0, 5, 4], 50
Exploration
avg = 0.000560395755289
p = 0.00108116883116
p = 0.00072978232618
Ant 10 : [5, 6], 16
Exploration
avg = 0.000573910242898
p = 0.00108116883116
p = 0.000810869251833
Ant 11 : [5, 6], 16
Exploration
avg = 0.000494294701811
p = 0.00129740248052
p = 0.000810876623377
Ant 12 : [6, 5], 16
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.000657028890461
p = 0.000779220701292
p = 0.00108115909002
p = 0.00129870116883
Ant 14 : [4, 6], 10
Exploration
avg = 0.000526518441111
p = 0.000531286894923
p = 0.00108116883116
Ant 2 : [6, 5, 4], 28
Exploitation
Ant 15 : [4, 6], 10
Exploration
avg = 0.000657028912104
p = 0.000779220701292
p = 0.00108115909002
p = 0.00129870129869
Ant 16 : [4, 6], 10
Exploitation
Ant 17 : [0, 1], 10
Exploration
avg = 0.000512259464516
p = 0.00129518181723
p = 0.000584415583831
Ant 18 : [0, 4], 20
Exploitation
Ant 19 : [3, 4], 15
Exploitation
Ant 3 : [1, 3, 4], 33
Exploration
avg = 0.000387855843599
p = 0.000508187464201
p = 0.000531286894923

Ant 1 : [6, 4, 5, 3], 44
Exploitation
Ant 4 : [3, 4, 6], 25
Exploration
avg = 0.000333833860355
p = 0.000811680194805
Ant 5 : [4, 6, 5], 26
Exploitation
Ant 6 : [1, 0, 4], 30
Exploitation
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 8 : [3, 4, 6], 25
Exploration
avg = 0.00065145826867
p = 0.00108224025974
p = 0.00081168012109
Ant 9 : [0, 5, 6], 44
Exploitation
Ant 0 : [1, 0, 5, 4, 6], 60
Exploitation
Ant 10 : [5, 6, 4], 26
Exploitation
Ant 11 : [5, 6, 4], 26
Exploration
avg = 0.000538421038515
p = 0.000589728453365
p = 0.00108224025974
Ant 12 : [6, 5, 4], 28
Exploitation
Ant 13 : [4, 6, 5], 26
Exploration
avg = 0.00033383548373
p = 0.00081168831168
Ant 14 : [4, 6, 5], 26
Exploration
avg = 0.000390578270977
p = 0.000779220701292
Ant 2 : [6, 5, 4, 3], 43
Exploration
avg = 0.000333835483731
p = 0.000811688311688
Ant 15 : [4, 6, 5], 26
Exploration
avg = 0.000333835483731
p = 0.000811688311688
Ant 16 : [4, 6, 5], 26
Exploration
avg = 0.000331805813825
p = 0.000720772668831
Ant 17 : [0, 1, 3], 28
Exploration
avg = 0.000736559255411
p = 0.000864935064156

p = 0.00108115909002
p = 0.0012987012987
Ant 18 : [0, 4, 6], 30
Exploration
avg = 0.000632590554269
p = 0.00108115909002
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploration
avg = 0.000747601748031
p = 0.00108115909002
p = 0.0012987012987
Ant 3 : [1, 3, 4, 6], 43
Exploration
avg = 0.000432675021708
p = 0.000649350649351
Ant 1 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000347722398384
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploitation
Ant 5 : [4, 6, 5, 3], 48
Exploration
avg = 0.000877562624459
p = 0.00108115909002
p = 0.0012987012987
Ant 6 : [1, 0, 4, 6], 40
Exploration
avg = 0.000402612337105
p = 0.000508187464201
p = 0.000590312868949
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.000347722398384
p = 0.000811688311688
Ant 8 : [3, 4, 6, 5], 41
Exploration
avg = 0.000499832619124
p = 0.00129870116882
Ant 9 : [0, 5, 6, 4], 54
Exploration
avg = 0.000208162224249
p = 0.000278287825122
Ant 0 : [1, 0, 5, 4, 6, 3], 102
Exploration
avg = 0.000412006861693
p = 0.000864935064156
Ant 10 : [5, 6, 4, 3], 41
Exploration
avg = 0.0004122211476
p = 0.000865792207784
Ant 11 : [5, 6, 4, 3], 41
Exploitation

Ant 12 : [6, 5, 4, 3], 43
Exploration
avg = 0.000402613798144
p = 0.000508187464201
p = 0.000590318713105
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000402613812755
p = 0.000508187464201
p = 0.000590318771547
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 2 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000402613812901
p = 0.000508187464201
p = 0.000590318772131
Ant 15 : [4, 6, 5, 3], 48
Exploration
avg = 0.000402613812902
p = 0.000508187464201
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000516335820889
p = 0.000721493506494
p = 0.000865800864935
Ant 17 : [0, 1, 3, 4], 43
Exploration
avg = 0.000385733780369
p = 0.000811688311688
Ant 18 : [0, 4, 6, 5], 46
Exploration
avg = 0.000347722398384
p = 0.000811688311688
Ant 19 : [3, 4, 6, 5], 41
Exploration
avg = 0.000368861578119
p = 0.000811688311688
Ant 3 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000460252083666
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3, 2, 1], 84
Exploration
avg = 0.000340045493157
p = 0.000508187464201
Ant 4 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000456722640755
p = 0.000721493506494
Ant 5 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000419543420765

p = 0.000811688311688
Ant 6 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000456725021708
p = 0.000721500649351
Ant 7 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000358679033698
p = 0.000564088085822
Ant 8 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000434600563037
p = 0.000865800864935
Ant 9 : [0, 5, 6, 4, 3], 69
Exploration
avg = 0.000721500720779
Ant 0 : [1, 0, 5, 4, 6, 3, 2], 120
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000456725045755

p = 0.000721500721494
Ant 10 : [5, 6, 4, 3, 2], 59
Exploitation
Ant 11 : [5, 6, 4, 3, 2], 59
Exploitation
Ant 12 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000456725045758
p = 0.000721500721501
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000456725045758
p = 0.000721500721501
Ant 14 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.000456725045758
p = 0.000721500721501
Ant 15 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 16 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 17 : [0, 1, 3, 4, 6], 53
Exploitation
Ant 18 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 19 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 3 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.00129868831169
Ant 1 : [6, 4, 5, 3, 2, 1, 0], 94

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000489765070679

p = 0.000590312868949

Ant 4 : [3, 4, 6, 5, 2, 1], 86

Exploitation

Ant 5 : [4, 6, 5, 3, 2, 1], 88

Exploitation

Ant 6 : [1, 0, 4, 6, 5, 3], 78

Exploitation

Ant 7 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.00048976802227

p = 0.000590318772131

Ant 8 : [3, 4, 6, 5, 2, 1], 86

Exploration

avg = 0.000573767711075

p = 0.000721500721501

Ant 9 : [0, 5, 6, 4, 3, 2], 87

Exploitation

Ant 10 : [5, 6, 4, 3, 2, 1], 81

Exploitation

Ant 11 : [5, 6, 4, 3, 2, 1], 81

Exploration

avg = 0.000489768022273

p = 0.000590318772137

Ant 12 : [6, 5, 4, 3, 2, 1], 83

Exploration

avg = 0.000489768022273

p = 0.000590318772137

Ant 13 : [4, 6, 5, 3, 2, 1], 88

Exploitation

Ant 14 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.00129870116883

Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93

Update called by 2Exploitation

Ant thread 2 terminating.Ant 15 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000489768022273

p = 0.000590318772137

Ant 16 : [4, 6, 5, 3, 2, 1], 88

Exploration

avg = 0.000474862467532

p = 0.000811688311688

Ant 17 : [0, 1, 3, 4, 6, 5], 69

Exploration

avg = 0.000573767711075

p = 0.000721500721501

Ant 18 : [0, 4, 6, 5, 3, 2], 86

Exploitation

Ant 19 : [3, 4, 6, 5, 2, 1], 86

Exploitation

Ant 3 : [1, 3, 4, 6, 5, 2, 0], 112

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.0012987012974

Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00129870129869

Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 4, 6, 5, 3, 2], 96

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.0012987012987

Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0012987012987

Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000590318772137

Ant 9 : [0, 5, 6, 4, 3, 2, 1], 109

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0012987012987

Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0012987012987

Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000590318772137

Ant 18 : [0, 4, 6, 5, 3, 2, 1], 108

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 19

Best: [4, 6, 5, 3, 2, 1, 0], 118, 7, 124

Ant thread 19 terminating.iter_counter = 8

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000449774432725starting ant = 4

p = 0.00116883116766starting ant = 5

p = 0.000730519480519starting ant = 6

Ant 1 : [6, 5], 16starting ant = 7

Explorationstarting ant = 8

avg = 0.000331794637539starting ant = 9

p = 0.00058440974026starting ant = 10

p = 0.000417435490542starting ant = 11

Ant 0 : [1, 0, 5], 38starting ant = 12

Explorationstarting ant = 13

avg = 0.000463167289868starting ant = 14

p = 0.00116883116766starting ant = 15

p = 0.000810876623377starting ant = 16

Ant 2 : [6, 5], 16starting ant = 17

Exploitationstarting ant = 18

Ant 3 : [1, 0], 10starting ant = 19

Exploration

avg = 0.000407103737279

p = 0.000649350649351

p = 0.000779220779213

Ant 4 : [3, 4], 15

Exploration

avg = 0.00060431304557

p = 0.000779220779213

p = 0.000973043181022

p = 0.00116883116883

Ant 5 : [4, 6], 10

Exploration

avg = 0.000465410528138

p = 0.00129868831169

p = 0.000649344096877

Ant 6 : [1, 3], 18

Exploration

avg = 0.000494850869999

p = 0.000508187464704

p = 0.000531286894923

p = 0.000974025876623

Ant 1 : [6, 5, 4], 28

Exploitation

Ant 7 : [4, 6], 10

Exploration

avg = 0.000421389451566

p = 0.000649350649351

p = 0.000864935064935

Ant 8 : [3, 4], 15

Exploration

avg = 0.000478426560172

p = 0.0011656636355

p = 0.00058440974026

Ant 9 : [0, 4], 20

Exploitation

Ant 10 : [5, 4], 12

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000713061185114

p = 0.00108225097403

p = 0.000730519406804

Ant 0 : [1, 0, 5, 6], 54
Exploration
avg = 0.00046330121844
p = 0.00116883116766
p = 0.000811680194805
Ant 12 : [6, 5], 16
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.00062595804557
p = 0.000779220779213
p = 0.000973043181022
p = 0.00129870116883
Ant 14 : [4, 6], 10
Exploitation
Ant 15 : [4, 6], 10
Exploitation
Ant 16 : [4, 6], 10
Exploration
avg = 0.000516495889479
p = 0.000531286894923
p = 0.00108225097403
Ant 2 : [6, 5, 4], 28
Exploitation
Ant 17 : [0, 1], 10
Exploitation
Ant 18 : [0, 1], 10
Exploration
avg = 0.000353837445105
p = 0.00064870124026
p = 0.000463358028375
Ant 3 : [1, 0, 5], 38
Exploration
avg = 0.000421532308709
p = 0.000649350649351
p = 0.000865792207792
Ant 19 : [3, 4], 15
Exploration
avg = 0.000595305524816
p = 0.000973043181022
p = 0.0012987012987
Ant 4 : [3, 4, 6], 25
Exploitation
Ant 5 : [4, 6, 5], 26
Exploration
avg = 0.000429154238619
p = 0.000649350649351
p = 0.000865800779221
Ant 6 : [1, 3, 4], 33
Exploitation
Ant 1 : [6, 5, 4, 3], 43
Exploitation
Ant 7 : [4, 6, 5], 26
Exploitation

Ant 8 : [3, 4, 6], 25
Exploitation
Ant 9 : [0, 4, 6], 30
Exploitation
Ant 10 : [5, 4, 6], 22
Exploration
avg = 0.000573683901598
p = 0.000864935064935
p = 0.0012987012987
Ant 11 : [5, 4, 6], 22
Exploration
avg = 0.000523692974403
p = 0.00116883116766
Ant 0 : [1, 0, 5, 6, 4], 64
Exploration
avg = 0.000516495910908
p = 0.000531286894923
p = 0.00108225108117
Ant 12 : [6, 5, 4], 28
Exploitation
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 14 : [4, 6, 5], 26
Exploitation
Ant 15 : [4, 6, 5], 26
Exploitation
Ant 16 : [4, 6, 5], 26
Exploitation
Ant 2 : [6, 5, 4, 3], 43
Exploitation
Ant 17 : [0, 1, 3], 28
Exploitation
Ant 18 : [0, 1, 3], 28
Exploration
avg = 0.000733150516127
p = 0.00108225108224
p = 0.000810876622639
Ant 3 : [1, 0, 5, 6], 54
Exploration
avg = 0.000595305524816
p = 0.000973043181022
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploitation
Ant 4 : [3, 4, 6, 5], 41
Exploitation
Ant 5 : [4, 6, 5, 3], 48
Exploration
avg = 0.000705309105695
p = 0.000973043181022
p = 0.0012987012987
Ant 6 : [1, 3, 4, 6], 43
Exploitation
Ant 1 : [6, 5, 4, 3, 2], 61

Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.000333242366338
p = 0.000811688311688
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 9 : [0, 4, 6, 5], 46
Exploitation
Ant 10 : [5, 4, 6, 3], 64
Exploration
avg = 0.000207545937647
p = 0.000255874373261
p = 0.000308902596925
Ant 11 : [5, 4, 6, 3], 64
Exploitation
Ant 0 : [1, 0, 5, 6, 4, 3], 79
Exploitation
Ant 12 : [6, 5, 4, 3], 43
Exploitation
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000389815072888
p = 0.000508187464704
p = 0.000590318713105
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 15 : [4, 6, 5, 3], 48
Exploitation
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000434862064992
p = 0.000720779220779
Ant 2 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 17 : [0, 1, 3, 4], 43
Exploration
avg = 0.0005043845983
p = 0.000721493506494
p = 0.000865800865792
Ant 18 : [0, 1, 3, 4], 43
Exploration
avg = 0.000576949011126
p = 0.00129740259739
Ant 3 : [1, 0, 5, 6, 4], 64
Exploration
avg = 0.000333242366338
p = 0.000811688311688
Ant 19 : [3, 4, 6, 5], 41
Exploitation
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 5 : [4, 6, 5, 3, 2], 66
Exploration

```
avg = 0.000359031697363
p = 0.000811688311688
Ant 6 : [1, 3, 4, 6, 5], 59
Exploitation
Ant 1 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.000435102541182
p = 0.000721500649351
Ant 7 : [4, 6, 5, 3, 2], 66
Exploitation
avg = 0.000341614066524
p = 0.000564088085827
Ant 8 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000464625134878
p = 0.000564647092038
p = 0.000590318772137
Ant 9 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 10 : [5, 4, 6, 3, 2], 82
Exploitation
Ant 11 : [5, 4, 6, 3, 2], 82
Exploitation
Ant 0 : [1, 0, 5, 6, 4, 3, 2], 97
Update called by 0Exploration
```

Ant thread 0 terminating.avg = 0.000435102565232

```
p = 0.000721500721501
Ant 12 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000435102565232
p = 0.000721500721501
Ant 14 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000435102565232
p = 0.000721500721501
Ant 15 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 16 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000489472847265
p = 0.000589728453365
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 17 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000836884673394
p = 0.000973043181022
p = 0.0012987012987
Ant 18 : [0, 1, 3, 4, 6], 53
Exploration
```

avg = 0.000552355202697
p = 0.000865800864935
Ant 3 : [1, 0, 5, 6, 4, 3], 79
Exploitation
Ant 19 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000489767977136
p = 0.000590318713105
Ant 5 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000393248627692
p = 0.000564652682101
Ant 6 : [1, 3, 4, 6, 5, 2], 82
Exploitation
Ant 1 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [4, 6, 5, 3, 2, 1], 88

Exploration
avg = 0.000489768006649
p = 0.000590318772131
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000552465976043
p = 0.000721500721501
Ant 9 : [0, 4, 6, 5, 3, 2], 86
Exploration
avg = 0.000489768006651
p = 0.000590318772137
Ant 10 : [5, 4, 6, 3, 2, 1], 104
Exploitation
Ant 11 : [5, 4, 6, 3, 2, 1], 104
Exploration
avg = 0.000489768006651
p = 0.000590318772137
Ant 12 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.000489768006651
p = 0.000590318772137
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000489768006651
p = 0.000590318772137
Ant 14 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000489768006651
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploitation

Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploitation

Ant thread 2 terminating.Ant 17 : [0, 1, 3, 4, 6, 5], 69

Exploitation
Ant 18 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.000721500721501
Ant 3 : [1, 0, 5, 6, 4, 3, 2], 97
Update called by 3Exploitation

Ant thread 3 terminating.Ant 19 : [3, 4, 6, 5, 2, 1], 86

Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00129870129869

Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000389217241166

Ant 6 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0012987012987

Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000590318772137

Ant 9 : [0, 4, 6, 5, 3, 2, 1], 108
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [5, 4, 6, 3, 2, 1, 0], 114

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 6, 3, 2, 1, 0], 114

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.0012987012987

Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000564652738001

Ant 17 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 19

Best: [4, 6, 5, 3, 2, 1, 0], 118, 8, 125

Ant thread 19 terminating.iter_counter = 9

starting ant = 0

Explorationstarting ant = 1

avg = 0.000429694906247starting ant = 2

p = 0.00116883116883starting ant = 3

p = 0.00064935058441starting ant = 4

Ant 0 : [1, 3], 18starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [6, 4], 10starting ant = 7

Explorationstarting ant = 8

avg = 0.000462560887798starting ant = 9

p = 0.00129740248052starting ant = 10

p = 0.000730519480519starting ant = 11

Ant 2 : [6, 5], 16starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000390202887362starting ant = 16

p = 0.000649350649351starting ant = 17

p = 0.000779220779221starting ant = 18

Ant 4 : [3, 4], 15starting ant = 19

Exploration

avg = 0.000416368700472

p = 0.000649350649351

p = 0.000864935064935

Ant 0 : [1, 3, 4], 33

Exploration

avg = 0.000576349273481

p = 0.000779220779213

p = 0.00087573886292

p = 0.00116883116883

Ant 5 : [4, 6], 10

Exploration

avg = 0.000463028250295

p = 0.0012974025974

p = 0.00072077922013

Ant 6 : [1, 3], 18

Exploitation

Ant 1 : [6, 4, 5], 22

Exploration

avg = 0.000631852361099

p = 0.000779220779213

p = 0.00108018596006

p = 0.0012974025974

Ant 7 : [4, 6], 10

Exploitation

Ant 8 : [3, 4], 15

Exploitation

Ant 9 : [0, 1], 10

Exploration

avg = 0.000526448535223

p = 0.000531286894923

p = 0.000974025974016

p = 0.000730512175318

Ant 10 : [5, 6], 16

Exploitation

Ant 11 : [5, 4], 12

Exploitation
Ant 2 : [6, 5, 4], 28
Exploration
avg = 0.000475953744941
p = 0.00129740248052
p = 0.000810876623377
Ant 12 : [6, 5], 16
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.000318536361163
p = 0.000583831116234
p = 0.000417435528378
Ant 3 : [1, 0, 5], 38
Exploitation
Ant 14 : [4, 6], 10
Exploitation
Ant 15 : [4, 6], 10
Exploitation
Ant 16 : [4, 6], 10
Exploration
avg = 0.000489334463976
p = 0.00129740247767
p = 0.000583831116234
Ant 17 : [0, 4], 20
Exploitation
Ant 18 : [0, 1], 10
Exploration
avg = 0.000602638417736
p = 0.00108018596006
p = 0.0012987012987
Ant 4 : [3, 4, 6], 25
Exploitation
Ant 19 : [3, 4], 15
Exploration
avg = 0.000718357501878
p = 0.00108018596006
p = 0.0012987012987
Ant 0 : [1, 3, 4, 6], 43
Exploration
avg = 0.000311824712111
p = 0.000811680194805
Ant 5 : [4, 6, 5], 26
Exploitation
Ant 6 : [1, 3, 4], 33
Exploration
avg = 0.0003635382655
p = 0.000508187464709
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3], 44
Exploration
avg = 0.000311826319254
p = 0.000811688230519
Ant 7 : [4, 6, 5], 26

Exploitation
Ant 8 : [3, 4, 6], 25
Exploitation
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000408969169254
p = 0.00129740248052
Ant 10 : [5, 6, 4], 26
Exploitation
Ant 11 : [5, 4, 6], 22
Exploration
avg = 0.000353381402283
p = 0.000779220779213
Ant 2 : [6, 5, 4, 3], 43
Exploitation
Ant 12 : [6, 5, 4], 28
Exploration
avg = 0.000311826335325
p = 0.000811688310877
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 3 : [1, 0, 5, 4], 50
Exploration
avg = 0.000311826335486
p = 0.00081168831168
Ant 14 : [4, 6, 5], 26
Exploration
avg = 0.000311826335488
p = 0.000811688311688
Ant 15 : [4, 6, 5], 26
Exploitation
Ant 16 : [4, 6, 5], 26
Exploitation
Ant 17 : [0, 4, 6], 30
Exploration
avg = 0.000296297666718
p = 0.000721500649351
Ant 18 : [0, 1, 3], 28
Exploration
avg = 0.000320210337496
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploration
avg = 0.000602638417736
p = 0.00108018596006
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploitation
Ant 0 : [1, 3, 4, 6, 5], 59
Exploitation
Ant 5 : [4, 6, 5, 3], 48
Exploitation
Ant 6 : [1, 3, 4, 6], 43
Exploration

avg = 0.000391592308709
p = 0.000649350649351
Ant 1 : [6, 4, 5, 3, 2], 62
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.000374809973714
p = 0.000864935064935
Ant 10 : [5, 6, 4, 3], 41
Exploitation
Ant 11 : [5, 4, 6, 3], 64
Exploration
avg = 0.000415401832518
p = 0.000720779220779
Ant 2 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 12 : [6, 5, 4, 3], 43
Exploitation
Ant 13 : [4, 6, 5, 3], 48
Exploitation
Ant 3 : [1, 0, 5, 4, 6], 60
Exploration
avg = 0.000378296234656
p = 0.000508187464709
p = 0.000590318771547
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 15 : [4, 6, 5, 3], 48
Exploration
avg = 0.000378296234804
p = 0.000508187464709
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000365672566203
p = 0.000811688311688
Ant 17 : [0, 4, 6, 5], 46
Exploitation
Ant 18 : [0, 1, 3, 4], 43
Exploitation
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 19 : [3, 4, 6, 5], 41
Exploitation
Ant 0 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.000415639927757
p = 0.000721493506494
Ant 5 : [4, 6, 5, 3, 2], 66
Exploration

avg = 0.000350184804683
p = 0.000811688311688
Ant 6 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000460252067904
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3, 2, 1], 84
Exploration
avg = 0.000415642308709
p = 0.000721500649351
Ant 7 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000326441931469
p = 0.000564647092038
Ant 8 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000864635281724
p = 0.00108018596006
p = 0.0012987012987
Ant 9 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000415642332518
p = 0.000721500720779
Ant 10 : [5, 6, 4, 3, 2], 59
Exploitation
Ant 11 : [5, 4, 6, 3, 2], 82
Exploration
avg = 0.000489472847125
p = 0.000589728453365
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 12 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000415642332759
p = 0.000721500721501
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000210357508595
p = 0.000308905352254
Ant 3 : [1, 0, 5, 4, 6, 3], 102
Exploitation
Ant 14 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000415642332759
p = 0.000721500721501
Ant 15 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000415642332759
p = 0.000721500721501
Ant 16 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 17 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 18 : [0, 1, 3, 4, 6], 53

Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 19 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000389217240885
Ant 0 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [4, 6, 5, 3, 2, 1], 88

Exploration
avg = 0.000382156426978
p = 0.000564652738001
Ant 6 : [1, 3, 4, 6, 5, 2], 82
Exploitation
Ant 1 : [6, 4, 5, 3, 2, 1, 0], 94
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [4, 6, 5, 3, 2, 1], 88

Exploitation
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 9 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.000511391186559
p = 0.000590318772137
Ant 10 : [5, 6, 4, 3, 2, 1], 81
Exploration
avg = 0.000511391186559
p = 0.000590318772137
Ant 11 : [5, 4, 6, 3, 2, 1], 104
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [6, 5, 4, 3, 2, 1], 83

Exploration
avg = 0.000511391186559
p = 0.000590318772137
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000721500721501
Ant 3 : [1, 0, 5, 4, 6, 3, 2], 120
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [4, 6, 5, 3, 2, 1], 88

Exploitation
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 16 : [4, 6, 5, 3, 2, 1], 88

Exploitation
Ant 17 : [0, 4, 6, 5, 3, 2], 86
Exploration
avg = 0.000461748988312
p = 0.000811688311688
Ant 18 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [3, 4, 6, 5, 2, 1], 86

Exploration
avg = 0.0012987012974
Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98
ExplorationUpdate called by 5

avg = 0.00043246360098Ant thread 5 terminating.

Ant 6 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00129870129869

Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0012987012987

Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00056465273856

Ant 9 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.0012987012987

Ant 11 : [5, 4, 6, 3, 2, 1, 0], 114
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0012987012987

Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0012987012987

Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [0, 4, 6, 5, 3, 2, 1], 108

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000564652738566

Ant 18 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 19

Best: [4, 6, 5, 3, 2, 1, 0], 118, 9, 125

Ant thread 19 terminating.iter_counter = 10

starting ant = 0

Explorationstarting ant = 1

avg = 0.000417028455558starting ant = 2

p = 0.00116883116883starting ant = 3

p = 0.000649350648701starting ant = 4

Ant 0 : [1, 3], 18starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [6, 4], 10starting ant = 7

Explorationstarting ant = 8

avg = 0.000454741674624starting ant = 9

p = 0.00129740248051starting ant = 10

p = 0.000730519480519starting ant = 11

Ant 2 : [6, 5], 16starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000374992122435starting ant = 16

p = 0.000649350649351starting ant = 17

p = 0.000779220779221starting ant = 18

Ant 4 : [3, 4], 15starting ant = 19

Exploitation

Ant 0 : [1, 3, 4], 33

Exploration

avg = 0.000581848930185

p = 0.000779220701299

p = 0.000972167364052

p = 0.00116883116883

Ant 5 : [4, 6], 10

Exploitation

Ant 6 : [1, 0], 10

Exploitation

Ant 1 : [6, 4, 5], 22

Exploitation

Ant 7 : [4, 6], 10

Exploitation

Ant 8 : [3, 4], 15

Exploitation

Ant 9 : [0, 1], 10

Exploitation

Ant 10 : [5, 4], 12

Exploration

avg = 0.000537273819703

p = 0.00108116883116

p = 0.000729788895292

Ant 11 : [5, 6], 16

Exploration

avg = 0.000498770804585

p = 0.000508187464709

p = 0.000531286894923

p = 0.00108116883116

Ant 2 : [6, 5, 4], 28

Exploration

avg = 0.000468134531767

p = 0.00129740248051

p = 0.000810876623377

Ant 12 : [6, 5], 16

Exploitation

Ant 13 : [4, 6], 10

Exploitation
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.000621657743688
p = 0.000779220701299
p = 0.00108115024507
p = 0.00129870116883
Ant 14 : [4, 6], 10
Exploitation
Ant 15 : [4, 6], 10
Exploitation
Ant 16 : [4, 6], 10
Exploration
avg = 0.000482565625569
p = 0.00129740248051
p = 0.000648695401943
Ant 17 : [0, 4], 20
Exploitation
Ant 18 : [0, 1], 10
Exploitation
Ant 4 : [3, 4, 6], 25
Exploitation
Ant 19 : [3, 4], 15
Exploitation
Ant 0 : [1, 3, 4, 6], 43
Exploration
avg = 0.000302441656305
p = 0.000811680194805
Ant 5 : [4, 6, 5], 26
Exploitation
Ant 6 : [1, 0, 4], 30
Exploration
avg = 0.000353171297941
p = 0.000508187464709
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3], 44
Exploitation
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 8 : [3, 4, 6], 25
Exploration
avg = 0.000280953627318
p = 0.000720779220773
Ant 9 : [0, 1, 3], 28
Exploitation
Ant 10 : [5, 4, 6], 22
Exploitation
Ant 11 : [5, 6, 4], 26
Exploration
avg = 0.000337523762057
p = 0.000779220701299
Ant 2 : [6, 5, 4, 3], 43
Exploration
avg = 0.000510673401989

p = 0.000589728453365
p = 0.00108224025974
Ant 12 : [6, 5, 4], 28
Exploitation
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 3 : [1, 0, 4, 6], 40
Exploration
avg = 0.00030244327968
p = 0.00081168831168
Ant 14 : [4, 6, 5], 26
Exploitation
Ant 15 : [4, 6, 5], 26
Exploitation
Ant 16 : [4, 6, 5], 26
Exploration
avg = 0.00071281784175
p = 0.000864935064156
p = 0.00108115024507
p = 0.0012987012987
Ant 17 : [0, 4, 6], 30
Exploitation
Ant 18 : [0, 1, 3], 28
Exploration
avg = 0.000308481511539
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploration
avg = 0.00059014517814
p = 0.00108115024507
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploration
avg = 0.000342222601271
p = 0.000811688311688
Ant 0 : [1, 3, 4, 6, 5], 59
Exploration
avg = 0.000367781687552
p = 0.000508187464709
p = 0.000589728453365
Ant 5 : [4, 6, 5, 3], 48
Exploration
avg = 0.000859575833925
p = 0.000864935064156
p = 0.00108115024507
p = 0.0012987012987
Ant 6 : [1, 0, 4, 6], 40
Exploration
avg = 0.000374078099483
p = 0.000649350649351
Ant 1 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000367927791448
p = 0.000508187464709

p = 0.000590312868949
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploitation
Ant 10 : [5, 4, 6, 3], 64
Exploitation
Ant 11 : [5, 6, 4, 3], 41
Exploitation
Ant 2 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 12 : [6, 5, 4, 3], 43
Exploitation
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000407074120877
p = 0.000811688311688
Ant 3 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000367929267097
p = 0.000508187464709
p = 0.000590318771547
Ant 14 : [4, 6, 5, 3], 48
Exploitation
Ant 15 : [4, 6, 5, 3], 48
Exploration
avg = 0.000367929267245
p = 0.000508187464709
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000357120151243
p = 0.000811688311688
Ant 17 : [0, 4, 6, 5], 46
Exploration
avg = 0.000483948007307
p = 0.000721493506494
p = 0.000865800865792
Ant 18 : [0, 1, 3, 4], 43
Exploration
avg = 0.00029379943228
p = 0.000508187464709
Ant 4 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000308481511539
p = 0.000811688311688
Ant 19 : [3, 4, 6, 5], 41
Exploitation
Ant 0 : [1, 3, 4, 6, 5, 2], 82
Exploitation
Ant 5 : [4, 6, 5, 3, 2], 66
Exploitation

Ant 6 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000460446676523
p = 0.000531286894923
Ant 1 : [6, 4, 5, 3, 2, 1], 84
Exploitation
Ant 7 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 8 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000857789423848
p = 0.00108115024507
p = 0.0012987012987
Ant 9 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000398128123293
p = 0.000721500720779
Ant 10 : [5, 4, 6, 3, 2], 82
Exploitation
Ant 11 : [5, 6, 4, 3, 2], 59
Exploration
avg = 0.000489667455744
p = 0.000589728453365
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 12 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000577485727119
p = 0.000590318772137
Ant 3 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 14 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 15 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 16 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.00044949606067
p = 0.000564652682101
p = 0.000590318772137
Ant 17 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 18 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000489959663536
p = 0.000590312868949
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000312621171411
p = 0.000564652682101
Ant 19 : [3, 4, 6, 5, 2], 64
Exploitation

Ant 0 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000511393103129

p = 0.000590318713105
Ant 5 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 6 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 1 : [6, 4, 5, 3, 2, 1, 0], 94
ExploitationUpdate called by 1

Ant 7 : [4, 6, 5, 3, 2, 1], 88Ant thread 1 terminating.

Exploration
avg = 0.000511393132642
p = 0.000590318772131
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 9 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 10 : [5, 4, 6, 3, 2, 1], 104
Exploration
avg = 0.000511393132645
p = 0.000590318772137
Ant 11 : [5, 6, 4, 3, 2, 1], 81
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [6, 5, 4, 3, 2, 1], 83

Exploration
avg = 0.000511393132645
p = 0.000590318772137
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 3 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [4, 6, 5, 3, 2, 1], 88

Exploitation
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000511393132645
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 17 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 18 : [0, 1, 3, 4, 6, 5], 69
Exploration

avg = 0.0012987012974
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [3, 4, 6, 5, 2, 1], 86

Exploration
avg = 0.00129870129869
Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000721500721501

Ant 6 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.0012987012987

Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000564652738001

Ant 9 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0012987012987

Ant 10 : [5, 4, 6, 3, 2, 1, 0], 114
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93

ExplorationUpdate called by 12

avg = 0.0012987012987Ant thread 12 terminating.

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0012987012987

Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0012987012987

Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000590318772137

Ant 17 : [0, 4, 6, 5, 3, 2, 1], 108

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 19

Best: [4, 6, 5, 3, 2, 1, 0], 118, 10, 124

Ant thread 19 terminating.iter_counter = 11

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000426227956376starting ant = 4

p = 0.00116881947947starting ant = 5

p = 0.000730519480519starting ant = 6

Ant 1 : [6, 5], 16starting ant = 7

Exploitationstarting ant = 8

Ant 0 : [1, 0, 4], 30starting ant = 9

Explorationstarting ant = 10

avg = 0.000439620813519starting ant = 11

p = 0.00116881947947starting ant = 12

p = 0.000810876623377starting ant = 13

Ant 2 : [6, 5], 16starting ant = 14

Exploitationstarting ant = 15

Ant 3 : [1, 0], 10starting ant = 16

Explorationstarting ant = 17

avg = 0.000361302434001starting ant = 18

p = 0.000649350649351starting ant = 19

p = 0.000779220779221

Ant 4 : [3, 4], 15

Exploration

avg = 0.000572479000488

p = 0.000779220701299

p = 0.000973035220562

p = 0.00116883116883

Ant 5 : [4, 6], 10

Exploration

avg = 0.000427271486723

p = 0.00129868831169

p = 0.000649350584416

Ant 6 : [1, 3], 18

Exploration

avg = 0.000469877997035

p = 0.000508187464709

p = 0.000531286894923

p = 0.000974025876623

Ant 1 : [6, 5, 4], 28

Exploitation

Ant 7 : [4, 6], 10

Exploration

avg = 0.000375588148287

p = 0.000649350649351

p = 0.000864935064935

Ant 8 : [3, 4], 15

Exploitation

Ant 0 : [1, 0, 4, 6], 40

Exploitation

Ant 9 : [0, 1], 10

Exploitation

Ant 10 : [5, 4], 12

Exploration

avg = 0.000531231125676

p = 0.000531286894923

p = 0.00108224025973

p = 0.000729782385772

Ant 11 : [5, 6], 16

Exploration

avg = 0.000439754742091

p = 0.00116881947947

p = 0.000811680194805

Ant 12 : [6, 5], 16

Exploration

avg = 0.000594124000488

p = 0.000779220701299
p = 0.000973035220562
p = 0.00129870116883
Ant 13 : [4, 6], 10
Exploration
avg = 0.000491520873656
p = 0.000508187464709
p = 0.000531286894923
p = 0.00108224025973
Ant 2 : [6, 5, 4], 28
Exploitation
Ant 14 : [4, 6], 10
Exploration
avg = 0.000594124022131
p = 0.000779220701299
p = 0.000973035220562
p = 0.00129870129869
Ant 15 : [4, 6], 10
Exploration
avg = 0.000300613516395
p = 0.000648701298112
p = 0.00037532000329
Ant 3 : [1, 0, 5], 38
Exploitation
Ant 16 : [4, 6], 10
Exploitation
Ant 17 : [0, 1], 10
Exploration
avg = 0.000481562127118
p = 0.00129868831052
p = 0.000648701298112
Ant 18 : [0, 4], 20
Exploration
avg = 0.00037573100543
p = 0.000649350649351
p = 0.000865792207792
Ant 19 : [3, 4], 15
Exploration
avg = 0.0005571046863
p = 0.000973035220562
p = 0.0012987012987
Ant 4 : [3, 4, 6], 25
Exploration
avg = 0.000293943401758
p = 0.000811688230519
Ant 5 : [4, 6, 5], 26
Exploration
avg = 0.000394974647382
p = 0.000649350649351
p = 0.000865800779221
Ant 6 : [1, 3, 4], 33
Exploration
avg = 0.000323251903383
p = 0.000779220701299

Ant 1 : [6, 5, 4, 3], 43
Exploration
avg = 0.00029394341783
p = 0.000811688310877
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 8 : [3, 4, 6], 25
Exploration
avg = 0.000393422985843
p = 0.00081168831168
Ant 0 : [1, 0, 4, 6, 5], 56
Exploitation
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000535484655018
p = 0.000864935064156
p = 0.0012987012987
Ant 10 : [5, 4, 6], 22
Exploitation
Ant 11 : [5, 6, 4], 26
Exploration
avg = 0.000491523016515
p = 0.000508187464709
p = 0.000531286894923
p = 0.00108225097403
Ant 12 : [6, 5, 4], 28
Exploitation
Ant 13 : [4, 6, 5], 26
Exploration
avg = 0.000344680494098
p = 0.000864935064156
Ant 2 : [6, 5, 4, 3], 43
Exploration
avg = 0.000293943417992
p = 0.000811688311688
Ant 14 : [4, 6, 5], 26
Exploration
avg = 0.000293943417992
p = 0.000811688311688
Ant 15 : [4, 6, 5], 26
Exploration
avg = 0.000733148673308
p = 0.00108225108117
p = 0.000810869252429
Ant 3 : [1, 0, 5, 6], 54
Exploitation
Ant 16 : [4, 6, 5], 26
Exploitation
Ant 17 : [0, 1, 3], 28
Exploration
avg = 0.000684980213558
p = 0.000865792207784
p = 0.000973035220562
p = 0.0012987012987

Ant 18 : [0, 4, 6], 30
Exploration
avg = 0.0005571046863
p = 0.000973035220562
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploitation
Ant 4 : [3, 4, 6, 5], 41
Exploitation
Ant 5 : [4, 6, 5, 3], 48
Exploration
avg = 0.000668079036438
p = 0.000973035220562
p = 0.0012987012987
Ant 6 : [1, 3, 4, 6], 43
Exploitation
Ant 1 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 0 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 9 : [0, 1, 3, 4], 43
Exploration
avg = 0.000164507194568
p = 0.000186532418107
p = 0.000278014817252
Ant 10 : [5, 4, 6, 3], 64
Exploration
avg = 0.000344894780005
p = 0.000865792207784
Ant 11 : [5, 6, 4, 3], 41
Exploration
avg = 0.000344896922864
p = 0.000865800779221
Ant 12 : [6, 5, 4, 3], 43
Exploration
avg = 0.000358598981683
p = 0.000508187464709
p = 0.000590318713105
Ant 13 : [4, 6, 5, 3], 48
Exploitation
Ant 2 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 14 : [4, 6, 5, 3], 48
Exploration
avg = 0.00035859899644
p = 0.000508187464709
p = 0.000590318772131
Ant 15 : [4, 6, 5, 3], 48
Exploitation
Ant 3 : [1, 0, 5, 6, 4], 64

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Exploitation
Ant 16 : [4, 6, 5, 3], 48
Exploration
avg = 0.000475235565883
p = 0.000721493506494
p = 0.000865800865792
Ant 17 : [0, 1, 3, 4], 43
Exploitation
Ant 18 : [0, 4, 6, 5], 46
Exploration
avg = 0.000297925568177
p = 0.000811688311688
Ant 19 : [3, 4, 6, 5], 41
Exploration
avg = 0.000281359071209
p = 0.000508187464709
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 5 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 6 : [1, 3, 4, 6, 5], 59
Exploitation
Ant 1 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 7 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000299992611582
p = 0.000564088085827
Ant 8 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 0 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 0Exploitation

Ant thread 0 terminating.Ant 9 : [0, 1, 3, 4, 6], 53

Exploration
avg = 0.000382365335227
p = 0.000721500721494
Ant 10 : [5, 4, 6, 3, 2], 82
Exploration
avg = 0.00038236533523
p = 0.000721500721501
Ant 11 : [5, 6, 4, 3, 2], 59
Exploration
avg = 0.00038236533523
p = 0.000721500721501
Ant 12 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.00038236533523
p = 0.000721500721501
Ant 13 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000489474598601
p = 0.000589728453365
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Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.00038236533523
p = 0.000721500721501
Ant 14 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.00038236533523
p = 0.000721500721501
Ant 15 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000519982959965
p = 0.000865800864935
Ant 3 : [1, 0, 5, 6, 4, 3], 79
Exploitation
Ant 16 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000815300524753
p = 0.000973035220562
p = 0.0012987012987
Ant 17 : [0, 1, 3, 4, 6], 53
Exploitation
Ant 18 : [0, 4, 6, 5, 3], 68
Exploration
avg = 0.000300178946986
p = 0.000564647092038
Ant 19 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000489766806393
p = 0.000590312868949
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 5 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000363188688012
p = 0.000564652682101
Ant 6 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.00129868831169
Ant 1 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [4, 6, 5, 3, 2, 1], 88

Exploration
avg = 0.000489769757984
p = 0.000590318772131
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 9 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.000489769757987
p = 0.000590318772137
Ant 10 : [5, 4, 6, 3, 2, 1], 104
Exploration

avg = 0.000489769757987
p = 0.000590318772137
Ant 11 : [5, 6, 4, 3, 2, 1], 81
Exploration
avg = 0.000489769757987
p = 0.000590318772137
Ant 12 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.000489769757987
p = 0.000590318772137
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.00129870116883
Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000489769757987

p = 0.000590318772137
Ant 14 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000721500721501
Ant 3 : [1, 0, 5, 6, 4, 3, 2], 97
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000489769757987

p = 0.000590318772137
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 17 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 18 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 19 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.0012987012974
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
ExplorationUpdate called by 4

avg = 0.00129870129869Ant thread 4 terminating.

Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000389220743837

Ant 6 : [1, 3, 4, 6, 5, 2, 0], 112
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0012987012987

Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000564652738001

Ant 9 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [5, 4, 6, 3, 2, 1, 0], 114

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.0012987012987

Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0012987012987

Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00056465273856

Ant 17 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [0, 4, 6, 5, 3, 2, 1], 108

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 19
Best: [4, 6, 5, 3, 2, 1, 0], 118, 11, 124
Ant thread 19 terminating.iter_counter = 12

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000419893977057starting ant = 4

p = 0.00116881947947starting ant = 5

p = 0.000730519480519starting ant = 6

Ant 1 : [6, 5], 16starting ant = 7

Exploitationstarting ant = 8

Ant 0 : [1, 0, 4], 30starting ant = 9

Explorationstarting ant = 10

avg = 0.0004332868342starting ant = 11

p = 0.00116881947947starting ant = 12

p = 0.000810876623377starting ant = 13

Ant 2 : [6, 5], 16starting ant = 14

Exploitationstarting ant = 15

Ant 3 : [1, 0], 10starting ant = 16

Explorationstarting ant = 17

avg = 0.00034898171441starting ant = 18

p = 0.000649350649351starting ant = 19

p = 0.000779220779221

Ant 4 : [3, 4], 15

Exploration

avg = 0.000547698644594

p = 0.000779220779213

p = 0.000875731698506

p = 0.00116883116883

Ant 5 : [4, 6], 10

Exploitation

Ant 6 : [1, 0], 10

Exploitation
Ant 1 : [6, 5, 4], 28
Exploration
avg = 0.000569127216022
p = 0.000779220779213
p = 0.000875731698506
p = 0.0012974025974
Ant 7 : [4, 6], 10
Exploration
avg = 0.000363267428696
p = 0.000649350649351
p = 0.000864935064935
Ant 8 : [3, 4], 15
Exploitation
Ant 0 : [1, 0, 4, 6], 40
Exploitation
Ant 9 : [0, 1], 10
Exploration
avg = 0.000525576012301
p = 0.000531286894923
p = 0.00108116883116
p = 0.000730512108986
Ant 10 : [5, 6], 16
Exploration
avg = 0.000538970085747
p = 0.00108116883116
p = 0.000810876549661
Ant 11 : [5, 6], 16
Exploration
avg = 0.000433420762771
p = 0.00116881947947
p = 0.000811680194805
Ant 12 : [6, 5], 16
Exploration
avg = 0.000569343644594
p = 0.000779220779213
p = 0.000875731698506
p = 0.00129870116883
Ant 13 : [4, 6], 10
Exploration
avg = 0.000484588792964
p = 0.000508187464709
p = 0.000531286894923
p = 0.00108116883116
Ant 2 : [6, 5, 4], 28
Exploitation
Ant 14 : [4, 6], 10
Exploration
avg = 0.000569343666237
p = 0.000779220779213
p = 0.000875731698506
p = 0.00129870129869
Ant 15 : [4, 6], 10
Exploitation

Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.000569343666239
p = 0.000779220779213
p = 0.000875731698506
p = 0.0012987012987
Ant 16 : [4, 6], 10
Exploitation
Ant 17 : [0, 1], 10
Exploitation
Ant 18 : [0, 1], 10
Exploration
avg = 0.000363410285839
p = 0.000649350649351
p = 0.000865792207792
Ant 19 : [3, 4], 15
Exploitation
Ant 4 : [3, 4, 6], 25
Exploitation
Ant 5 : [4, 6, 5], 26
Exploration
avg = 0.000299425798786
p = 0.00064934415526
p = 0.000416643186152
Ant 6 : [1, 0, 5], 38
Exploitation
Ant 1 : [6, 5, 4, 3], 43
Exploitation
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 8 : [3, 4, 6], 25
Exploitation
Ant 0 : [1, 0, 4, 6, 5], 56
Exploitation
Ant 9 : [0, 1, 3], 28
Exploration
avg = 0.000357768876364
p = 0.00116881947947
Ant 10 : [5, 6, 4], 26
Exploration
avg = 0.000383485476573
p = 0.00129740248051
Ant 11 : [5, 6, 4], 26
Exploration
avg = 0.00048480307868
p = 0.000508187464709
p = 0.000531286894923
p = 0.00108224025974
Ant 12 : [6, 5, 4], 28
Exploitation
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 2 : [6, 5, 4, 3], 43
Exploitation

Ant 14 : [4, 6, 5], 26
Exploration
avg = 0.000286342642809
p = 0.000811688311688
Ant 15 : [4, 6, 5], 26
Exploitation
Ant 3 : [1, 0, 4, 6], 40
Exploitation
Ant 16 : [4, 6, 5], 26
Exploitation
Ant 17 : [0, 1, 3], 28
Exploitation
Ant 18 : [0, 1, 3], 28
Exploration
avg = 0.000527368243644
p = 0.000875731698506
p = 0.0012987012987
Ant 19 : [3, 4, 6], 25
Exploration
avg = 0.000288425219151
p = 0.000811688311688
Ant 4 : [3, 4, 6, 5], 41
Exploration
avg = 0.000335443783415
p = 0.000508187464709
p = 0.000531286894923
Ant 5 : [4, 6, 5, 3], 48
Exploration
avg = 0.000747961771542
p = 0.00108225097403
p = 0.000811680194068
Ant 6 : [1, 0, 5, 6], 54
Exploitation
Ant 1 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 8 : [3, 4, 6, 5], 41
Exploitation
Ant 0 : [1, 0, 4, 6, 5, 3], 78
Exploration
avg = 0.00046721577553
p = 0.000720779220779
p = 0.000865800779221
Ant 9 : [0, 1, 3, 4], 43
Exploitation
Ant 10 : [5, 6, 4, 3], 41
Exploration
avg = 0.000332052250058
p = 0.000865800779221
Ant 11 : [5, 6, 4, 3], 41
Exploration
avg = 0.000332052271487
p = 0.000865800864935

Ant 12 : [6, 5, 4, 3], 43
Exploration
avg = 0.00035020173796
p = 0.000508187464709
p = 0.000590318713105
Ant 13 : [4, 6, 5, 3], 48
Exploitation
Ant 2 : [6, 5, 4, 3, 2], 61
Exploration
avg = 0.000350201752571
p = 0.000508187464709
p = 0.000590318771547
Ant 14 : [4, 6, 5, 3], 48
Exploration
avg = 0.000350201752717
p = 0.000508187464709
p = 0.000590318772131
Ant 15 : [4, 6, 5, 3], 48
Exploitation
Ant 3 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000350201752718
p = 0.000508187464709
p = 0.000590318772137
Ant 16 : [4, 6, 5, 3], 48
Exploitation
Ant 17 : [0, 1, 3, 4], 43
Exploration
avg = 0.000467394368602
p = 0.000721493506494
p = 0.000865800865792
Ant 18 : [0, 1, 3, 4], 43
Exploitation
Ant 19 : [3, 4, 6, 5], 41
Exploration
avg = 0.000270162746245
p = 0.000508187464709
Ant 4 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 5 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000552736631231
p = 0.00129868831052
Ant 6 : [1, 0, 5, 6, 4], 64
Exploration
avg = 0.000460252083666
p = 0.000531286894923
Ant 1 : [6, 5, 4, 3, 2, 1], 83
Exploration
avg = 0.000368178801707
p = 0.000721500649351
Ant 7 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 8 : [3, 4, 6, 5, 2], 64

Exploration
avg = 0.000721500720779
Ant 0 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000777060515568

p = 0.000875731698506
p = 0.0012987012987
Ant 9 : [0, 1, 3, 4, 6], 53
Exploitation
Ant 10 : [5, 6, 4, 3, 2], 59
Exploration
avg = 0.000368178825757
p = 0.000721500721501
Ant 11 : [5, 6, 4, 3, 2], 59
Exploitation
Ant 12 : [6, 5, 4, 3, 2], 61
Exploitation
Ant 13 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 14 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 15 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000577482932088
p = 0.000590318772137
Ant 3 : [1, 0, 4, 6, 5, 3], 78
Exploration
avg = 0.000368178825757
p = 0.000721500721501
Ant 16 : [4, 6, 5, 3, 2], 66
Exploration
avg = 0.000777060515568
p = 0.000875731698506
p = 0.0012987012987
Ant 17 : [0, 1, 3, 4, 6], 53
Exploitation
Ant 18 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000288982622022
p = 0.000564647092038
Ant 19 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000489765070679
p = 0.000590312868949
Ant 4 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000489767992757
p = 0.000590318713105
Ant 5 : [4, 6, 5, 3, 2, 1], 88
Exploitation

Ant 6 : [1, 0, 5, 6, 4, 3], 79
Exploration
avg = 0.00129870116883
Ant 1 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000489768021978

p = 0.000590318771547
Ant 7 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.00048976802227
p = 0.000590318772131
Ant 8 : [3, 4, 6, 5, 2, 1], 86
Exploration
avg = 0.000446598778713
p = 0.000811688311688
Ant 9 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 10 : [5, 6, 4, 3, 2, 1], 81
Exploration
avg = 0.000489768022273
p = 0.000590318772137
Ant 11 : [5, 6, 4, 3, 2, 1], 81
Exploitation
Ant 12 : [6, 5, 4, 3, 2, 1], 83
Exploitation
Ant 13 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 2 : [6, 5, 4, 3, 2, 1, 0], 93
Update called by 2Exploitation

Ant thread 2 terminating.Ant 14 : [4, 6, 5, 3, 2, 1], 88

Exploration
avg = 0.000489768022273
p = 0.000590318772137
Ant 15 : [4, 6, 5, 3, 2, 1], 88
Exploration
avg = 0.000721500721501
Ant 3 : [1, 0, 4, 6, 5, 3, 2], 96
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000489768022273

p = 0.000590318772137
Ant 16 : [4, 6, 5, 3, 2, 1], 88
Exploitation
Ant 17 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.000446598778713
p = 0.000811688311688
Ant 18 : [0, 1, 3, 4, 6, 5], 69
Exploration

avg = 0.000489768022273
p = 0.000590318772137
Ant 19 : [3, 4, 6, 5, 2, 1], 86
Exploitation
Ant 4 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 5, 6, 4, 3, 2], 97

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0012987012987

Ant 8 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000564652682101

Ant 9 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0012987012987

Ant 10 : [5, 6, 4, 3, 2, 1, 0], 91
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 3, 2, 1, 0], 91

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [6, 5, 4, 3, 2, 1, 0], 93

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.0012987012987

Ant 13 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0012987012987

Ant 14 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0012987012987

Ant 15 : [4, 6, 5, 3, 2, 1, 0], 98
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [4, 6, 5, 3, 2, 1, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000564652738001

Ant 17 : [0, 1, 3, 4, 6, 5, 2], 92
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [0, 1, 3, 4, 6, 5, 2], 92

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0012987012987

Ant 19 : [3, 4, 6, 5, 2, 1, 0], 96
Update called by 19
Best: [4, 6, 5, 3, 2, 1, 0], 118, 12, 122
Ant thread 19 terminating.

Results

Best path = [4, 6, 5, 3, 2, 1, 0]
('E ' ,)
('G ' ,)
('F ' ,)
('D ' ,)
('C ' ,)
('B ' ,)
('A ' ,)

Best path cost = 118

>>>

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester

3\Perencanaan

Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py

[[0, 10, 30, 31, 20, 28], [10, 0, 22, 18, 40, 26], [30, 22, 0, 18, 26, 23], [31,
18, 18, 0, 15, 22], [20, 40, 26, 15, 0, 12], [28, 26, 23, 22, 12, 0]]

6

Average = 18

Tau0 = 0.0185185185185

iter_counter = 1

starting ant = 0

Explorationstarting ant = 1

avg = 0.000975783475783starting ant = 2

p = 0.00123456790123
p = 0.00154320987654starting ant = 3

Ant 0 : [4, 5], 12starting ant = 4

Explorationstarting ant = 5

avg = 0.000979524590636starting ant = 6

p = 0.00185185185185starting ant = 7

p = 0.00102880658436starting ant = 8

Ant 1 : [1, 3], 18starting ant = 9

Explorationstarting ant = 10

avg = 0.000801049013609starting ant = 11

p = 0.000841750841751starting ant = 12

p = 0.00102880658436starting ant = 13

p = 0.000805152979066starting ant = 14

Ant 2 : [2, 5], 23starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [0, 1], 10starting ant = 17

Exploitationstarting ant = 18

Ant 0 : [4, 5, 3], 34starting ant = 19

Exploration
avg = 0.000975783475783
p = 0.00123456790123
p = 0.00154320987654
Ant 4 : [4, 5], 12
Exploitation
Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [4, 5], 12
Exploration
avg = 0.000979524590636
p = 0.00185185185185
p = 0.00102880658436
Ant 7 : [1, 3], 18
Exploration
avg = 0.000975783475783
p = 0.00123456790123
p = 0.00154320987654
Ant 8 : [4, 5], 12

Exploitation
Ant 1 : [1, 3, 4], 33
Exploitation
Ant 9 : [3, 4], 15
Exploration
avg = 0.000979524590636
p = 0.00185185185185
p = 0.00102880658436
Ant 10 : [1, 3], 18
Exploration
avg = 0.000912748014197
p = 0.00154320987654
Ant 11 : [5, 4], 12
Exploration
avg = 0.000930761790977
p = 0.00185185185185
Ant 12 : [0, 1], 10
Exploitation
Ant 13 : [5, 4], 12
Exploration
avg = 0.000801049013609
p = 0.000841750841751
p = 0.00102880658436
p = 0.000805152979066
Ant 14 : [2, 5], 23
Exploration
avg = 0.00093964677298
p = 0.00154320987654
Ant 2 : [2, 5, 4], 35
Exploration
avg = 0.000975783475783
p = 0.00123456790123
p = 0.00154320987654
Ant 15 : [4, 5], 12
Exploration
avg = 0.000979524590636
p = 0.00185185185185
p = 0.00102880658436
Ant 16 : [1, 3], 18
Exploitation
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 17 : [5, 4], 12
Exploration
avg = 0.000912748014197
p = 0.00154320987654
Ant 18 : [5, 4], 12
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 0 : [4, 5, 3, 2], 52
Exploitation
Ant 19 : [5, 4], 12

Exploration
avg = 0.000755132548611
p = 0.000805152979066
p = 0.000841750841751
Ant 4 : [4, 5, 3], 34
Exploitation
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [4, 5, 3], 34
Exploration
avg = 0.000925624223115
p = 0.00102880658436
p = 0.00123456790123
Ant 7 : [1, 3, 4], 33
Exploration
avg = 0.000755132548611
p = 0.000805152979066
p = 0.000841750841751
Ant 8 : [4, 5, 3], 34
Exploration
avg = 0.00106046217157
p = 0.00154320987654
Ant 1 : [1, 3, 4, 5], 45
Exploitation
Ant 9 : [3, 4, 5], 27
Exploration
avg = 0.000925624223115
p = 0.00102880658436
p = 0.00123456790123
Ant 10 : [1, 3, 4], 33
Exploitation
Ant 11 : [5, 4, 3], 27
Exploitation
Ant 12 : [0, 1, 3], 28
Exploitation
Ant 13 : [5, 4, 3], 27
Exploration
avg = 0.00093964677298
p = 0.00154320987654
Ant 14 : [2, 5, 4], 35
Exploration
avg = 0.000874485596708
p = 0.000925925925926
p = 0.00123456790123
Ant 2 : [2, 5, 4, 3], 50
Exploitation
Ant 15 : [4, 5, 3], 34
Exploration
avg = 0.000925624223115
p = 0.00102880658436
p = 0.00123456790123
Ant 16 : [1, 3, 4], 33
Exploration
avg = 0.00103504177578

p = 0.00123456790123
Ant 3 : [0, 1, 3, 4], 43
Exploitation
Ant 17 : [5, 4, 3], 27
Exploration
avg = 0.000833926875594
p = 0.000925925925926
p = 0.00123456790123
Ant 18 : [5, 4, 3], 27
Exploration
avg = 0.000729517396184
p = 0.000841750841751
Ant 0 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 4 : [4, 5, 3, 1], 52
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 6 : [4, 5, 3, 2], 52
Exploitation
Ant 7 : [1, 3, 4, 5], 45
Exploitation
Ant 8 : [4, 5, 3, 1], 52
Exploitation
Ant 1 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 9 : [3, 4, 5, 2], 50
Exploitation
Ant 10 : [1, 3, 4, 5], 45
Exploitation
Ant 11 : [5, 4, 3, 1], 45
Exploitation
Ant 12 : [0, 1, 3, 4], 43
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 13 : [5, 4, 3, 2], 45
Exploitation
Ant 14 : [2, 5, 4, 3], 50
Exploitation
Ant 2 : [2, 5, 4, 3, 1], 68
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 15 : [4, 5, 3, 2], 52
Exploration
avg = 0.00106046217157

p = 0.00154320987654
Ant 16 : [1, 3, 4, 5], 45
Exploitation
Ant 3 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 17 : [5, 4, 3, 2], 45
Exploration
avg = 0.000884994911279
p = 0.00102880658436
p = 0.00102880658436
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploitation

Ant thread 0 terminating.Ant 19 : [5, 4, 3, 1], 45

Exploitation
Ant 4 : [4, 5, 3, 1, 0], 62
Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000733264320221
p = 0.000805152979066
Ant 7 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 8 : [4, 5, 3, 1, 0], 62
Exploration
avg = 0.000617283950617
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploitation

Ant thread 1 terminating.Ant 9 : [3, 4, 5, 2, 1], 72

Exploration
avg = 0.000733264320221
p = 0.000805152979066
Ant 10 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 11 : [5, 4, 3, 1, 0], 55
Exploration
avg = 0.0011277302944
p = 0.00154320987654
Ant 12 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 13 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 14 : [2, 5, 4, 3, 1], 68
Exploration

avg = 0.00185185185185
Ant 2 : [2, 5, 4, 3, 1, 0], 78
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000729517396184

p = 0.000841750841751
Ant 15 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 16 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000805152979066
Ant 3 : [0, 1, 3, 4, 5, 2], 78
Update called by 3Exploitation

Ant thread 3 terminating.Ant 17 : [5, 4, 3, 2, 1], 67

Exploration
avg = 0.000729517396184
p = 0.000841750841751
Ant 18 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.0013468013468
p = 0.00185185185185
Ant 19 : [5, 4, 3, 1, 0], 55
Exploration
avg = 0.000617283950617
Ant 4 : [4, 5, 3, 1, 0, 2], 92
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [4, 5, 3, 2, 1, 0], 84

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [1, 3, 4, 5, 2, 0], 98

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.000617283950617

Ant 8 : [4, 5, 3, 1, 0, 2], 92
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [3, 4, 5, 2, 1, 0], 82
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 3, 4, 5, 2, 0], 98

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000617283950617

Ant 11 : [5, 4, 3, 1, 0, 2], 85
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [0, 1, 3, 4, 5, 2], 78

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [5, 4, 3, 2, 1, 0], 77
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [2, 5, 4, 3, 1, 0], 78
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 5, 3, 2, 1, 0], 84

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000617283950617

Ant 16 : [1, 3, 4, 5, 2, 0], 98
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 1, 0, 2], 85

Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 1, 108
Ant thread 19 terminating.iter_counter = 2

starting ant = 0
Explorationstarting ant = 1

avg = 0.000878205128205starting ant = 2

p = 0.001111111111111starting ant = 3

p = 0.001388888888889starting ant = 4

Ant 0 : [4, 5], 12starting ant = 5

Explorationstarting ant = 6

avg = 0.000881572131572starting ant = 7

p = 0.001666666666667starting ant = 8

p = 0.000925925925926starting ant = 9

Ant 1 : [1, 3], 18starting ant = 10

Explorationstarting ant = 11

avg = 0.000720944112248starting ant = 12

p = 0.000757575757576starting ant = 13

p = 0.000925925925926starting ant = 14

p = 0.000724637681159starting ant = 15

Ant 2 : [2, 5], 23starting ant = 16

Explorationstarting ant = 17

avg = 0.000837685611879starting ant = 18

p = 0.001666666666667starting ant = 19

Ant 3 : [0, 1], 10

Exploitation

Ant 4 : [4, 5], 12

Exploration

avg = 0.00067961929375

p = 0.000724637681159

p = 0.000757575757576

Ant 0 : [4, 5, 3], 34

Exploration

avg = 0.000851634625828

p = 0.000925925925926

p = 0.000925925925926

p = 0.001111111111111

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [4, 5], 12

Exploitation

Ant 7 : [1, 0], 10

Exploration

avg = 0.0009090909294872

p = 0.001111111111111

p = 0.00154320972222

Ant 8 : [4, 5], 12

Exploitation
Ant 9 : [3, 4], 15
Exploration
avg = 0.000863922911915
p = 0.000925925925926
p = 0.001234555555556
Ant 1 : [1, 3, 4], 33
Exploitation
Ant 10 : [1, 0], 10
Exploitation
Ant 11 : [5, 4], 12
Exploration
avg = 0.000874352278546
p = 0.00185
Ant 12 : [0, 1], 10
Exploitation
Ant 13 : [5, 4], 12
Exploration
avg = 0.000736886141234
p = 0.000757575757576
p = 0.000925925925926
p = 0.000804347826087
Ant 14 : [2, 5], 23
Exploration
avg = 0.000909069325427
p = 0.001111111111111
p = 0.001543209875
Ant 15 : [4, 5], 12
Exploitation
Ant 2 : [2, 5, 4], 35
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.000869004046111
p = 0.00154320972222
Ant 17 : [5, 4], 12
Exploitation
Ant 18 : [5, 4], 12
Exploration
avg = 0.000869004076972
p = 0.00154320987653
Ant 19 : [5, 4], 12
Exploitation
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 4 : [4, 5, 3], 34
Exploration
avg = 0.000796495420151
p = 0.000925925925926
p = 0.000925925925926
Ant 0 : [4, 5, 3, 2], 52
Exploration
avg = 0.000858558879388
p = 0.00154320987653

Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000700660960416
p = 0.000724637681159
p = 0.000841742424242
Ant 6 : [4, 5, 3], 34
Exploration
avg = 0.000630440348182
p = 0.0008333333333333
Ant 7 : [1, 0, 4], 30
Exploration
avg = 0.00070066304375
p = 0.000724637681159
p = 0.000841750757576
Ant 8 : [4, 5, 3], 34
Exploration
avg = 0.000858558879392
p = 0.00154320987654
Ant 9 : [3, 4, 5], 27
Exploitation
Ant 1 : [1, 3, 4, 5], 45
Exploitation
Ant 10 : [1, 0, 4], 30
Exploitation
Ant 11 : [5, 4, 3], 27
Exploitation
Ant 12 : [0, 1, 3], 28
Exploitation
Ant 13 : [5, 4, 3], 27
Exploitation
Ant 14 : [2, 5, 4], 35
Exploration
avg = 0.000700663064583
p = 0.000724637681159
p = 0.000841750840909
Ant 15 : [4, 5, 3], 34
Exploration
avg = 0.000828185185185
p = 0.0008333333333333
p = 0.001234555555556
Ant 2 : [2, 5, 4, 3], 50
Exploration
avg = 0.000653586181516
p = 0.000925916666667
Ant 16 : [1, 0, 4], 30
Exploitation
Ant 17 : [5, 4, 3], 27
Exploration
avg = 0.000781398385256
p = 0.0008333333333333
p = 0.0012345679
Ant 18 : [5, 4, 3], 27
Exploitation
Ant 19 : [5, 4, 3], 27

Exploration
avg = 0.00100664043771
p = 0.00102777777778
p = 0.00123456777778
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.000830446037435
p = 0.000925925925926
p = 0.00102777777778
Ant 4 : [4, 5, 3, 2], 52
Exploitation
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000653633805808
p = 0.000724637681159
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.0011396011396
p = 0.00123456790123
p = 0.00154320987654
Ant 7 : [1, 0, 4, 5], 42
Exploitation
Ant 8 : [4, 5, 3, 2], 52
Exploration
avg = 0.000680203854117
p = 0.000804347826087
Ant 9 : [3, 4, 5, 2], 50
Exploration
avg = 0.000700191511387
p = 0.000805144927536
Ant 1 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 10 : [1, 0, 4, 5], 42
Exploration
avg = 0.00083078897262
p = 0.000925925925926
p = 0.00102880658333
Ant 11 : [5, 4, 3, 2], 45
Exploration
avg = 0.00100698341398
p = 0.00102880658435
p = 0.0012345679
Ant 12 : [0, 1, 3, 4], 43
Exploitation
Ant 13 : [5, 4, 3, 2], 45
Exploitation
Ant 14 : [2, 5, 4, 3], 50
Exploitation
Ant 15 : [4, 5, 3, 2], 52
Exploitation
Ant 2 : [2, 5, 4, 3, 1], 68
Exploration

avg = 0.0011396011396
p = 0.00123456790123
p = 0.00154320987654
Ant 16 : [1, 0, 4, 5], 42
Exploration
avg = 0.000864739590247
p = 0.00102777777778
p = 0.00102880658436
Ant 17 : [5, 4, 3, 2], 45
Exploration
avg = 0.000864739590247
p = 0.00102777777778
p = 0.00102880658436
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.00109211775878
p = 0.00154320987654
Ant 3 : [0, 1, 3, 4, 5], 55
Exploitation
Ant 4 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000698648989899

p = 0.000841742424242
Ant 5 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000698653156566
p = 0.000841750757576
Ant 6 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 7 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000698653198232
p = 0.000841750840909
Ant 8 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000555555555556
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [1, 0, 4, 5, 3], 64

Exploitation
Ant 11 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 12 : [0, 1, 3, 4, 5], 55
Exploitation

Ant 13 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 14 : [2, 5, 4, 3, 1], 68
Exploitation
Ant 15 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 2 : [2, 5, 4, 3, 1, 0], 78
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000823451870151

p = 0.000841750841751
Ant 16 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000729208754209
p = 0.000841750841751
Ant 17 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000729208754209
p = 0.000841750841751
Ant 18 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000805152898551
Ant 3 : [0, 1, 3, 4, 5, 2], 78
Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [4, 5, 3, 2, 1, 0], 84

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00185185185185

Ant 5 : [3, 4, 5, 2, 1, 0], 82
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185185

Ant 6 : [4, 5, 3, 2, 1, 0], 84
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [1, 0, 4, 5, 3, 2], 82

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 5, 3, 2, 1, 0], 84

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 4, 5, 2, 1, 0], 82

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00102880658436

Ant 10 : [1, 0, 4, 5, 3, 2], 82
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [0, 1, 3, 4, 5, 2], 78

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [5, 4, 3, 2, 1, 0], 77
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [2, 5, 4, 3, 1, 0], 78
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00185185185185

Ant 15 : [4, 5, 3, 2, 1, 0], 84
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 4, 5, 3, 2], 82

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00185185185185

Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 2, 106

Ant thread 19 terminating.iter_counter = 3

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [4, 5], 12starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [4, 5, 3], 34starting ant = 6

Explorationstarting ant = 7

avg = 0.000689492520523starting ant = 8

p = 0.000757575757576starting ant = 9

p = 0.000833333333333starting ant = 10

p = 0.000724630434783starting ant = 11

Ant 2 : [2, 5], 23starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [0, 1], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000588229625864starting ant = 16

p = 0.00083333325starting ant = 17

Ant 1 : [1, 0, 4], 30starting ant = 18

Explorationstarting ant = 19

avg = 0.00087094017094

p = 0.001111111111111

p = 0.001541666666667

Ant 4 : [4, 5], 12

Exploitation

Ant 5 : [3, 4], 15

Exploration

avg = 0.000778571186778

p = 0.000925916666667

p = 0.000925925925926

Ant 0 : [4, 5, 3, 2], 52

Exploitation

Ant 6 : [4, 5], 12

Exploitation

Ant 7 : [1, 0], 10

Exploration

avg = 0.000871248782051

p = 0.001111111111111

p = 0.00154320972222

Ant 8 : [4, 5], 12

Exploration
avg = 0.000870543385468
p = 0.000925916666667
p = 0.001027777777778
p = 0.001233333333333
Ant 9 : [3, 4], 15
Exploration
avg = 0.000882300085082
p = 0.001851833333333
p = 0.000925925833333
Ant 10 : [1, 3], 18
Exploitation
Ant 11 : [5, 4], 12
Exploitation
Ant 2 : [2, 5, 4], 35
Exploitation
Ant 12 : [0, 1], 10
Exploitation
Ant 13 : [5, 4], 12
Exploration
avg = 0.000665379758898
p = 0.000681818181818
p = 0.001027777777685
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 14 : [2, 3], 18
Exploration
avg = 0.000871248812607
p = 0.001111111111111
p = 0.001543209875
Ant 15 : [4, 5], 12
Exploration
avg = 0.000902874177672
p = 0.001851833333333
p = 0.00102879629629
Ant 16 : [1, 3], 18
Exploration
avg = 0.000844278771384
p = 0.00154320972222
Ant 17 : [5, 4], 12
Exploration
avg = 0.00107708135485
p = 0.001111111111111
p = 0.00154320987653
Ant 1 : [1, 0, 4, 5], 42
Exploration
avg = 0.00084427880194
p = 0.001543209875
Ant 18 : [5, 4], 12
Exploration
avg = 0.000844278802245
p = 0.00154320987653
Ant 19 : [5, 4], 12
Exploitation

Ant 4 : [4, 5, 3], 34
Exploitation
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000656287878788
p = 0.000757575757576
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000669754367008
p = 0.000724637681152
p = 0.000841742424242
Ant 6 : [4, 5, 3], 34
Exploration
avg = 0.000611146313156
p = 0.000924999999167
Ant 7 : [1, 0, 4], 30
Exploitation
Ant 8 : [4, 5, 3], 34
Exploitation
Ant 9 : [3, 4, 5], 27
Exploitation
Ant 10 : [1, 3, 4], 33
Exploration
avg = 0.000703258547009
p = 0.00075
p = 0.001111111111111
Ant 11 : [5, 4, 3], 27
Exploration
avg = 0.000786111111111
p = 0.001233333333333
Ant 2 : [2, 5, 4, 3], 50
Exploration
avg = 0.000665636935056
p = 0.000681818181818
p = 0.00102880648148
Ant 12 : [0, 1, 3], 28
Exploitation
Ant 13 : [5, 4, 3], 27
Exploitation
Ant 3 : [0, 1, 3, 4], 43
Exploitation
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 15 : [4, 5, 3], 34
Exploitation
Ant 16 : [1, 3, 4], 33
Exploration
avg = 0.000734122713675
p = 0.00075
p = 0.001234567777778
Ant 17 : [5, 4, 3], 27
Exploitation
Ant 1 : [1, 0, 4, 5, 3], 64
Exploitation

Ant 18 : [5, 4, 3], 27

Exploration

avg = 0.000734122744536

p = 0.00075

p = 0.00123456790122

Ant 19 : [5, 4, 3], 27

Exploration

avg = 0.000812521804062

p = 0.000925916666667

p = 0.00102777777778

Ant 4 : [4, 5, 3, 2], 52

Exploitation

Ant 5 : [3, 4, 5, 2], 50

Exploration

avg = 0.00185183333333

Ant 0 : [4, 5, 3, 2, 1, 0], 84

ExploitationUpdate called by 0

Ant 6 : [4, 5, 3, 2], 52Ant thread 0 terminating.

Exploration

avg = 0.00111823361823

p = 0.00123456790123

p = 0.00154320987654

Ant 7 : [1, 0, 4, 5], 42

Exploration

avg = 0.000812864705297

p = 0.000925916666667

p = 0.00102880648148

Ant 8 : [4, 5, 3, 2], 52

Exploitation

Ant 9 : [3, 4, 5, 2], 50

Exploration

avg = 0.000956710984489

p = 0.00154320987654

Ant 10 : [1, 3, 4, 5], 45

Exploitation

Ant 11 : [5, 4, 3, 2], 45

Exploration

avg = 0.000704893817204

p = 0.000925916666667

Ant 2 : [2, 5, 4, 3, 1], 68

Exploitation

Ant 12 : [0, 1, 3, 4], 43

Exploitation

Ant 13 : [5, 4, 3, 2], 45

Exploitation

Ant 3 : [0, 1, 3, 4, 5], 55

Exploitation

Ant 14 : [2, 3, 4, 5], 45

Exploration

avg = 0.00084681841243

p = 0.00102777768519

p = 0.00102880658436

Ant 15 : [4, 5, 3, 2], 52
Exploitation
Ant 16 : [1, 3, 4, 5], 45
Exploitation
Ant 17 : [5, 4, 3, 2], 45
Exploration
avg = 0.00102880658436
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00084681841243

p = 0.00102777768519
p = 0.00102880658436
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000697954545455
p = 0.000840909090909
Ant 4 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000698371212121
p = 0.000841742424242
Ant 5 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000698375378788
p = 0.000841750757576
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000823447884643
p = 0.000841750841751
Ant 7 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000698375420455
p = 0.000841750840909
Ant 8 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000670429606625
p = 0.000805144927536
Ant 10 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 11 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 2 : [2, 5, 4, 3, 1, 0], 78
ExplorationUpdate called by 2

avg = 0.00106006647673Ant thread 2 terminating.

p = 0.00154320987654
Ant 12 : [0, 1, 3, 4, 5], 55
Exploitation

Ant 13 : [5, 4, 3, 2, 1], 67

Exploitation

Ant 3 : [0, 1, 3, 4, 5, 2], 78

Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [2, 3, 4, 5, 1], 71

Exploration

avg = 0.000698375420875

p = 0.000841750841751

Ant 15 : [4, 5, 3, 2, 1], 74

Exploitation

Ant 16 : [1, 3, 4, 5, 2], 68

Exploitation

Ant 17 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.000698375420875

p = 0.000841750841751

Ant 18 : [5, 4, 3, 2, 1], 67

Exploitation

Ant 19 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.00185185185

Ant 4 : [4, 5, 3, 2, 1, 0], 84

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00185185185183

Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185185

Ant 6 : [4, 5, 3, 2, 1, 0], 84

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00102880658436

Ant 7 : [1, 0, 4, 5, 3, 2], 82

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [4, 5, 3, 2, 1, 0], 84

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [3, 4, 5, 2, 1, 0], 82

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 3, 4, 5, 2, 0], 98

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000805152979058

Ant 12 : [0, 1, 3, 4, 5, 2], 78

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [5, 4, 3, 2, 1, 0], 77

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [2, 3, 4, 5, 1, 0], 81

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 5, 3, 2, 1, 0], 84

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0006166611111111

Ant 16 : [1, 3, 4, 5, 2, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [5, 4, 3, 2, 1, 0], 77

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 3, 106

Ant thread 19 terminating.iter_counter = 4

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [4, 5], 12starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.000651040997046starting ant = 6

p = 0.000724637681159starting ant = 7

p = 0.000757575757576starting ant = 8

Ant 0 : [4, 5, 3], 34starting ant = 9

Exploitationstarting ant = 10

Ant 2 : [2, 3], 18starting ant = 11

Exploitationstarting ant = 12

Ant 3 : [0, 1], 10starting ant = 13

Explorationstarting ant = 14

avg = 0.000550237932026starting ant = 15

p = 0.000833324999993starting ant = 16

Ant 1 : [1, 0, 4], 30starting ant = 17

Explorationstarting ant = 18

avg = 0.000836901709402starting ant = 19

p = 0.001111111111111

p = 0.001541666666667

Ant 4 : [4, 5], 12

Exploration

avg = 0.000802231437662

p = 0.000924999916667

p = 0.000925925925926

p = 0.001111111111111

Ant 5 : [3, 4], 15

Exploration

avg = 0.000837207264957

p = 0.001111111111111

p = 0.001543194444444

Ant 6 : [4, 5], 12

Exploitation

Ant 7 : [1, 0], 10

Exploration

avg = 0.000837210320513

p = 0.001111111111111

p = 0.001543209722222

Ant 8 : [4, 5], 12

Exploitation

Ant 0 : [4, 5, 3, 2], 52

Exploitation

Ant 9 : [3, 4], 15

Exploitation

Ant 10 : [1, 0], 10
Exploitation
Ant 2 : [2, 3, 4], 33
Exploration
avg = 0.000815277242082
p = 0.000840909090909
p = 0.001388888888889
Ant 11 : [5, 4], 12
Exploration
avg = 0.000828525295619
p = 0.00184999983332
p = 0.000924999916667
Ant 12 : [0, 4], 20
Exploration
avg = 0.000599073264467
p = 0.000613636363636
p = 0.000925925925
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 13 : [5, 4], 12
Exploitation
Ant 14 : [2, 3], 18
Exploitation
Ant 15 : [4, 5], 12
Exploration
avg = 0.00086999931546
p = 0.00185185166667
p = 0.00102777777777
Ant 16 : [1, 3], 18
Exploitation
Ant 1 : [1, 0, 4, 5], 42
Exploitation
Ant 17 : [5, 4], 12
Exploitation
Ant 18 : [5, 4], 12
Exploration
avg = 0.000846141439304
p = 0.001543209875
Ant 19 : [5, 4], 12
Exploitation
Ant 4 : [4, 5, 3], 34
Exploitation
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [4, 5, 3], 34
Exploration
avg = 0.000573385848486
p = 0.000925916665833
Ant 7 : [1, 0, 4], 30
Exploration
avg = 0.000672084747046
p = 0.000724637681159
p = 0.000841750757576
Ant 8 : [4, 5, 3], 34

Exploitation
Ant 0 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5], 27
Exploration
avg = 0.000573388140359
p = 0.000925925833325
Ant 10 : [1, 0, 4], 30
Exploitation
Ant 2 : [2, 3, 4, 5], 45
Exploitation
Ant 11 : [5, 4, 3], 27
Exploitation
Ant 12 : [0, 4, 5], 32
Exploitation
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.000691266025641
p = 0.001233333333333
Ant 13 : [5, 4, 3], 27
Exploitation
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 15 : [4, 5, 3], 34
Exploitation
Ant 16 : [1, 3, 4], 33
Exploitation
Ant 1 : [1, 0, 4, 5, 3], 64
Exploitation
Ant 17 : [5, 4, 3], 27
Exploration
avg = 0.000691574636752
p = 0.001234567777778
Ant 18 : [5, 4, 3], 27
Exploitation
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000796087188471
p = 0.000924999916667
p = 0.001027777777778
Ant 4 : [4, 5, 3, 2], 52
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.001099002849
p = 0.00123456790122
p = 0.00154320987654
Ant 7 : [1, 0, 4, 5], 42
Exploitation
Ant 8 : [4, 5, 3, 2], 52
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84

Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000642099458513

p = 0.000804347826087

Ant 9 : [3, 4, 5, 2], 50

Exploitation

Ant 10 : [1, 0, 4, 5], 42

Exploitation

Ant 2 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 11 : [5, 4, 3, 2], 45

Exploration

avg = 0.000786140683779

p = 0.000805144927536

p = 0.000841750841751

Ant 12 : [0, 4, 5, 3], 54

Exploration

avg = 0.00103122032289

p = 0.00154320987654

Ant 3 : [0, 1, 3, 4, 5], 55

Exploitation

Ant 13 : [5, 4, 3, 2], 45

Exploitation

Ant 14 : [2, 3, 4, 5], 45

Exploitation

Ant 15 : [4, 5, 3, 2], 52

Exploration

avg = 0.000912480215258

p = 0.00154320987654

Ant 16 : [1, 3, 4, 5], 45

Exploitation

Ant 1 : [1, 0, 4, 5, 3, 2], 82

Update called by 1Exploitation

Ant thread 1 terminating.Ant 17 : [5, 4, 3, 2], 45

Exploitation

Ant 18 : [5, 4, 3, 2], 45

Exploitation

Ant 19 : [5, 4, 3, 2], 45

Exploration

avg = 0.000698229520455

p = 0.000840909090909

Ant 4 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000698646187121

p = 0.000841742424242

Ant 5 : [3, 4, 5, 2, 1], 72

Exploration

avg = 0.000698650353788

p = 0.000841750757576

Ant 6 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000823447884644
p = 0.000841750841751
Ant 7 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000698650395455
p = 0.000841750840909
Ant 8 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000698650395871
p = 0.000841750841742
Ant 9 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 10 : [1, 0, 4, 5, 3], 64
Exploitation
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000698650395875

p = 0.000841750841751
Ant 11 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000976903250514
p = 0.00102880658436
Ant 12 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000805144927536
Ant 3 : [0, 1, 3, 4, 5, 2], 78
Update called by 3Exploitation

Ant thread 3 terminating.Ant 13 : [5, 4, 3, 2, 1], 67

Exploitation
Ant 14 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 15 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000643647877847
p = 0.000805152898551
Ant 16 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000698650395875
p = 0.000841750841751
Ant 17 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000698650395875
p = 0.000841750841751
Ant 18 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000698650395875
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 4 : [4, 5, 3, 2, 1, 0], 84

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

ExplorationUpdate called by 5

avg = 0.00185185185185Ant thread 5 terminating.

Ant 6 : [4, 5, 3, 2, 1, 0], 84

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00102880658436

Ant 7 : [1, 0, 4, 5, 3, 2], 82

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 5, 3, 2, 1, 0], 84

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 4, 5, 2, 1, 0], 82

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 5, 3, 2], 82

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [5, 4, 3, 2, 1, 0], 77

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [0, 4, 5, 3, 2, 1], 94

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [5, 4, 3, 2, 1, 0], 77

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [2, 3, 4, 5, 1, 0], 81

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 5, 3, 2, 1, 0], 84

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 3, 4, 5, 2, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 4, 106
Ant thread 19 terminating.iter_counter = 5

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [4, 5], 12starting ant = 2

Explorationstarting ant = 3

avg = 0.000783182750583starting ant = 4

p = 0.001666666666667starting ant = 5

p = 0.000925916666667starting ant = 6

Ant 1 : [1, 3], 18starting ant = 7

Exploitationstarting ant = 8

Ant 0 : [4, 5, 3], 34starting ant = 9

Explorationstarting ant = 10

avg = 0.00067146431764starting ant = 11

p = 0.000757575757576starting ant = 12

p = 0.000925916508333starting ant = 13

Ant 2 : [2, 3], 18starting ant = 14

Explorationstarting ant = 15

avg = 0.000745839447557starting ant = 16

p = 0.001664999849999starting ant = 17

p = 0.00083333333325starting ant = 18

Ant 3 : [0, 4], 20starting ant = 19

Exploration
avg = 0.000806267094015
p = 0.00111111111111
p = 0.001541666666667
Ant 4 : [4, 5], 12
Exploitation
Ant 5 : [3, 4], 15
Exploration
avg = 0.00080657264957
p = 0.00111111111111
p = 0.001543194444444
Ant 6 : [4, 5], 12
Exploration
avg = 0.000775866867601
p = 0.000925925925926
p = 0.001233333333333
Ant 1 : [1, 3, 4], 33
Exploration
avg = 0.000803554954286
p = 0.001666666666667
p = 0.00102777768519
Ant 7 : [1, 3], 18
Exploitation
Ant 8 : [4, 5], 12
Exploration
avg = 0.000716787111599
p = 0.000832499925
p = 0.000925925925926
Ant 0 : [4, 5, 3, 2], 52
Exploration
avg = 0.000807808293895
p = 0.000832499925
p = 0.001027777777778
p = 0.001234555555556
Ant 9 : [3, 4], 15
Exploitation
Ant 10 : [1, 0], 10
Exploration
avg = 0.00080587667056
p = 0.000840909090909
p = 0.001388888888888
Ant 11 : [5, 4], 12
Exploration
avg = 0.000764172781056
p = 0.00166499984999
p = 0.000924999999992
Ant 12 : [0, 4], 20
Exploitation
Ant 13 : [5, 4], 12
Exploitation
Ant 2 : [2, 3, 4], 33
Exploration
avg = 0.000691836552694

p = 0.000757575757576
p = 0.0010277776836
Ant 14 : [2, 3], 18
Exploitation
Ant 15 : [4, 5], 12
Exploration
avg = 0.00084042534299
p = 0.00185
p = 0.00102879629537
Ant 16 : [1, 3], 18
Exploitation
Ant 17 : [5, 4], 12
Exploitation
Ant 18 : [5, 4], 12
Exploitation
Ant 3 : [0, 4, 5], 32
Exploration
avg = 0.000836740867785
p = 0.000840909090909
p = 0.001543209875
Ant 19 : [5, 4], 12
Exploration
avg = 0.000660123615982
p = 0.000724637680435
p = 0.000840909090909
Ant 4 : [4, 5, 3], 34
Exploitation
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [4, 5, 3], 34
Exploitation
Ant 1 : [1, 3, 4, 5], 45
Exploration
avg = 0.00080163847223
p = 0.00102777777778
p = 0.0012345679
Ant 7 : [1, 3, 4], 33
Exploitation
Ant 8 : [4, 5, 3], 34
Exploration
avg = 0.000656287853563
p = 0.000757575757576
Ant 0 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5], 27
Exploration
avg = 0.000539195180492
p = 0.000925916666667
Ant 10 : [1, 0, 4], 30
Exploitation
Ant 11 : [5, 4, 3], 27
Exploration
avg = 0.000886900225546
p = 0.00123333333333

p = 0.00154320987654
Ant 12 : [0, 4, 5], 32
Exploitation
Ant 13 : [5, 4, 3], 27
Exploitation
Ant 2 : [2, 3, 4, 5], 45
Exploration
avg = 0.000752819009341
p = 0.000832499925
p = 0.00123456790122
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 15 : [4, 5, 3], 34
Exploitation
Ant 16 : [1, 3, 4], 33
Exploration
avg = 0.000653278311966
p = 0.00123455555556
Ant 17 : [5, 4, 3], 27
Exploration
avg = 0.000653281367521
p = 0.00123456777778
Ant 18 : [5, 4, 3], 27
Exploration
avg = 0.000735802547777
p = 0.000841750841742
Ant 3 : [0, 4, 5, 3], 54
Exploitation
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000750737728883
p = 0.000832499925
p = 0.00102777777778
Ant 4 : [4, 5, 3, 2], 52
Exploration
avg = 0.000599861791006
p = 0.000641019121154
p = 0.000724637680435
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000751077235056
p = 0.000832499925
p = 0.0010287962963
Ant 6 : [4, 5, 3, 2], 52
Exploitation
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.00087267252295
p = 0.00154320987654
Ant 7 : [1, 3, 4, 5], 45
Exploitation
Ant 8 : [4, 5, 3, 2], 52
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84

Update called by 0Exploitation

Ant thread 0 terminating.Ant 9 : [3, 4, 5, 2], 50

Exploitation

Ant 10 : [1, 0, 4, 5], 42

Exploitation

Ant 11 : [5, 4, 3, 2], 45

Exploitation

Ant 12 : [0, 4, 5, 3], 54

Exploitation

Ant 13 : [5, 4, 3, 2], 45

Exploitation

Ant 2 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 14 : [2, 3, 4, 5], 45

Exploration

avg = 0.000751080664411

p = 0.000832499925

p = 0.00102880658436

Ant 15 : [4, 5, 3, 2], 52

Exploration

avg = 0.00087267252295

p = 0.00154320987654

Ant 16 : [1, 3, 4, 5], 45

Exploration

avg = 0.000751080664411

p = 0.000832499925

p = 0.00102880658436

Ant 17 : [5, 4, 3, 2], 45

Exploitation

Ant 18 : [5, 4, 3, 2], 45

Exploitation

Ant 3 : [0, 4, 5, 3, 2], 72

Exploration

avg = 0.000751080664411

p = 0.000832499925

p = 0.00102880658436

Ant 19 : [5, 4, 3, 2], 45

Exploration

avg = 0.00069795452023

p = 0.000840909090909

Ant 4 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.000698371186896

p = 0.000841742424242

Ant 5 : [3, 4, 5, 2, 1], 72

Exploitation

Ant 6 : [4, 5, 3, 2, 1], 74

Exploration

avg = 0.00055499994955

Ant 1 : [1, 3, 4, 5, 2, 0], 98

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00061954073499

p = 0.000805152898551

Ant 7 : [1, 3, 4, 5, 2], 68

Exploration

avg = 0.000729205975758

p = 0.000841750840909

Ant 8 : [4, 5, 3, 2, 1], 74

Exploitation

Ant 9 : [3, 4, 5, 2, 1], 72

Exploitation

Ant 10 : [1, 0, 4, 5, 3], 64

Exploitation

Ant 11 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.000930653254681

p = 0.00102880658436

Ant 12 : [0, 4, 5, 3, 2], 72

Exploitation

Ant 13 : [5, 4, 3, 2, 1], 67

Exploitation

Ant 2 : [2, 3, 4, 5, 1, 0], 81

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000572733483884

p = 0.00071153839634

Ant 14 : [2, 3, 4, 5, 1], 71

Exploitation

Ant 15 : [4, 5, 3, 2, 1], 74

Exploitation

Ant 16 : [1, 3, 4, 5, 2], 68

Exploration

avg = 0.000729205976179

p = 0.000841750841751

Ant 17 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.000729205976179

p = 0.000841750841751

Ant 18 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.000841750841751

Ant 3 : [0, 4, 5, 3, 2, 1], 94

Update called by 3Exploitation

Ant thread 3 terminating.Ant 19 : [5, 4, 3, 2, 1], 67

Exploration

avg = 0.00185185166667

Ant 4 : [4, 5, 3, 2, 1, 0], 84

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185183

Ant 6 : [4, 5, 3, 2, 1, 0], 84

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000616661110607

Ant 7 : [1, 3, 4, 5, 2, 0], 98

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [4, 5, 3, 2, 1, 0], 84

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [3, 4, 5, 2, 1, 0], 82

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00102880658436

Ant 10 : [1, 0, 4, 5, 3, 2], 82

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [5, 4, 3, 2, 1, 0], 77

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [0, 4, 5, 3, 2, 1], 94

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [5, 4, 3, 2, 1, 0], 77

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [2, 3, 4, 5, 1, 0], 81

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 5, 3, 2, 1, 0], 84

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 3, 4, 5, 2, 0], 98

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [5, 4, 3, 2, 1, 0], 77

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 5, 106
Ant thread 19 terminating.iter_counter = 6

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [4, 5], 12starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.000628442095799starting ant = 6

p = 0.000641019230182starting ant = 7

p = 0.000724637681152starting ant = 8

p = 0.000757575757576starting ant = 9

Ant 0 : [4, 5, 3], 34starting ant = 10

Explorationstarting ant = 11

avg = 0.000649198871673starting ant = 12

p = 0.000757575757576starting ant = 13

p = 0.000925916665819starting ant = 14

Ant 2 : [2, 3], 18starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [0, 1], 10starting ant = 17

Exploitationstarting ant = 18

Ant 1 : [1, 0, 4], 30starting ant = 19

Exploration

avg = 0.000778695940169
p = 0.00111111111111
p = 0.001541666666667
Ant 4 : [4, 5], 12
Exploration
avg = 0.000727214871913
p = 0.0007492499325
p = 0.000925925925926
p = 0.001111111111111
Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [4, 5], 12
Exploration
avg = 0.000793384642189
p = 0.00185
p = 0.000925925833325
Ant 7 : [1, 3], 18
Exploration
avg = 0.00077900455128
p = 0.00111111111111
p = 0.00154320972222
Ant 8 : [4, 5], 12
Exploration
avg = 0.000751659316358
p = 0.000925925925926
p = 0.00123333333333
Ant 9 : [3, 4], 15
Exploration
avg = 0.00067597259797
p = 0.0007492499325
p = 0.000925925925926
Ant 0 : [4, 5, 3, 2], 52
Exploration
avg = 0.000813755030895
p = 0.00185
p = 0.00102777777685
Ant 10 : [1, 3], 18
Exploration
avg = 0.000797198121081
p = 0.000840909090909
p = 0.00138888888888
Ant 11 : [5, 4], 12
Exploration
avg = 0.000776219196184
p = 0.00184831833198
p = 0.000924999999167
Ant 12 : [0, 4], 20
Exploitation
Ant 13 : [5, 4], 12
Exploitation
Ant 14 : [2, 3], 18
Exploitation
Ant 2 : [2, 3, 4], 33
Exploitation

Ant 15 : [4, 5], 12
Exploration
avg = 0.000813958734782
p = 0.00185
p = 0.00102879629629
Ant 16 : [1, 3], 18
Exploration
avg = 0.000554950964776
p = 0.00102880648148
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 17 : [5, 4], 12
Exploitation
Ant 18 : [5, 4], 12
Exploration
avg = 0.00102496597023
p = 0.00111111111111
p = 0.00154320987653
Ant 1 : [1, 0, 4, 5], 42
Exploitation
Ant 19 : [5, 4], 12
Exploitation
Ant 4 : [4, 5, 3], 34
Exploration
avg = 0.000695977949905
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [4, 5, 3], 34
Exploitation
Ant 7 : [1, 3, 4], 33
Exploitation
Ant 8 : [4, 5, 3], 34
Exploration
avg = 0.000695977949905
p = 0.00154320987654
Ant 9 : [3, 4, 5], 27
Exploitation
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000778033266952
p = 0.00102777777778
p = 0.0012345679
Ant 10 : [1, 3, 4], 33
Exploration
avg = 0.000587953258544
p = 0.00111111111111
Ant 11 : [5, 4, 3], 27
Exploitation
Ant 12 : [0, 4, 5], 32
Exploration
avg = 0.000618508814103
p = 0.00123333333333
Ant 13 : [5, 4, 3], 27

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Exploitation
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.0007877778292181
p = 0.00154320987654
Ant 2 : [2, 3, 4, 5], 45
Exploitation
Ant 15 : [4, 5, 3], 34
Exploration
avg = 0.00077803326726
p = 0.00102777777778
p = 0.00123456790123
Ant 16 : [1, 3, 4], 33
Exploration
avg = 0.000919797044519
p = 0.00102777777778
p = 0.00123456790123
Ant 3 : [0, 1, 3, 4], 43
Exploitation
Ant 17 : [5, 4, 3], 27
Exploitation
Ant 18 : [5, 4, 3], 27
Exploitation
Ant 1 : [1, 0, 4, 5, 3], 64
Exploitation
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 4 : [4, 5, 3, 2], 52
Exploration
avg = 0.000585397541873
p = 0.000641019230182
p = 0.000724637681152
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000710262721427
p = 0.0007492499325
p = 0.0010287962963
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.000836845599873
p = 0.00154320987654
Ant 7 : [1, 3, 4, 5], 45
Exploitation
Ant 8 : [4, 5, 3, 2], 52
Exploitation
Ant 9 : [3, 4, 5, 2], 50
Exploration
avg = 0.00185
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000836845599873

p = 0.00154320987654

```



```

Ant 10 : [1, 3, 4, 5], 45
Exploitation
Ant 11 : [5, 4, 3, 2], 45
Exploration
avg = 0.000762638333156
p = 0.000805144927536
p = 0.000841750841751
Ant 12 : [0, 4, 5, 3], 54
Exploration
avg = 0.000710266150779
p = 0.0007492499325
p = 0.00102880658435
Ant 13 : [5, 4, 3, 2], 45
Exploration
avg = 0.000787778292181
p = 0.00154320987654
Ant 14 : [2, 3, 4, 5], 45
Exploitation
Ant 2 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000710266150782
p = 0.0007492499325
p = 0.00102880658436
Ant 15 : [4, 5, 3, 2], 52
Exploitation
Ant 16 : [1, 3, 4, 5], 45
Exploitation
Ant 3 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000710266150782
p = 0.0007492499325
p = 0.00102880658436
Ant 17 : [5, 4, 3, 2], 45
Exploitation
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000710266150782

p = 0.0007492499325
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 4 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000698653128538
p = 0.000841750757576
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000597840320911

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p = 0.000805144927536
Ant 7 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000698653170205
p = 0.000841750840909
Ant 8 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000698653170621
p = 0.000841750841742
Ant 9 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 10 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000698653170625
p = 0.000841750841751
Ant 11 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 12 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000698653170625
p = 0.000841750841751
Ant 13 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 14 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.001851833333333
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploitation

Ant thread 2 terminating.Ant 15 : [4, 5, 3, 2, 1], 74

Exploration
avg = 0.000597844346273
p = 0.000805152978261
Ant 16 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 3 : [0, 1, 3, 4, 5, 2], 78
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000698653170625

p = 0.000841750841751
Ant 17 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 18 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000698653170625
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.00185185166667
Ant 4 : [4, 5, 3, 2, 1, 0], 84
Update called by 4Exploitation

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Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82
Update called by 5Exploitation
Ant thread 5 terminating.Ant 6 : [4, 5, 3, 2, 1, 0], 84
ExplorationUpdate called by 6
avg = 0.0005555554995Ant thread 6 terminating.
Ant 7 : [1, 3, 4, 5, 2, 0], 98
Update called by 7Exploration
Ant thread 7 terminating.avg = 0.00185185185185
Ant 8 : [4, 5, 3, 2, 1, 0], 84
Update called by 8Exploitation
Ant thread 8 terminating.Ant 9 : [3, 4, 5, 2, 1, 0], 82
Update called by 9Exploration
Ant thread 9 terminating.avg = 0.0006166666666106
Ant 10 : [1, 3, 4, 5, 2, 0], 98
Update called by 10Exploitation
Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77
Update called by 11Exploration
Ant thread 11 terminating.avg = 0.000841750841751
Ant 12 : [0, 4, 5, 3, 2, 1], 94
Update called by 12Exploitation
Ant thread 12 terminating.Ant 13 : [5, 4, 3, 2, 1, 0], 77
Update called by 13Exploration
Ant thread 13 terminating.avg = 0.00185185185185
Ant 14 : [2, 3, 4, 5, 1, 0], 81
Update called by 14Exploitation
Ant thread 14 terminating.Ant 15 : [4, 5, 3, 2, 1, 0], 84
Update called by 15Exploration
Ant thread 15 terminating.avg = 0.000617277777772
Ant 16 : [1, 3, 4, 5, 2, 0], 98
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 6, 106
Ant thread 19 terminating.iter_counter = 7

starting ant = 0
Explorationstarting ant = 1

avg = 0.000723326346152starting ant = 2

p = 0.00111111111111starting ant = 3

p = 0.00138888888889starting ant = 4

Ant 0 : [4, 5], 12starting ant = 5

Explorationstarting ant = 6

avg = 0.000732898046305starting ant = 7

p = 0.00166666666667starting ant = 8

p = 0.000925925925starting ant = 9

Ant 1 : [1, 3], 18starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [2, 3], 18starting ant = 12

Explorationstarting ant = 13

avg = 0.000698762276714starting ant = 14

p = 0.00166348649878starting ant = 15

p = 0.000833324999993starting ant = 16

Ant 3 : [0, 4], 20starting ant = 17

Explorationstarting ant = 18

avg = 0.000753881901707starting ant = 19

p = 0.00111111111111
p = 0.001541666666667
Ant 4 : [4, 5], 12
Exploitation
Ant 0 : [4, 5, 3], 34
Exploitation
Ant 5 : [3, 4], 15
Exploration
avg = 0.000754187457263
p = 0.00111111111111
p = 0.001543194444444
Ant 6 : [4, 5], 12
Exploitation
Ant 7 : [1, 0], 10
Exploitation
Ant 8 : [4, 5], 12
Exploration
avg = 0.000719678569907
p = 0.000925925925926
p = 0.001233333333333
Ant 9 : [3, 4], 15
Exploitation
Ant 1 : [1, 3, 4], 33
Exploitation
Ant 10 : [1, 0], 10
Exploitation
Ant 11 : [5, 4], 12
Exploration
avg = 0.000668425342014
p = 0.00067432493925
p = 0.001234567777778
Ant 2 : [2, 3, 4], 33
Exploration
avg = 0.000717097260049
p = 0.00166348649878
p = 0.000924999916667
Ant 12 : [0, 4], 20
Exploration
avg = 0.000819942962357
p = 0.000840909090909
p = 0.001541666666667
Ant 13 : [5, 4], 12
Exploration
avg = 0.000649432146935
p = 0.000757575757576
p = 0.00102777768518
Ant 14 : [2, 3], 18
Exploitation
Ant 15 : [4, 5], 12
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 3 : [0, 4, 5], 32

Exploitation
Ant 17 : [5, 4], 12
Exploration
avg = 0.000820251573468
p = 0.000840909090909
p = 0.00154320972222
Ant 18 : [5, 4], 12
Exploitation
Ant 19 : [5, 4], 12
Exploration
avg = 0.000639512036279
p = 0.000641019230192
p = 0.000724637681159
p = 0.000840909090909
Ant 4 : [4, 5, 3], 34
Exploitation
Ant 0 : [4, 5, 3, 2], 52
Exploitation
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [4, 5, 3], 34
Exploration
avg = 0.000480729137656
p = 0.000925916665833
Ant 7 : [1, 0, 4], 30
Exploration
avg = 0.000639722452946
p = 0.000641019230192
p = 0.000724637681159
p = 0.000841750757576
Ant 8 : [4, 5, 3], 34
Exploitation
Ant 9 : [3, 4, 5], 27
Exploration
avg = 0.000804601369104
p = 0.00154320987654
Ant 1 : [1, 3, 4, 5], 45
Exploration
avg = 0.000480731429529
p = 0.000925925833325
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000556935710467
p = 0.00111111111111
Ant 11 : [5, 4, 3], 27
Exploration
avg = 0.000760440792181
p = 0.00154320987654
Ant 2 : [2, 3, 4, 5], 45
Exploitation
Ant 12 : [0, 4, 5], 32
Exploitation
Ant 13 : [5, 4, 3], 27
Exploitation

Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.000639722473779
p = 0.000641019230192
p = 0.000724637681159
p = 0.000841750840909
Ant 15 : [4, 5, 3], 34
Exploration
avg = 0.000480731452448
p = 0.000925925925
Ant 16 : [1, 0, 4], 30
Exploration
avg = 0.000735802584365
p = 0.000841750841742
Ant 3 : [0, 4, 5, 3], 54
Exploration
avg = 0.000587796821581
p = 0.00123455555556
Ant 17 : [5, 4, 3], 27
Exploitation
Ant 18 : [5, 4, 3], 27
Exploration
avg = 0.000587799907692
p = 0.0012345679
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000673190152988
p = 0.00067432493925
p = 0.00102777777778
Ant 4 : [4, 5, 3, 2], 52
Exploitation
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000572379684736
p = 0.000641019230192
p = 0.000724637681159
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.00105209900284
p = 0.00123456790122
p = 0.00154320987654
Ant 7 : [1, 0, 4, 5], 42
Exploration
avg = 0.000673533054222
p = 0.00067432493925
p = 0.00102880648148
Ant 8 : [4, 5, 3, 2], 52
Exploitation
Ant 9 : [3, 4, 5, 2], 50
Exploitation
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration

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avg = 0.00105209900284
p = 0.00123456790122
p = 0.00154320987654
Ant 10 : [1, 0, 4, 5], 42
Exploitation
Ant 11 : [5, 4, 3, 2], 45
Exploration
avg = 0.000496250686525
p = 0.000641019230192
Ant 2 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 12 : [0, 4, 5, 3], 54
Exploitation
Ant 13 : [5, 4, 3, 2], 45
Exploration
avg = 0.000760440792181
p = 0.00154320987654
Ant 14 : [2, 3, 4, 5], 45
Exploitation
Ant 15 : [4, 5, 3, 2], 52
Exploitation
Ant 16 : [1, 0, 4, 5], 42
Exploitation
Ant 3 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000673533088516
p = 0.00067432493925
p = 0.00102880658436
Ant 17 : [5, 4, 3, 2], 45
Exploration
avg = 0.000673533088516
p = 0.00067432493925
p = 0.00102880658436
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000698232295455
p = 0.000840909090909
Ant 4 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.00185185166667
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000698648962121

p = 0.000841742424242
Ant 5 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000698653128788
p = 0.000841750757576
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration

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avg = 0.000823451870151
p = 0.000841750841751
Ant 7 : [1, 0, 4, 5, 3], 64
Exploitation
Ant 8 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.00055555555
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [1, 0, 4, 5, 3], 64

Exploration
avg = 0.000729208753931
p = 0.000841750841751
Ant 11 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.00185185185
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000851565761806

p = 0.00102880658436
Ant 12 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000729208753931
p = 0.000841750841751
Ant 13 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 14 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000729208753931
p = 0.000841750841751
Ant 15 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 16 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000841750841751
Ant 3 : [0, 4, 5, 3, 2, 1], 94
Update called by 3Exploitation

Ant thread 3 terminating.Ant 17 : [5, 4, 3, 2, 1], 67

Exploitation
Ant 18 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000729208753931
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 4 : [4, 5, 3, 2, 1, 0], 84

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185185

Ant 6 : [4, 5, 3, 2, 1, 0], 84

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [1, 0, 4, 5, 3, 2], 82

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [4, 5, 3, 2, 1, 0], 84

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 4, 5, 2, 1, 0], 82

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00102880658436

Ant 10 : [1, 0, 4, 5, 3, 2], 82

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000841750841751

Ant 12 : [0, 4, 5, 3, 2, 1], 94

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [5, 4, 3, 2, 1, 0], 77

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 5, 1, 0], 81

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00185185185185

Ant 15 : [4, 5, 3, 2, 1, 0], 84

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00102880658436

Ant 16 : [1, 0, 4, 5, 3, 2], 82
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 7, 106
Ant thread 19 terminating.iter_counter = 8

starting ant = 0
Explorationstarting ant = 1

avg = 0.000700993711536starting ant = 2

p = 0.00111111111111starting ant = 3

p = 0.00138888888889starting ant = 4

Ant 0 : [4, 5], 12starting ant = 5

Explorationstarting ant = 6

avg = 0.000711274908506starting ant = 7

p = 0.00166666666667starting ant = 8

p = 0.000924999999992starting ant = 9

Ant 1 : [1, 3], 18starting ant = 10

Explorationstarting ant = 11

avg = 0.000610823807128starting ant = 12

p = 0.000757575757576starting ant = 13

p = 0.000925916665833starting ant = 14

Ant 2 : [2, 3], 18starting ant = 15

Explorationstarting ant = 16

avg = 0.000645554215709starting ant = 17

p = 0.00149713784891starting ant = 18

p = 0.0008333333333325starting ant = 19

Ant 3 : [0, 4], 20

Exploration

avg = 0.000731549267092

p = 0.001111111111111

p = 0.001541666666667

Ant 4 : [4, 5], 12

Exploitation

Ant 0 : [4, 5, 3], 34

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [4, 5], 12

Exploration

avg = 0.000731828612212

p = 0.001666666666667

p = 0.00102776851852

Ant 7 : [1, 3], 18

Exploitation

Ant 8 : [4, 5], 12

Exploitation

Ant 9 : [3, 4], 15

Exploitation

Ant 1 : [1, 3, 4], 33

Exploration

avg = 0.000732034149249

p = 0.001666666666667

p = 0.0010287962037

Ant 10 : [1, 3], 18

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000663887549044

p = 0.00149713784891

p = 0.000925

Ant 12 : [0, 4], 20

Exploration

avg = 0.000812913305007

p = 0.000840909090909

p = 0.001541666666667

Ant 13 : [5, 4], 12

Exploitation

Ant 14 : [2, 3], 18

Exploitation

Ant 2 : [2, 3, 4], 33

Exploration

avg = 0.000731857908758

p = 0.001111111111111

p = 0.001543209875

Ant 15 : [4, 5], 12

Exploration

avg = 0.000732036204619

p = 0.001666666666667
p = 0.00102880648056
Ant 16 : [1, 3], 18
Exploitation
Ant 17 : [5, 4], 12
Exploration
avg = 0.000813221916118
p = 0.000840909090909
p = 0.00154320972222
Ant 18 : [5, 4], 12
Exploitation
Ant 19 : [5, 4], 12
Exploitation
Ant 3 : [0, 4, 5], 32
Exploitation
Ant 4 : [4, 5, 3], 34
Exploitation
Ant 0 : [4, 5, 3, 2], 52
Exploration
avg = 0.000637044608559
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000630933297925
p = 0.000641019230192
p = 0.000724637608696
p = 0.000841742424242
Ant 6 : [4, 5, 3], 34
Exploration
avg = 0.000737668365925
p = 0.001027777777778
p = 0.0012345679
Ant 7 : [1, 3, 4], 33
Exploration
avg = 0.000630935381259
p = 0.000641019230192
p = 0.000724637608696
p = 0.000841750757576
Ant 8 : [4, 5, 3], 34
Exploitation
Ant 9 : [3, 4, 5], 27
Exploitation
Ant 1 : [1, 3, 4, 5], 45
Exploration
avg = 0.000737668366231
p = 0.001027777777778
p = 0.00123456790122
Ant 10 : [1, 3, 4], 33
Exploration
avg = 0.000529019917198
p = 0.001111111111111
Ant 11 : [5, 4, 3], 27
Exploitation
Ant 12 : [0, 4, 5], 32

Exploitation
Ant 13 : [5, 4, 3], 27
Exploration
avg = 0.000632447033121
p = 0.00123456790123
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 2 : [2, 3, 4, 5], 45
Exploration
avg = 0.000630935402092
p = 0.000641019230192
p = 0.000724637608696
p = 0.000841750840909
Ant 15 : [4, 5, 3], 34
Exploration
avg = 0.000737668366234
p = 0.00102777777778
p = 0.00123456790123
Ant 16 : [1, 3, 4], 33
Exploration
avg = 0.000559881028312
p = 0.00123455555556
Ant 17 : [5, 4, 3], 27
Exploitation
Ant 18 : [5, 4, 3], 27
Exploitation
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 3 : [0, 4, 5, 3], 54
Exploitation
Ant 4 : [4, 5, 3, 2], 52
Exploitation
Ant 0 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.000775581561412
p = 0.00154320987654
Ant 7 : [1, 3, 4, 5], 45
Exploitation
Ant 8 : [4, 5, 3, 2], 52
Exploitation
Ant 9 : [3, 4, 5, 2], 50
Exploitation
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000775581561412
p = 0.00154320987654
Ant 10 : [1, 3, 4, 5], 45
Exploitation
Ant 11 : [5, 4, 3, 2], 45
Exploitation

Ant 12 : [0, 4, 5, 3], 54
Exploration
avg = 0.000640473332473
p = 0.00102880658435
Ant 13 : [5, 4, 3, 2], 45
Exploitation
Ant 14 : [2, 3, 4, 5], 45
Exploitation
Ant 2 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 15 : [4, 5, 3, 2], 52
Exploitation
Ant 16 : [1, 3, 4, 5], 45
Exploitation
Ant 17 : [5, 4, 3, 2], 45
Exploitation
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 3 : [0, 4, 5, 3, 2], 72
Exploitation
Ant 4 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000698371211871

p = 0.000841742424242
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000560743413561
p = 0.000805152898551
Ant 7 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000698375420205
p = 0.000841750840909
Ant 8 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000698375420621
p = 0.000841750841742
Ant 9 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.0005549999995
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000560743453416

p = 0.000805152978261
Ant 10 : [1, 3, 4, 5, 2], 68

Exploitation
Ant 11 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 12 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000729205976428
p = 0.000841750841751
Ant 13 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000513936163001
p = 0.00071153839743
Ant 14 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00185
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000729205976428

p = 0.000841750841751
Ant 15 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000560743453815
p = 0.000805152979058
Ant 16 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 17 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 18 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000841750841751
Ant 3 : [0, 4, 5, 3, 2, 1], 94
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.001851833333333

Ant 4 : [4, 5, 3, 2, 1, 0], 84
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185

Ant 6 : [4, 5, 3, 2, 1, 0], 84
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000616661111106

Ant 7 : [1, 3, 4, 5, 2, 0], 98
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 5, 3, 2, 1, 0], 84
Update called by 8Exploration
Ant thread 8 terminating.avg = 0.00185185185185
Ant 9 : [3, 4, 5, 2, 1, 0], 82
Update called by 9Exploration
Ant thread 9 terminating.avg = 0.000617277722222
Ant 10 : [1, 3, 4, 5, 2, 0], 98
Update called by 10Exploitation
Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77
Update called by 11Exploitation
Ant thread 11 terminating.Ant 12 : [0, 4, 5, 3, 2, 1], 94
Update called by 12Exploration
Ant thread 12 terminating.avg = 0.00185185185185
Ant 13 : [5, 4, 3, 2, 1, 0], 77
Update called by 13Exploration
Ant thread 13 terminating.avg = 0.00185185185185
Ant 14 : [2, 3, 4, 5, 1, 0], 81
Update called by 14Exploration
Ant thread 14 terminating.avg = 0.00185185185185
Ant 15 : [4, 5, 3, 2, 1, 0], 84
Update called by 15Exploitation
Ant thread 15 terminating.Ant 16 : [1, 3, 4, 5, 2, 0], 98
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploration
Ant thread 17 terminating.avg = 0.00185185185185
Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploitation
Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 8, 106
Ant thread 19 terminating.iter_counter = 9

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [4, 5], 12starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [4, 5, 3], 34starting ant = 6

Explorationstarting ant = 7

avg = 0.000594622385972starting ant = 8

p = 0.000757575757576starting ant = 9

p = 0.000925916665833starting ant = 10

Ant 2 : [2, 3], 18starting ant = 11

Explorationstarting ant = 12

avg = 0.00059766379414starting ant = 13

p = 0.00134742406402starting ant = 14

p = 0.000833325starting ant = 15

Ant 3 : [0, 4], 20starting ant = 16

Explorationstarting ant = 17

avg = 0.000433142455837starting ant = 18

p = 0.000924999916667starting ant = 19

Ant 1 : [1, 0, 4], 30

Exploration

avg = 0.000711449895938

p = 0.00111111111111

p = 0.00154166666667

Ant 4 : [4, 5], 12

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 0 : [4, 5, 3, 2], 52

Exploration

avg = 0.000711755451494

p = 0.00111111111111
p = 0.00154319444444
Ant 6 : [4, 5], 12
Exploitation
Ant 7 : [1, 0], 10
Exploration
avg = 0.000711758507049
p = 0.00111111111111
p = 0.00154320972222
Ant 8 : [4, 5], 12
Exploitation
Ant 9 : [3, 4], 15
Exploration
avg = 0.000729199269322
p = 0.00185183333333
p = 0.000925925924992
Ant 10 : [1, 3], 18
Exploration
avg = 0.00060006344092
p = 0.00123455555556
Ant 2 : [2, 3, 4], 33
Exploration
avg = 0.00077603108537
p = 0.000840909090909
p = 0.00138888888888
Ant 11 : [5, 4], 12
Exploration
avg = 0.000616182127306
p = 0.00134742406402
p = 0.000925916665833
Ant 12 : [0, 4], 20
Exploration
avg = 0.000806586640928
p = 0.000840909090909
p = 0.00154166666667
Ant 13 : [5, 4], 12
Exploitation
Ant 14 : [2, 3], 18
Exploitation
Ant 15 : [4, 5], 12
Exploitation
Ant 3 : [0, 4, 5], 32
Exploration
avg = 0.000749569639878
p = 0.00185183333333
p = 0.00102777777777
Ant 16 : [1, 3], 18
Exploitation
Ant 17 : [5, 4], 12
Exploitation
Ant 18 : [5, 4], 12
Exploitation
Ant 19 : [5, 4], 12
Exploitation

Ant 1 : [1, 0, 4, 5], 42
Exploitation
Ant 4 : [4, 5, 3], 34
Exploration
avg = 0.000611920394617
p = 0.00154320987654
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000656565656285
p = 0.000757575757576
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000623024967827
p = 0.000641019230192
p = 0.000724637681159
p = 0.000841742424242
Ant 6 : [4, 5, 3], 34
Exploitation
Ant 7 : [1, 0, 4], 30
Exploitation
Ant 8 : [4, 5, 3], 34
Exploration
avg = 0.000611920394617
p = 0.00154320987654
Ant 9 : [3, 4, 5], 27
Exploitation
Ant 10 : [1, 3, 4], 33
Exploitation
Ant 2 : [2, 3, 4, 5], 45
Exploration
avg = 0.000503895703256
p = 0.001111111111111
Ant 11 : [5, 4, 3], 27
Exploitation
Ant 12 : [0, 4, 5], 32
Exploration
avg = 0.000534451258814
p = 0.001233333333333
Ant 13 : [5, 4, 3], 27
Exploration
avg = 0.000600066527031
p = 0.0012345679
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.000623027071994
p = 0.000641019230192
p = 0.000724637681159
p = 0.000841750840909
Ant 15 : [4, 5, 3], 34
Exploitation
Ant 3 : [0, 4, 5, 3], 54
Exploitation
Ant 16 : [1, 3, 4], 33
Exploration

```
avg = 0.00053475681437
p = 0.00123455555556
Ant 17 : [5, 4, 3], 27
Exploitation
Ant 18 : [5, 4, 3], 27
Exploration
avg = 0.000534759900481
p = 0.0012345679
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000783194261455
p = 0.000841750841751
Ant 1 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000610376616513
p = 0.00102777777778
Ant 4 : [4, 5, 3, 2], 52
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000610716122686
```

```
p = 0.0010287962963
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.00102812611823
p = 0.00123456790122
p = 0.00154320987654
Ant 7 : [1, 0, 4, 5], 42
Exploration
avg = 0.000610719517747
p = 0.00102880648148
Ant 8 : [4, 5, 3, 2], 52
Exploitation
Ant 9 : [3, 4, 5, 2], 50
Exploration
avg = 0.000749463734489
p = 0.00154320987654
Ant 10 : [1, 3, 4, 5], 45
Exploitation
Ant 2 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000610719551698
p = 0.00102880658333
Ant 11 : [5, 4, 3, 2], 45
Exploitation
Ant 12 : [0, 4, 5, 3], 54
Exploitation
Ant 13 : [5, 4, 3, 2], 45
Exploration
avg = 0.000713693667181
```

p = 0.00154320987654
Ant 14 : [2, 3, 4, 5], 45
Exploitation
Ant 15 : [4, 5, 3, 2], 52
Exploitation
Ant 3 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000749463734489
p = 0.00154320987654
Ant 16 : [1, 3, 4, 5], 45
Exploitation
Ant 17 : [5, 4, 3, 2], 45
Exploitation
Ant 18 : [5, 4, 3, 2], 45
Exploration
avg = 0.000610719552041
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 1 : [1, 0, 4, 5, 3, 2], 82
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000698232322952

p = 0.000840909090909
Ant 4 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000823447884644
p = 0.000841750841751
Ant 7 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000698653197952
p = 0.000841750840909
Ant 8 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000544922731625
p = 0.000805144927536
Ant 10 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.00185185166667
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [5, 4, 3, 2, 1], 67

Exploitation
Ant 12 : [0, 4, 5, 3, 2], 72
Exploration

avg = 0.000698653198373
p = 0.000841750841751
Ant 13 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 14 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000698653198373
p = 0.000841750841751
Ant 15 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 3 : [0, 4, 5, 3, 2, 1], 94
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000544926717133

p = 0.000805152898551
Ant 16 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000698653198373
p = 0.000841750841751
Ant 17 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 18 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000698653198373
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 4 : [4, 5, 3, 2, 1, 0], 84
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

ExplorationUpdate called by 5

avg = 0.00185185185185Ant thread 5 terminating.

Ant 6 : [4, 5, 3, 2, 1, 0], 84
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00102880658436

Ant 7 : [1, 0, 4, 5, 3, 2], 82
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [4, 5, 3, 2, 1, 0], 84
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [3, 4, 5, 2, 1, 0], 82
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000555555554995

Ant 10 : [1, 3, 4, 5, 2, 0], 98
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [0, 4, 5, 3, 2, 1], 94
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [5, 4, 3, 2, 1, 0], 77
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 5, 1, 0], 81
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 5, 3, 2, 1, 0], 84
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000616666666661

Ant 16 : [1, 3, 4, 5, 2, 0], 98
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 9, 106
Ant thread 19 terminating.
 iter_counter = 10
 starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [4, 5], 12starting ant = 2

Explorationstarting ant = 3

avg = 0.000674799342558starting ant = 4

p = 0.00166666666667starting ant = 5
p = 0.000925916666667starting ant = 6
Ant 1 : [1, 3], 18starting ant = 7
Explorationstarting ant = 8
avg = 0.000594865787586starting ant = 9
p = 0.000641019230192starting ant = 10
p = 0.000724637680435starting ant = 11
p = 0.000757575757576starting ant = 12
Ant 0 : [4, 5, 3], 34starting ant = 13
Explorationstarting ant = 14
avg = 0.000579939995944starting ant = 15
p = 0.000757575757576starting ant = 16
p = 0.000925916665833starting ant = 17
Ant 2 : [2, 3], 18starting ant = 18
Exploitationstarting ant = 19
Ant 3 : [0, 1], 10
Exploitation
Ant 4 : [4, 5], 12
Exploitation
Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [4, 5], 12
Exploitation
Ant 1 : [1, 3, 4], 33
Exploration
avg = 0.000695171546262
p = 0.00166666666667
p = 0.00102777768519
Ant 7 : [1, 3], 18
Exploration
avg = 0.000693669073011
p = 0.00111111111111
p = 0.00154320972222
Ant 8 : [4, 5], 12
Exploration
avg = 0.000641921973759
p = 0.000925925925926
p = 0.00123455555556

Ant 9 : [3, 4], 15
Exploration
avg = 0.000695375268299
p = 0.001666666666667
p = 0.00102879629537
Ant 10 : [1, 3], 18
Exploitation
Ant 11 : [5, 4], 12
Exploration
avg = 0.000681121279685
p = 0.00184546014991
p = 0.00083333333325
Ant 12 : [0, 4], 20
Exploitation
Ant 0 : [4, 5, 3, 2], 52
Exploitation
Ant 13 : [5, 4], 12
Exploration
avg = 0.000600312199813
p = 0.000757575757576
p = 0.00102777768518
Ant 14 : [2, 3], 18
Exploitation
Ant 15 : [4, 5], 12
Exploration
avg = 0.000695377305519
p = 0.001666666666667
p = 0.00102880648147
Ant 16 : [1, 3], 18
Exploration
avg = 0.000801198185625
p = 0.000840909090909
p = 0.00154319444444
Ant 17 : [5, 4], 12
Exploration
avg = 0.000570924041272
p = 0.00123456777778
Ant 2 : [2, 3, 4], 33
Exploitation
Ant 18 : [5, 4], 12
Exploration
avg = 0.000801201271736
p = 0.000840909090909
p = 0.001543209875
Ant 19 : [5, 4], 12
Exploration
avg = 0.000452554990698
p = 0.00102880658333
Ant 3 : [0, 1, 3], 28
Exploitation
Ant 4 : [4, 5, 3], 34
Exploration
avg = 0.000589308602065
p = 0.00154320987653

Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [4, 5, 3], 34
Exploitation
Ant 1 : [1, 3, 4, 5], 45
Exploitation
Ant 7 : [1, 3, 4], 33
Exploration
avg = 0.000615909537586
p = 0.000641019230192
p = 0.000724637680435
p = 0.000841750757576
Ant 8 : [4, 5, 3], 34
Exploration
avg = 0.000589308602068
p = 0.00154320987654
Ant 9 : [3, 4, 5], 27
Exploration
avg = 0.0007049727964
p = 0.001027777777778
p = 0.00123456790122
Ant 10 : [1, 3, 4], 33
Exploitation
Ant 11 : [5, 4, 3], 27
Exploration
avg = 0.000807961266652
p = 0.001233333333333
p = 0.00154320987654
Ant 12 : [0, 4, 5], 32
Exploration
avg = 0.000656562878788
p = 0.000757575757576
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000511839466266
p = 0.001233333333333
Ant 13 : [5, 4, 3], 27
Exploration
avg = 0.000570924072136
p = 0.00123456790123
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 15 : [4, 5, 3], 34
Exploration
avg = 0.000704972796403
p = 0.001027777777778
p = 0.00123456790123
Ant 16 : [1, 3, 4], 33
Exploitation
Ant 17 : [5, 4, 3], 27
Exploration
avg = 0.000693764629681
p = 0.00154320987654
Ant 2 : [2, 3, 4, 5], 45

```
Exploitation
Ant 18 : [5, 4, 3], 27
Exploitation
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000862819067247
p = 0.001027777777778
p = 0.00123456790123
Ant 3 : [0, 1, 3, 4], 43
Exploration
avg = 0.000583598214121
p = 0.001027777777778
Ant 4 : [4, 5, 3, 2], 52
Exploitation
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000583937720294
p = 0.0010287962963
Ant 6 : [4, 5, 3, 2], 52
Exploitation
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000725957690258
p = 0.00154320987654
Ant 7 : [1, 3, 4, 5], 45
Exploitation
Ant 8 : [4, 5, 3, 2], 52
Exploitation
Ant 9 : [3, 4, 5, 2], 50
Exploration
avg = 0.000725957690258
p = 0.00154320987654
Ant 10 : [1, 3, 4, 5], 45
Exploitation
Ant 11 : [5, 4, 3, 2], 45
Exploitation
Ant 12 : [0, 4, 5, 3], 54
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000583941149645

p = 0.00102880658435
Ant 13 : [5, 4, 3, 2], 45
Exploration
avg = 0.000693764629681
p = 0.00154320987654
Ant 14 : [2, 3, 4, 5], 45
Exploration
avg = 0.000583941149649
p = 0.00102880658436
Ant 15 : [4, 5, 3, 2], 52
Exploration
```

```
avg = 0.000725957690258
p = 0.00154320987654
Ant 16 : [1, 3, 4, 5], 45
Exploitation
Ant 17 : [5, 4, 3, 2], 45
Exploration
avg = 0.000448624856168
p = 0.000641019230192
Ant 2 : [2, 3, 4, 5, 1], 71
Exploitation
avg = 0.000583941149649
p = 0.00102880658436
Ant 18 : [5, 4, 3, 2], 45
Exploration
avg = 0.000583941149649
p = 0.00102880658436
Ant 19 : [5, 4, 3, 2], 45
Exploitation
Ant 3 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000698229545455
p = 0.000840909090909
Ant 4 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.00055555
Ant 1 : [1, 3, 4, 5, 2, 0], 98
ExploitationUpdate called by 1

Ant 7 : [1, 3, 4, 5, 2], 68Ant thread 1 terminating.
```

```
Exploitation
Ant 8 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000530691730202
p = 0.000805152978261
Ant 10 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 11 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000760194732538
p = 0.00102880658436
Ant 12 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000729208726431
p = 0.000841750841751
Ant 13 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000483884439786
```

p = 0.00071153839743
Ant 14 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 15 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.0005306917306
p = 0.000805152979058
Ant 16 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 17 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploitation

Ant thread 2 terminating.Ant 18 : [5, 4, 3, 2, 1], 67

Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 3 : [0, 1, 3, 4, 5, 2], 78
ExploitationUpdate called by 3

Ant 4 : [4, 5, 3, 2, 1, 0], 84Ant thread 3 terminating.

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185

Ant 6 : [4, 5, 3, 2, 1, 0], 84
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [1, 3, 4, 5, 2, 0], 98

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 5, 3, 2, 1, 0], 84

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [3, 4, 5, 2, 1, 0], 82
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000617277777222

Ant 10 : [1, 3, 4, 5, 2, 0], 98
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77

Update called by 11Exploration
Ant thread 11 terminating.avg = 0.000841750841751
Ant 12 : [0, 4, 5, 3, 2, 1], 94
Update called by 12Exploitation
Ant thread 12 terminating.Ant 13 : [5, 4, 3, 2, 1, 0], 77
ExploitationUpdate called by 13
Ant 14 : [2, 3, 4, 5, 1, 0], 81Ant thread 13 terminating.
Update called by 14Exploration
Ant thread 14 terminating.avg = 0.00185185185185
Ant 15 : [4, 5, 3, 2, 1, 0], 84
Update called by 15Exploitation
Ant thread 15 terminating.Ant 16 : [1, 3, 4, 5, 2, 0], 98
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploration
Ant thread 17 terminating.avg = 0.00185185185185
Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploitation
Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 10, 106
Ant thread 19 terminating.iter_counter = 11

starting ant = 0
Explorationstarting ant = 1

avg = 0.000646524415709starting ant = 2

p = 0.00111111111111starting ant = 3

p = 0.00138888888889starting ant = 4

Ant 0 : [4, 5], 12starting ant = 5

Explorationstarting ant = 6

avg = 0.000659172926819starting ant = 7

p = 0.00166666666667starting ant = 8
p = 0.000925925925917starting ant = 9
Ant 1 : [1, 3], 18starting ant = 10
Explorationstarting ant = 11
avg = 0.000566727955818starting ant = 12
p = 0.000757575757576starting ant = 13
p = 0.000925916665833starting ant = 14
Ant 2 : [2, 3], 18starting ant = 15
Explorationstarting ant = 16
avg = 0.000629509151865starting ant = 17
p = 0.00166091413492starting ant = 18
p = 0.00083249999992starting ant = 19

Ant 3 : [0, 4], 20
Exploitation
Ant 4 : [4, 5], 12
Exploration
avg = 0.000588460025714
p = 0.000641019230192
p = 0.000724637681159
p = 0.000757575757576
Ant 0 : [4, 5, 3], 34
Exploitation
Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [4, 5], 12
Exploitation
Ant 7 : [1, 0], 10
Exploration
avg = 0.000677388582376
p = 0.00111111111111
p = 0.00154320972222
Ant 8 : [4, 5], 12
Exploitation
Ant 9 : [3, 4], 15
Exploitation
Ant 1 : [1, 3, 4], 33
Exploration
avg = 0.000716209963858
p = 0.00185
p = 0.00102777777778
Ant 10 : [1, 3], 18

Exploitation
Ant 11 : [5, 4], 12
Exploitation
Ant 12 : [0, 1], 10
Exploration
avg = 0.000795768020571
p = 0.000840909090909
p = 0.001541666666667
Ant 13 : [5, 4], 12
Exploitation
Ant 14 : [2, 3], 18
Exploration
avg = 0.00054469583159
p = 0.00123456777778
Ant 2 : [2, 3, 4], 33
Exploitation
Ant 15 : [4, 5], 12
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.000796073576127
p = 0.000840909090909
p = 0.001543194444444
Ant 17 : [5, 4], 12
Exploitation
Ant 18 : [5, 4], 12
Exploitation
Ant 19 : [5, 4], 12
Exploitation
Ant 3 : [0, 4, 5], 32
Exploration
avg = 0.000609293359047
p = 0.000641019230192
p = 0.000724637681159
p = 0.000840909090909
Ant 4 : [4, 5, 3], 34
Exploration
avg = 0.000525547034684
p = 0.000925925925926
Ant 0 : [4, 5, 3, 2], 52
Exploitation
Ant 5 : [3, 4, 5], 27
Exploration
avg = 0.000609501692381
p = 0.000641019230192
p = 0.000724637681159
p = 0.000841742424242
Ant 6 : [4, 5, 3], 34
Exploration
avg = 0.00039478082277
p = 0.000924991666667
Ant 7 : [1, 0, 4], 30
Exploration
avg = 0.000609503775714

p = 0.000641019230192
p = 0.000724637681159
p = 0.000841750757576
Ant 8 : [4, 5, 3], 34
Exploitation
Ant 9 : [3, 4, 5], 27
Exploration
avg = 0.00070480225045
p = 0.00154320987654
Ant 1 : [1, 3, 4, 5], 45
Exploitation
Ant 10 : [1, 3, 4], 33
Exploration
avg = 0.000460933297414
p = 0.001111111111111
Ant 11 : [5, 4, 3], 27
Exploration
avg = 0.000433017084452
p = 0.0010287962963
Ant 12 : [0, 1, 3], 28
Exploration
avg = 0.000491488852973
p = 0.001233333333333
Ant 13 : [5, 4, 3], 27
Exploitation
Ant 14 : [2, 3, 4], 33
Exploration
avg = 0.000675828495931
p = 0.00154320987654
Ant 2 : [2, 3, 4, 5], 45
Exploration
avg = 0.000609503796547
p = 0.000641019230192
p = 0.000724637681159
p = 0.000841750840909
Ant 15 : [4, 5, 3], 34
Exploration
avg = 0.000395012051936
p = 0.000925916583333
Ant 16 : [1, 0, 4], 30
Exploitation
Ant 17 : [5, 4, 3], 27
Exploration
avg = 0.000491797464084
p = 0.00123456777778
Ant 18 : [5, 4, 3], 27
Exploration
avg = 0.000491797494639
p = 0.0012345679
Ant 19 : [5, 4, 3], 27
Exploration
avg = 0.000735802584365
p = 0.000841750841742
Ant 3 : [0, 4, 5, 3], 54

Exploitation
Ant 4 : [4, 5, 3, 2], 52
Exploration
avg = 0.000656565656288
p = 0.000757575757576
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000532088115093
p = 0.000641019230192
p = 0.000724637681159
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000559837158141
p = 0.0010287962963
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.00100870808169
p = 0.00123456790122
p = 0.00154320987654
Ant 7 : [1, 0, 4, 5], 42
Exploration
avg = 0.000559840553202
p = 0.00102880648148
Ant 8 : [4, 5, 3, 2], 52
Exploration
avg = 0.000558658163403
p = 0.000641019230192
p = 0.000804347826087
Ant 9 : [3, 4, 5, 2], 50
Exploitation
Ant 1 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.00070480225045
p = 0.00154320987654
Ant 10 : [1, 3, 4, 5], 45
Exploration
avg = 0.000559840587153
p = 0.00102880658333
Ant 11 : [5, 4, 3, 2], 45
Exploitation
Ant 12 : [0, 1, 3, 4], 43
Exploitation
Ant 13 : [5, 4, 3, 2], 45
Exploitation
Ant 14 : [2, 3, 4, 5], 45
Exploration
avg = 0.00043581333206
p = 0.000641019230192
Ant 2 : [2, 3, 4, 5, 1], 71
Exploitation
Ant 15 : [4, 5, 3, 2], 52
Exploration
avg = 0.00100870808169
p = 0.00123456790122

p = 0.00154320987654
Ant 16 : [1, 0, 4, 5], 42
Exploration
avg = 0.000559840587496
p = 0.00102880658436
Ant 17 : [5, 4, 3, 2], 45
Exploration
avg = 0.000559840587496
p = 0.00102880658436
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000735615588502
p = 0.00102880658436
Ant 3 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000698232322955
p = 0.000840909090909
Ant 4 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000698648989621

p = 0.000841742424242
Ant 5 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 6 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000823451870151
p = 0.000841750841751
Ant 7 : [1, 0, 4, 5, 3], 64
Exploration
avg = 0.000698653197955
p = 0.000841750840909
Ant 8 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 9 : [3, 4, 5, 2, 1], 72
Exploitation
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00051788016624

p = 0.000805152898551
Ant 10 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000729208754206
p = 0.000841750841751
Ant 11 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 12 : [0, 1, 3, 4, 5], 55

Exploration
avg = 0.000729208754206
p = 0.000841750841751
Ant 13 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000471072915679
p = 0.00071153839743
Ant 14 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.00185185166667
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000729208754206

p = 0.000841750841751
Ant 15 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 16 : [1, 0, 4, 5, 3], 64
Exploitation
Ant 17 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 18 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000729208754206
p = 0.000841750841751
Ant 19 : [5, 4, 3, 2, 1], 67
Exploitation
Ant 3 : [0, 4, 5, 3, 2, 1], 94
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00185185185

Ant 4 : [4, 5, 3, 2, 1, 0], 84
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00185185185185

Ant 6 : [4, 5, 3, 2, 1, 0], 84
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00102880658436

Ant 7 : [1, 0, 4, 5, 3, 2], 82
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [4, 5, 3, 2, 1, 0], 84
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [3, 4, 5, 2, 1, 0], 82

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 3, 4, 5, 2, 0], 98

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 3, 2, 1, 0], 77

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [0, 1, 3, 4, 5, 2], 78

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [5, 4, 3, 2, 1, 0], 77

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00185185185185

Ant 14 : [2, 3, 4, 5, 1, 0], 81

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [4, 5, 3, 2, 1, 0], 84

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00102880658436

Ant 16 : [1, 0, 4, 5, 3, 2], 82

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [5, 4, 3, 2, 1, 0], 77

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 3, 2, 1, 0], 77

Update called by 19

Best: [4, 5, 3, 2, 1, 0], 104, 11, 106

Ant thread 19 terminating.iter_counter = 12

starting ant = 0

Explorationstarting ant = 1

avg = 0.000631871974138starting ant = 2
p = 0.00111111111111starting ant = 3
p = 0.00138888888889starting ant = 4
Ant 0 : [4, 5], 12starting ant = 5
Explorationstarting ant = 6
avg = 0.000645107467472starting ant = 7
p = 0.00166666666667starting ant = 8
p = 0.000925925833333starting ant = 9
Ant 1 : [1, 3], 18starting ant = 10
Explorationstarting ant = 11
avg = 0.000554835008804starting ant = 12
p = 0.000555555starting ant = 13
p = 0.000757575757576starting ant = 14
p = 0.000925916665833starting ant = 15
Ant 2 : [2, 3], 18starting ant = 16
Exploitationstarting ant = 17
Ant 3 : [0, 1], 10starting ant = 18
Exploitationstarting ant = 19

Ant 4 : [4, 5], 12
Exploration
avg = 0.000582694839864
p = 0.000641019230192
p = 0.000724637681152
p = 0.000757575757576
Ant 0 : [4, 5, 3], 34
Exploration
avg = 0.000577366206152
p = 0.000925925925926
p = 0.00111111111111
Ant 5 : [3, 4], 15
Exploration
avg = 0.000662733085249
p = 0.00111111111111
p = 0.00154319444444
Ant 6 : [4, 5], 12
Exploitation

Ant 7 : [1, 0], 10
Exploration
avg = 0.000662736140805
p = 0.00111111111111
p = 0.00154320972222
Ant 8 : [4, 5], 12
Exploitation
Ant 9 : [3, 4], 15
Exploitation
Ant 1 : [1, 3, 4], 33
Exploration
avg = 0.000702144522843
p = 0.00185
p = 0.00102777777685
Ant 10 : [1, 3], 18
Exploitation
Ant 11 : [5, 4], 12
Exploration
avg = 0.000654406905365
p = 0.00184998281561
p = 0.00083333324925
Ant 12 : [0, 4], 20
Exploitation
Ant 13 : [5, 4], 12
Exploration
avg = 0.000575207212673
p = 0.000757575757576
p = 0.00102777768518
Ant 14 : [2, 3], 18
Exploitation
Ant 15 : [4, 5], 12
Exploitation
Ant 2 : [2, 3, 4], 33
Exploration
avg = 0.00070234822673
p = 0.00185
p = 0.00102879629629
Ant 16 : [1, 3], 18
Exploitation
Ant 17 : [5, 4], 12
Exploration
avg = 0.000415437829711
p = 0.00102880648148
Ant 3 : [0, 1, 3], 28
Exploration
avg = 0.000791464483002
p = 0.000840909090909
p = 0.00154320972222
Ant 18 : [5, 4], 12
Exploration
avg = 0.000791464513558
p = 0.000840909090909
p = 0.001543209875
Ant 19 : [5, 4], 12

Exploration
avg = 0.000603528173197
p = 0.000641019230192
p = 0.000724637681152
p = 0.000840909090909
Ant 4 : [4, 5, 3], 34
Exploitation
Ant 0 : [4, 5, 3, 2], 52
Exploration
avg = 0.000550642436807
p = 0.00154320987653
Ant 5 : [3, 4, 5], 27
Exploitation
Ant 6 : [4, 5, 3], 34
Exploitation
Ant 7 : [1, 0, 4], 30
Exploitation
Ant 8 : [4, 5, 3], 34
Exploitation
Ant 9 : [3, 4, 5], 27
Exploration
avg = 0.000685762354623
p = 0.00154320987654
Ant 1 : [1, 3, 4, 5], 45
Exploitation
Ant 10 : [1, 3, 4], 33
Exploration
avg = 0.00044261774545
p = 0.00111111111111
Ant 11 : [5, 4, 3], 27
Exploration
avg = 0.000786334428457
p = 0.00123333333333
p = 0.00154320987654
Ant 12 : [0, 4, 5], 32
Exploitation
Ant 13 : [5, 4, 3], 27
Exploration
avg = 0.000521090473736
p = 0.00123456790122
Ant 14 : [2, 3, 4], 33
Exploitation
Ant 15 : [4, 5, 3], 34
Exploitation
Ant 2 : [2, 3, 4, 5], 45
Exploration
avg = 0.000678489384839
p = 0.00102777777778
p = 0.00123456790123
Ant 16 : [1, 3, 4], 33
Exploitation
Ant 17 : [5, 4, 3], 27
Exploitation
Ant 3 : [0, 1, 3, 4], 43

Exploration
avg = 0.00047348191212
p = 0.00123456777778
Ant 18 : [5, 4, 3], 27
Exploration
avg = 0.000473481942675
p = 0.0012345679
Ant 19 : [5, 4, 3], 27
Exploitation
Ant 4 : [4, 5, 3, 2], 52
Exploitation
Ant 0 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000524401200627
p = 0.000641019230192
p = 0.000724637681152
Ant 5 : [3, 4, 5, 2], 50
Exploration
avg = 0.000538146652203
p = 0.0010287962963
Ant 6 : [4, 5, 3, 2], 52
Exploration
avg = 0.00100042986611
p = 0.00123456790122
p = 0.00154320987654
Ant 7 : [1, 0, 4, 5], 42
Exploration
avg = 0.000538150047265
p = 0.00102880648148
Ant 8 : [4, 5, 3, 2], 52
Exploration
avg = 0.000550971248938
p = 0.000641019230192
p = 0.000804347826087
Ant 9 : [3, 4, 5, 2], 50
Exploration
avg = 0.000506345809036
p = 0.000805144927536
Ant 1 : [1, 3, 4, 5, 2], 68
Exploitation
Ant 10 : [1, 3, 4, 5], 45
Exploration
avg = 0.000538150081216
p = 0.00102880658333
Ant 11 : [5, 4, 3, 2], 45
Exploitation
Ant 12 : [0, 4, 5, 3], 54
Exploration
avg = 0.000538150081555
p = 0.00102880658435
Ant 13 : [5, 4, 3, 2], 45
Exploration
avg = 0.000659685975556
p = 0.00154320987654

Ant 14 : [2, 3, 4, 5], 45
Exploration
avg = 0.000538150081558
p = 0.00102880658436
Ant 15 : [4, 5, 3, 2], 52
Exploitation
Ant 2 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000685762354623
p = 0.00154320987654
Ant 16 : [1, 3, 4, 5], 45
Exploitation
Ant 17 : [5, 4, 3, 2], 45
Exploration
avg = 0.00088336084856
p = 0.00154320987654
Ant 3 : [0, 1, 3, 4, 5], 55
Exploration
avg = 0.000538150081558
p = 0.00102880658436
Ant 18 : [5, 4, 3, 2], 45
Exploitation
Ant 19 : [5, 4, 3, 2], 45
Exploration
avg = 0.000698229545455
p = 0.000840909090909
Ant 4 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 0 : [4, 5, 3, 2, 1, 0], 84
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000698646212121

p = 0.000841742424242
Ant 5 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000698650378788
p = 0.000841750757576
Ant 6 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 7 : [1, 0, 4, 5, 3], 64
Exploitation
Ant 8 : [4, 5, 3, 2, 1], 74
Exploration
avg = 0.000698650420871
p = 0.000841750841742
Ant 9 : [3, 4, 5, 2, 1], 72
Exploration
avg = 0.000555555
Ant 1 : [1, 3, 4, 5, 2, 0], 98
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000506349794543

```

p = 0.000805152898551
Ant 10 : [1, 3, 4, 5, 2], 68
Exploration
avg = 0.000729208726431
p = 0.000841750841751
Ant 11 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.00071349435887
p = 0.00102880658436
Ant 12 : [0, 4, 5, 3, 2], 72
Exploration
avg = 0.000729208726431
p = 0.000841750841751
Ant 13 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000459542543983
p = 0.00071153839743
Ant 14 : [2, 3, 4, 5, 1], 71
Exploration
avg = 0.000729208726431
p = 0.000841750841751
Ant 15 : [4, 5, 3, 2, 1], 74
Exploitation
Ant 2 : [2, 3, 4, 5, 1, 0], 81
Update called by 2Exploitation

Ant thread 2 terminating.Ant 16 : [1, 3, 4, 5, 2], 68

Exploitation
Ant 17 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.000805152979058
Ant 3 : [0, 1, 3, 4, 5, 2], 78
Update called by 3Exploitation

Ant thread 3 terminating.Ant 18 : [5, 4, 3, 2, 1], 67

Exploitation
Ant 19 : [5, 4, 3, 2, 1], 67
Exploration
avg = 0.00185185166667
Ant 4 : [4, 5, 3, 2, 1, 0], 84
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 5, 2, 1, 0], 82

ExploitationUpdate called by 5

Ant 6 : [4, 5, 3, 2, 1, 0], 84Ant thread 5 terminating.

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00102880658436

```

Ant 7 : [1, 0, 4, 5, 3, 2], 82
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00185185185185

Ant 8 : [4, 5, 3, 2, 1, 0], 84
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00185185185185

Ant 9 : [3, 4, 5, 2, 1, 0], 82
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.0006166666611111

Ant 10 : [1, 3, 4, 5, 2, 0], 98
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00185185185185

Ant 11 : [5, 4, 3, 2, 1, 0], 77
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000841750841751

Ant 12 : [0, 4, 5, 3, 2, 1], 94
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00185185185185

Ant 13 : [5, 4, 3, 2, 1, 0], 77
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [2, 3, 4, 5, 1, 0], 81
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00185185185185

Ant 15 : [4, 5, 3, 2, 1, 0], 84
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000617277777222

Ant 16 : [1, 3, 4, 5, 2, 0], 98
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00185185185185

Ant 17 : [5, 4, 3, 2, 1, 0], 77
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00185185185185

Ant 18 : [5, 4, 3, 2, 1, 0], 77
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00185185185185

Ant 19 : [5, 4, 3, 2, 1, 0], 77
Update called by 19
Best: [4, 5, 3, 2, 1, 0], 104, 12, 106
Ant thread 19 terminating.

Results

Best path = [4, 5, 3, 2, 1, 0]
('E ',)
('F ',)
('D ',)
('C ',)
('B ',)
('A ',)

Best path cost = 104

>>>

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan

Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py

[[0, 10, 30, 31, 20], [10, 0, 22, 18, 40], [30, 22, 0, 18, 26], [31, 18, 18, 0,
15], [20, 40, 26, 15, 0]]

5

Average = 18

Tau0 = 0.02222222222222

iter_counter = 1

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.00125561167228starting ant = 4

p = 0.00222222222222starting ant = 5

Ant 1 : [1, 0], 10starting ant = 6

Explorationstarting ant = 7

avg = 0.000856232576663starting ant = 8

p = 0.00111111111111starting ant = 9

Ant 0 : [1, 0, 4], 30starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [4, 3], 15starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [4, 3], 15starting ant = 16

Exploitationstarting ant = 17

Ant 5 : [3, 4], 15starting ant = 18

Explorationstarting ant = 19

avg = 0.000856232576663

p = 0.001111111111111

Ant 1 : [1, 0, 4], 30

Exploitation

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [3, 4], 15

Exploration

avg = 0.00100071225071

p = 0.001111111111111

p = 0.00148148148148

Ant 8 : [4, 3], 15

Exploration

avg = 0.00100071225071

p = 0.001111111111111

p = 0.00148148148148

Ant 9 : [4, 3], 15

Exploitation

Ant 0 : [1, 0, 4, 3], 45

Exploration

avg = 0.00125561167228

p = 0.00222222222222

Ant 10 : [1, 0], 10

Exploitation

Ant 11 : [2, 3], 18

Exploitation

Ant 2 : [4, 3, 1], 33

Exploration

avg = 0.000960027626694

p = 0.0010101010101

p = 0.00123456790123

Ant 12 : [2, 3], 18

Exploitation

Ant 13 : [1, 0], 10

Exploration
avg = 0.000856232576663
p = 0.001111111111111
Ant 3 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0], 10
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 4 : [4, 3, 1], 33
Exploration
avg = 0.000960027626694
p = 0.001010101010101
p = 0.00123456790123
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [3, 4], 15
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 18 : [1, 0], 10
Exploitation
Ant 19 : [1, 0], 10
Exploration
avg = 0.00116809116809
p = 0.00148148148148
Ant 1 : [1, 0, 4, 3], 45
Exploration
avg = 0.000856232576663
p = 0.001111111111111
Ant 6 : [1, 0, 4], 30
Exploration
avg = 0.000840455840456
p = 0.001111111111111
p = 0.000854700854701
Ant 7 : [3, 4, 2], 41
Exploitation
Ant 8 : [4, 3, 1], 33
Exploitation
Ant 9 : [4, 3, 1], 33
Exploration
avg = 0.00123456790123
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000856232576663

p = 0.001111111111111
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.00114429842028
p = 0.00123456790123
p = 0.00148148148148
Ant 11 : [2, 3, 4], 33

Exploration
avg = 0.00161616161616
p = 0.00222222222222
Ant 2 : [4, 3, 1, 0], 43
Exploitation
Ant 12 : [2, 3, 4], 33
Exploitation
Ant 13 : [1, 0, 4], 30
Exploration
avg = 0.00116809116809
p = 0.00148148148148
Ant 3 : [1, 0, 4, 3], 45
Exploration
avg = 0.000856232576663
p = 0.00111111111111
Ant 14 : [1, 0, 4], 30
Exploration
avg = 0.000856232576663
p = 0.00111111111111
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 4 : [4, 3, 1, 0], 43
Exploration
avg = 0.00114429842028
p = 0.00123456790123
p = 0.00148148148148
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.000840455840456
p = 0.00111111111111
p = 0.000854700854701
Ant 17 : [3, 4, 2], 41
Exploration
avg = 0.00148148148148
p = 0.00222222222222
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 18 : [1, 0, 4], 30
Exploitation
Ant 19 : [1, 0, 4], 30
Exploration
avg = 0.00123456790123
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00116809116809

p = 0.00148148148148
Ant 6 : [1, 0, 4, 3], 45
Exploitation
Ant 7 : [3, 4, 2, 1], 63
Exploitation
Ant 8 : [4, 3, 1, 0], 43
Exploration

avg = 0.0016161616161616
p = 0.0022222222222222
Ant 9 : [4, 3, 1, 0], 43
Exploration
avg = 0.00116809116809
p = 0.00148148148148
Ant 10 : [1, 0, 4, 3], 45
Exploration
avg = 0.0008333333333333
p = 0.0011111111111111
Ant 11 : [2, 3, 4, 0], 53
Exploitation
Ant 2 : [4, 3, 1, 0, 2], 73
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [2, 3, 4, 0], 53

Exploitation
Ant 13 : [1, 0, 4, 3], 45
Exploration
avg = 0.00123456790123
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [1, 0, 4, 3], 45

Exploitation
Ant 15 : [1, 0, 4, 3], 45
Exploitation
Ant 4 : [4, 3, 1, 0, 2], 73
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.0008333333333333

p = 0.0011111111111111
Ant 16 : [2, 3, 4, 0], 53
Exploitation
Ant 17 : [3, 4, 2, 1], 63
Exploration
avg = 0.0010101010101
Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploitation

Ant thread 5 terminating.Ant 18 : [1, 0, 4, 3], 45

Exploitation
Ant 19 : [1, 0, 4, 3], 45
Exploration
avg = 0.00123456790123
Ant 6 : [1, 0, 4, 3, 2], 63
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [3, 4, 2, 1, 0], 73

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 1, 0, 2], 73

ExplorationUpdate called by 8

avg = 0.000740740740741Ant thread 8 terminating.

Ant 9 : [4, 3, 1, 0, 2], 73

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 3, 2], 63

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.002222222222222

Ant 11 : [2, 3, 4, 0, 1], 63

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.002222222222222

Ant 12 : [2, 3, 4, 0, 1], 63

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00123456790123

Ant 14 : [1, 0, 4, 3, 2], 63

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00123456790123

Ant 15 : [1, 0, 4, 3, 2], 63

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 4, 0, 1], 63

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [3, 4, 2, 1, 0], 73

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00123456790123

Ant 18 : [1, 0, 4, 3, 2], 63

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00123456790123

Ant 19 : [1, 0, 4, 3, 2], 63
Update called by 19
Best: [1, 0, 4, 3, 2], 85, 1, 89
Ant thread 19 terminating.iter_counter = 2

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [1, 0, 4], 30starting ant = 6

Explorationstarting ant = 7

avg = 0.000900641025641starting ant = 8

p = 0.001starting ant = 9

p = 0.0013333333333333starting ant = 10

Ant 2 : [4, 3], 15starting ant = 11

Explorationstarting ant = 12

avg = 0.00118560050505starting ant = 13

p = 0.0022222starting ant = 14

Ant 3 : [1, 0], 10starting ant = 15

Exploitationstarting ant = 16

Ant 1 : [1, 0, 4], 30starting ant = 17

Explorationstarting ant = 18

avg = 0.000937307692308starting ant = 19

p = 0.001

p = 0.00148

Ant 4 : [4, 3], 15

Exploration

avg = 0.00105017921147

p = 0.0011111111111111

p = 0.0011111111111111

p = 0.0013333333333333

Ant 5 : [3, 4], 15

Exploitation

Ant 0 : [1, 0, 4, 3], 45
Exploitation
Ant 6 : [1, 0], 10
Exploitation
Ant 7 : [3, 4], 15
Exploration
avg = 0.000937678025641
p = 0.001
p = 0.00148148133333
Ant 8 : [4, 3], 15
Exploitation
Ant 9 : [4, 3], 15
Exploration
avg = 0.00118560606005
p = 0.002222222222
Ant 10 : [1, 0], 10
Exploration
avg = 0.000955794504182
p = 0.00111111111111
p = 0.00111111111111
Ant 2 : [4, 3, 2], 33
Exploitation
Ant 11 : [2, 3], 18
Exploration
avg = 0.00089458041958
p = 0.000909090909091
p = 0.00123333333333
Ant 12 : [2, 3], 18
Exploration
avg = 0.0011856060606
p = 0.00222222222222
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [1, 0], 10
Exploitation
Ant 3 : [1, 0, 4], 30
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [2, 3], 18
Exploration
avg = 0.00112535612535
p = 0.00148148148147
Ant 1 : [1, 0, 4, 3], 45
Exploration
avg = 0.00111776810036
p = 0.00123333333333
p = 0.00148146666667
Ant 17 : [3, 4], 15
Exploration
avg = 0.00118560606061
p = 0.00222222222222
Ant 18 : [1, 0], 10
Exploitation

Ant 19 : [1, 0], 10
Exploitation
Ant 4 : [4, 3, 2], 33
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000807646318996

p = 0.0011111111
Ant 6 : [1, 0, 4], 30
Exploitation
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000996946767145
p = 0.001111111111111
p = 0.0012345679
Ant 9 : [4, 3, 2], 33
Exploitation
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000787878787879
p = 0.000909090909091
Ant 2 : [4, 3, 2, 1], 55
Exploration
avg = 0.00107925124492
p = 0.001111111111111
p = 0.00148148133333
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.00107925129381
p = 0.001111111111111
p = 0.00148148148
Ant 12 : [2, 3, 4], 33
Exploration
avg = 0.00080764635603
p = 0.001111111111111
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0, 4], 30
Exploitation
Ant 3 : [1, 0, 4, 3], 45
Exploitation
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 16 : [2, 3, 4], 33
Exploitation
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000793443589744

p = 0.00111111
Ant 17 : [3, 4, 0], 35
Exploration
avg = 0.000807646356033
p = 0.0011111111111111
Ant 18 : [1, 0, 4], 30
Exploration
avg = 0.000807646356033
p = 0.0011111111111111
Ant 19 : [1, 0, 4], 30
Exploration
avg = 0.000837878787879
p = 0.0010090909090909
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.0013333333333333
p = 0.002
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 6 : [1, 0, 4, 3], 45
Exploitation
Ant 7 : [3, 4, 0, 1], 45
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploitation
Ant 9 : [4, 3, 2, 1], 55
Exploration
avg = 0.00112535612536
p = 0.00148148148148
Ant 10 : [1, 0, 4, 3], 45
Exploitation
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [2, 3, 4, 0], 53

Exploitation
Ant 12 : [2, 3, 4, 0], 53
Exploration
avg = 0.00112535612536
p = 0.00148148148148
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [1, 0, 4, 3], 45
Exploitation
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 15 : [1, 0, 4, 3], 45

Exploration
avg = 0.0008055555555555

p = 0.0011111111111111
Ant 16 : [2, 3, 4, 0], 53
Exploitation
Ant 17 : [3, 4, 0, 1], 45
Exploitation
Ant 18 : [1, 0, 4, 3], 45
Exploitation
Ant 19 : [1, 0, 4, 3], 45
Exploitation
Ant 4 : [4, 3, 2, 1, 0], 65
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000909090909091

Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00123456790123

Ant 6 : [1, 0, 4, 3, 2], 63
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00100909090909

Ant 7 : [3, 4, 0, 1, 2], 67
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [4, 3, 2, 1, 0], 65

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 3, 2], 63

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [2, 3, 4, 0, 1], 63

ExploitationUpdate called by 11

Ant 12 : [2, 3, 4, 0, 1], 63Ant thread 11 terminating.

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00123456790123

Ant 14 : [1, 0, 4, 3, 2], 63

ExplorationUpdate called by 14

avg = 0.00123456790123Ant thread 14 terminating.

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 4, 0, 1], 63

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101009090909

Ant 17 : [3, 4, 0, 1, 2], 67
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00123456790123

Ant 19 : [1, 0, 4, 3, 2], 63
Update called by 19
Best: [1, 0, 4, 3, 2], 85, 2, 85
Ant thread 19 terminating.iter_counter = 3

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.00114477270455starting ant = 4

p = 0.00222starting ant = 5

Ant 1 : [1, 0], 10starting ant = 6

Explorationstarting ant = 7

avg = 0.00072688172043starting ant = 8

p = 0.001starting ant = 9

Ant 0 : [1, 0, 4], 30starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [4, 3], 15starting ant = 12

Explorationstarting ant = 13

avg = 0.00114532270455starting ant = 14

p = 0.0022222starting ant = 15

Ant 3 : [1, 0], 10starting ant = 16

Explorationstarting ant = 17

avg = 0.000905576923077starting ant = 18

p = 0.001starting ant = 19

p = 0.00148

Ant 4 : [4, 3], 15

Exploration

avg = 0.00100627240143

p = 0.00111111111111

p = 0.00133333333333

Ant 5 : [3, 4], 15

Exploration

avg = 0.000763548387097

p = 0.00111

Ant 1 : [1, 0, 4], 30

Exploration

avg = 0.00114532820455

p = 0.002222222

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [3, 4], 15

Exploration

avg = 0.000905943589744

p = 0.001

p = 0.00148146666667

Ant 8 : [4, 3], 15

Exploitation

Ant 9 : [4, 3], 15

Exploration

avg = 0.00108689458615

p = 0.00148148148

Ant 0 : [1, 0, 4, 3], 45

Exploitation

Ant 10 : [1, 0], 10

Exploration

avg = 0.000828127400122

p = 0.000909090908182

p = 0.001111111

Ant 11 : [2, 3], 18

Exploitation

Ant 2 : [4, 3, 2], 33

Exploration

avg = 0.000858682983178

p = 0.000909090908182

p = 0.00123333333222

Ant 12 : [2, 3], 18

Exploitation
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [1, 0], 10
Exploration
avg = 0.0011453282601
p = 0.002222222222222
Ant 15 : [1, 0], 10
Exploration
avg = 0.000763915053763
p = 0.00111111
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.000858988539008
p = 0.000909090908182
p = 0.00123455555554
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [3, 4], 15
Exploration
avg = 0.0011453282601
p = 0.002222222222222
Ant 18 : [1, 0], 10
Exploitation
Ant 19 : [1, 0], 10
Exploration
avg = 0.000937992831541
p = 0.001
p = 0.001233333333333
Ant 4 : [4, 3, 2], 33
Exploration
avg = 0.000714102564103
p = 0.001
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 1 : [1, 0, 4, 3], 45
Exploration
avg = 0.00076391872043
p = 0.0011111111
Ant 6 : [1, 0, 4], 30
Exploitation
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000938404313023
p = 0.001
p = 0.00123456777778
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.0012345679
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000763918757097

p = 0.001111111111
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.00102070883154
p = 0.00148148133333
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.000754545454091
p = 0.000909090908182
Ant 2 : [4, 3, 2, 1], 55
Exploration
avg = 0.00102070888043
p = 0.00148148148
Ant 12 : [2, 3, 4], 33
Exploitation
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0, 4], 30
Exploitation
Ant 15 : [1, 0, 4], 30
Exploration
avg = 0.00108689458689
p = 0.00148148148148
Ant 3 : [1, 0, 4, 3], 45
Exploration
avg = 0.00102070888092
p = 0.00148148148147
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.000751135897436
p = 0.00111111
Ant 17 : [3, 4, 0], 35
Exploration
avg = 0.000763918757467
p = 0.00111111111111
Ant 18 : [1, 0, 4], 30
Exploration
avg = 0.000763918757467
p = 0.00111111111111
Ant 19 : [1, 0, 4], 30
Exploitation
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.0013
p = 0.002
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00108689458689

p = 0.00148148148148
Ant 6 : [1, 0, 4, 3], 45
Exploitation
Ant 7 : [3, 4, 0, 1], 45
Exploration
avg = 0.000805045454545
p = 0.00101009090909
Ant 8 : [4, 3, 2, 1], 55
Exploitation
Ant 9 : [4, 3, 2, 1], 55
Exploitation
Ant 10 : [1, 0, 4, 3], 45
Exploitation
Ant 11 : [2, 3, 4, 0], 53
Exploration
avg = 0.00222222222222
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000780555555

p = 0.001111111111
Ant 12 : [2, 3, 4, 0], 53
Exploration
avg = 0.00108689458689
p = 0.00148148148148
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [1, 0, 4, 3], 45
Exploitation
Ant 15 : [1, 0, 4, 3], 45
Exploitation
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 16 : [2, 3, 4, 0], 53

Exploitation
Ant 17 : [3, 4, 0, 1], 45
Exploration
avg = 0.00108689458689
p = 0.00148148148148
Ant 18 : [1, 0, 4, 3], 45
Exploration
avg = 0.00108689458689
p = 0.00148148148148
Ant 19 : [1, 0, 4, 3], 45
Exploration
avg = 0.00222222222222
Ant 4 : [4, 3, 2, 1, 0], 65
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 4, 3, 2], 63

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [3, 4, 0, 1, 2], 67

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

ExploitationUpdate called by 8

Ant 9 : [4, 3, 2, 1, 0], 65Ant thread 8 terminating.

ExplorationUpdate called by 9

avg = 0.00123456790123Ant thread 9 terminating.

Ant 10 : [1, 0, 4, 3, 2], 63

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.0022222222

Ant 11 : [2, 3, 4, 0, 1], 63

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [2, 3, 4, 0, 1], 63

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00123456790123

Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00123456790123

Ant 14 : [1, 0, 4, 3, 2], 63

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 4, 3, 2], 63

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 4, 0, 1], 63

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101009090908

Ant 17 : [3, 4, 0, 1, 2], 67

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00123456790123

Ant 19 : [1, 0, 4, 3, 2], 63

Update called by 19

Best: [1, 0, 4, 3, 2], 85, 3, 85

Ant thread 19 terminating.iter_counter = 4

starting ant = 0

Explorationstarting ant = 1

avg = 0.00105352270455starting ant = 2

p = 0.002starting ant = 3

Ant 0 : [1, 0], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.00110852270455starting ant = 6

p = 0.00222starting ant = 7

Ant 1 : [1, 0], 10starting ant = 8

Explorationstarting ant = 9

avg = 0.000840352564103starting ant = 10

p = 0.001starting ant = 11

p = 0.0013333333333333starting ant = 12

Ant 2 : [4, 3], 15starting ant = 13

Exploitationstarting ant = 14

Ant 3 : [1, 0], 10starting ant = 15

Explorationstarting ant = 16

avg = 0.00068752688172starting ant = 17

p = 0.001starting ant = 18

Ant 0 : [1, 0, 4], 30starting ant = 19

Exploration

avg = 0.000877019230769

p = 0.001

p = 0.00148
Ant 4 : [4, 3], 15
Exploitation
Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [1, 0], 10
Exploration
avg = 0.00100342293907
p = 0.0011111111111111
p = 0.00148
Ant 7 : [3, 4], 15
Exploration
avg = 0.000724193548387
p = 0.00111
Ant 1 : [1, 0, 4], 30
Exploration
avg = 0.000877385897436
p = 0.001
p = 0.001481466666667
Ant 8 : [4, 3], 15
Exploration
avg = 0.000877389564103
p = 0.001
p = 0.001481481333333
Ant 9 : [4, 3], 15
Exploration
avg = 0.00110907825955
p = 0.002222222222
Ant 10 : [1, 0], 10
Exploration
avg = 0.000795819707815
p = 0.000909090908182
p = 0.0011111111
Ant 11 : [2, 3], 18
Exploration
avg = 0.00082637529087
p = 0.000909090908182
p = 0.00123333333222
Ant 12 : [2, 3], 18
Exploration
avg = 0.000844563918757
p = 0.0009
p = 0.0011111111111111
Ant 2 : [4, 3, 2], 33
Exploitation
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [1, 0], 10
Exploitation
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.0011090782601
p = 0.0022222222222222
Ant 15 : [1, 0], 10

Exploitation
Ant 16 : [2, 3], 18
Exploration
avg = 0.00103434516129
p = 0.00123333333333
p = 0.00148146666667
Ant 17 : [3, 4], 15
Exploitation
Ant 18 : [1, 0], 10
Exploration
avg = 0.00105227920154
p = 0.00148148148
Ant 0 : [1, 0, 4, 3], 45
Exploration
avg = 0.0011090782601
p = 0.00222222222222
Ant 19 : [1, 0], 10
Exploitation
Ant 4 : [4, 3, 2], 33
Exploitation
Ant 5 : [3, 4, 0], 35
Exploration
avg = 0.00072456388172
p = 0.0011111111
Ant 6 : [1, 0, 4], 30
Exploration
avg = 0.000712692307692
p = 0.00111
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 1 : [1, 0, 4, 3], 45
Exploitation
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.000724563918387
p = 0.001111111111
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000968020659498
p = 0.00148148133333
Ant 11 : [2, 3, 4], 33
Exploitation
Ant 12 : [2, 3, 4], 33
Exploitation
Ant 2 : [4, 3, 2, 1], 55
Exploration
avg = 0.000724563918754
p = 0.00111111111111
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0, 4], 30
Exploitation

Ant 3 : [1, 0, 4, 3], 45
Exploration
avg = 0.000724563918757
p = 0.001111111111111
Ant 15 : [1, 0, 4], 30
Exploration
avg = 0.000968020708876
p = 0.00148148148147
Ant 16 : [2, 3, 4], 33
Exploitation
Ant 17 : [3, 4, 0], 35
Exploration
avg = 0.000724563918757
p = 0.001111111111111
Ant 18 : [1, 0, 4], 30
Exploitation
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploitation

Ant thread 0 terminating.Ant 19 : [1, 0, 4], 30

Exploration
avg = 0.000774545454541
p = 0.00100909090908
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.00127
p = 0.002
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 6 : [1, 0, 4, 3], 45
Exploration
avg = 0.00138
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploration
avg = 0.00123456790122
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [4, 3, 2, 1], 55

Exploitation
Ant 9 : [4, 3, 2, 1], 55
Exploitation
Ant 10 : [1, 0, 4, 3], 45
Exploitation
Ant 11 : [2, 3, 4, 0], 53
Exploitation
Ant 12 : [2, 3, 4, 0], 53
Exploitation
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploitation

Ant thread 2 terminating.Ant 13 : [1, 0, 4, 3], 45

Exploration

avg = 0.00105227920228

p = 0.00148148148148

Ant 14 : [1, 0, 4, 3], 45

Exploration

avg = 0.00123456790123

Ant 3 : [1, 0, 4, 3, 2], 63

ExploitationUpdate called by 3

Ant 15 : [1, 0, 4, 3], 45Ant thread 3 terminating.

Exploration

avg = 0.00075805555555

p = 0.00111111111111

Ant 16 : [2, 3, 4, 0], 53

Exploration

avg = 0.0013811

p = 0.0022222

Ant 17 : [3, 4, 0, 1], 45

Exploration

avg = 0.00105227920228

p = 0.00148148148148

Ant 18 : [1, 0, 4, 3], 45

Exploration

avg = 0.00105227920228

p = 0.00148148148148

Ant 19 : [1, 0, 4, 3], 45

Exploration

avg = 0.00222222222222

Ant 4 : [4, 3, 2, 1, 0], 65

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 0, 1, 2], 67

ExploitationUpdate called by 5

Ant 6 : [1, 0, 4, 3, 2], 63Ant thread 5 terminating.

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00100909090818

Ant 7 : [3, 4, 0, 1, 2], 67

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00222222222222

Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00222222222222

Ant 9 : [4, 3, 2, 1, 0], 65
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 3, 2], 63
ExploitationUpdate called by 10

Ant 11 : [2, 3, 4, 0, 1], 63Ant thread 10 terminating.
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [2, 3, 4, 0, 1], 63
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00123456790123

Ant 14 : [1, 0, 4, 3, 2], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00123456790123

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00222222222222

Ant 16 : [2, 3, 4, 0, 1], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101009090908

Ant 17 : [3, 4, 0, 1, 2], 67
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 4, 3, 2], 63
Update called by 19
Best: [1, 0, 4, 3, 2], 85, 4, 85
Ant thread 19 terminating.iter_counter = 5

starting ant = 0
Explorationstarting ant = 1

avg = 0.00102089770455starting ant = 2

p = 0.002starting ant = 3
Ant 0 : [1, 0], 10starting ant = 4
Explorationstarting ant = 5
avg = 0.00107589770455starting ant = 6
p = 0.00222starting ant = 7
Ant 1 : [1, 0], 10starting ant = 8
Explorationstarting ant = 9
avg = 0.000814650641026starting ant = 10
p = 0.001starting ant = 11
p = 0.0013333333333333starting ant = 12
Ant 2 : [4, 3], 15starting ant = 13
Explorationstarting ant = 14
avg = 0.00107644770455starting ant = 15
p = 0.0022222starting ant = 16
Ant 3 : [1, 0], 10starting ant = 17
Explorationstarting ant = 18
avg = 0.000652107526882starting ant = 19

p = 0.001
Ant 0 : [1, 0, 4], 30
Exploration
avg = 0.000851317307692
p = 0.001
p = 0.00148
Ant 4 : [4, 3], 15
Exploration
avg = 0.000931191756272
p = 0.001111111111111
p = 0.001333333333333
Ant 5 : [3, 4], 15
Exploration
avg = 0.00107645320455
p = 0.00222222
Ant 6 : [1, 0], 10
Exploration
avg = 0.000967858422939
p = 0.001111111111111
p = 0.00148

Ant 7 : [3, 4], 15
Exploitation
Ant 1 : [1, 0, 4], 30
Exploitation
Ant 8 : [4, 3], 15
Exploitation
Ant 9 : [4, 3], 15
Exploitation
Ant 10 : [1, 0], 10
Exploration
avg = 0.000766742784738
p = 0.000909090908182
p = 0.0011111111
Ant 11 : [2, 3], 18
Exploration
avg = 0.000797298367793
p = 0.000909090908182
p = 0.00123333333222
Ant 12 : [2, 3], 18
Exploitation
Ant 2 : [4, 3, 2], 33
Exploitation
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [1, 0], 10
Exploration
avg = 0.0010764532601
p = 0.00222222222222
Ant 15 : [1, 0], 10
Exploration
avg = 0.000797603923624
p = 0.000909090908182
p = 0.00123455555554
Ant 16 : [2, 3], 18
Exploitation
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.000998780645161
p = 0.00123333333333
p = 0.00148146666667
Ant 17 : [3, 4], 15
Exploitation
Ant 18 : [1, 0], 10
Exploration
avg = 0.0010764532601
p = 0.00222222222222
Ant 19 : [1, 0], 10
Exploitation
Ant 0 : [1, 0, 4, 3], 45
Exploration
avg = 0.000837885304659
p = 0.00123333333333
Ant 4 : [4, 3, 2], 33
Exploration

avg = 0.000641756410256
p = 0.001
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 6 : [1, 0, 4], 30
Exploration
avg = 0.000678423076923
p = 0.00111
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 1 : [1, 0, 4, 3], 45
Exploration
avg = 0.000838292712067
p = 0.00123455555556
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000838296786141
p = 0.00123456777778
Ant 9 : [4, 3, 2], 33
Exploitation
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000920601304659
p = 0.00148148133333
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.000920601353548
p = 0.00148148148
Ant 12 : [2, 3, 4], 33
Exploitation
Ant 2 : [4, 3, 2, 1], 55
Exploration
avg = 0.000689144563915
p = 0.00111111111111
Ant 13 : [1, 0, 4], 30
Exploration
avg = 0.000689144563919
p = 0.00111111111111
Ant 14 : [1, 0, 4], 30
Exploitation
Ant 15 : [1, 0, 4], 30
Exploration
avg = 0.000920601354037
p = 0.00148148148147
Ant 16 : [2, 3, 4], 33
Exploitation
Ant 3 : [1, 0, 4, 3], 45
Exploration
avg = 0.00067878974359
p = 0.0011111
Ant 17 : [3, 4, 0], 35
Exploration
avg = 0.000689144563919
p = 0.00111111111111

Ant 18 : [1, 0, 4], 30
Exploration
avg = 0.000689144563919
p = 0.001111111111111
Ant 19 : [1, 0, 4], 30
Exploration
avg = 0.0012345679
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000747545454541

p = 0.00100909090908
Ant 4 : [4, 3, 2, 1], 55
Exploitation
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 6 : [1, 0, 4, 3], 45
Exploration
avg = 0.001353
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploration
avg = 0.00123456790122
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [4, 3, 2, 1], 55

Exploitation
Ant 9 : [4, 3, 2, 1], 55
Exploitation
Ant 10 : [1, 0, 4, 3], 45
Exploitation
Ant 11 : [2, 3, 4, 0], 53
Exploitation
Ant 12 : [2, 3, 4, 0], 53
Exploitation
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploitation

Ant thread 2 terminating.Ant 13 : [1, 0, 4, 3], 45

Exploration
avg = 0.00102112535613
p = 0.00148148148148
Ant 14 : [1, 0, 4, 3], 45
Exploration
avg = 0.00102112535613
p = 0.00148148148148
Ant 15 : [1, 0, 4, 3], 45
Exploration
avg = 0.00073780555555
p = 0.00111111111111

Ant 16 : [2, 3, 4, 0], 53
Exploitation
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 17 : [3, 4, 0, 1], 45

Exploration
avg = 0.00102112535613
p = 0.00148148148148
Ant 18 : [1, 0, 4, 3], 45
Exploitation
Ant 19 : [1, 0, 4, 3], 45
Exploitation
Ant 4 : [4, 3, 2, 1, 0], 65
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000909090818182

Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00123456790123

Ant 6 : [1, 0, 4, 3, 2], 63
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00100909090818

Ant 7 : [3, 4, 0, 1, 2], 67
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00222222222222

Ant 9 : [4, 3, 2, 1, 0], 65
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00123456790123

Ant 10 : [1, 0, 4, 3, 2], 63
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.0022222222

Ant 11 : [2, 3, 4, 0, 1], 63
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.002222222222

Ant 12 : [2, 3, 4, 0, 1], 63

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00123456790123

Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 4, 3, 2], 63

ExplorationUpdate called by 14

avg = 0.00123456790123Ant thread 14 terminating.

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00222222222222

Ant 16 : [2, 3, 4, 0, 1], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101009090908

Ant 17 : [3, 4, 0, 1, 2], 67
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 4, 3, 2], 63

Update called by 19
Best: [1, 0, 4, 3, 2], 85, 5, 85
Ant thread 19 terminating.iter_counter = 6

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.00104653520455starting ant = 4

p = 0.00222starting ant = 5

Ant 1 : [1, 0], 10starting ant = 6

Explorationstarting ant = 7

avg = 0.000620230107527starting ant = 8

p = 0.001starting ant = 9

Ant 0 : [1, 0, 4], 30starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [4, 3], 15starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000828185576923starting ant = 16

p = 0.001starting ant = 17

p = 0.00148starting ant = 18

Ant 4 : [4, 3], 15starting ant = 19

Exploitation

Ant 5 : [3, 4], 15

Exploration

avg = 0.000656896774194

p = 0.00111

Ant 1 : [1, 0, 4], 30

Exploitation

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [3, 4], 15

Exploitation

Ant 8 : [4, 3], 15

Exploration

avg = 0.000828555910256

p = 0.001

p = 0.00148148133333

Ant 9 : [4, 3], 15

Exploration

avg = 0.000993086893846

p = 0.00148148148

Ant 0 : [1, 0, 4, 3], 45

Exploitation

Ant 10 : [1, 0], 10

Exploration

avg = 0.000740573553969

p = 0.000909090908182

p = 0.001111111

Ant 11 : [2, 3], 18

Exploration

avg = 0.000754467144564

p = 0.00111111111111

Ant 2 : [4, 3, 2], 33

Exploitation

Ant 12 : [2, 3], 18
Exploitation
Ant 13 : [1, 0], 10
Exploration
avg = 0.00065726344086
p = 0.00111111
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.0010470907601
p = 0.00222222222222
Ant 14 : [1, 0], 10
Exploration
avg = 0.0010470907601
p = 0.00222222222222
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [2, 3], 18
Exploration
avg = 0.000966772580645
p = 0.00123333333333
p = 0.00148146666667
Ant 17 : [3, 4], 15
Exploration
avg = 0.0010470907601
p = 0.00222222222222
Ant 18 : [1, 0], 10
Exploration
avg = 0.000795207885305
p = 0.00123333333333
Ant 4 : [4, 3, 2], 33
Exploration
avg = 0.0010470907601
p = 0.00222222222222
Ant 19 : [1, 0], 10
Exploration
avg = 0.000610914102564
p = 0.001
Ant 5 : [3, 4, 0], 35
Exploration
avg = 0.000993086894579
p = 0.00148148148147
Ant 1 : [1, 0, 4, 3], 45
Exploitation
Ant 6 : [1, 0, 4], 30
Exploitation
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000795619366786
p = 0.00123456777778
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.0012345679

Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploitation

Ant thread 0 terminating.Ant 10 : [1, 0, 4], 30

Exploitation
Ant 11 : [2, 3, 4], 33
Exploitation
Ant 2 : [4, 3, 2, 1], 55
Exploitation
Ant 12 : [2, 3, 4], 33
Exploration
avg = 0.00065726714456
p = 0.00111111111111
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 3 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [1, 0, 4], 30
Exploration
avg = 0.000657267144564
p = 0.00111111111111
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.000647947435897
p = 0.0011111
Ant 17 : [3, 4, 0], 35
Exploration
avg = 0.000657267144564
p = 0.00111111111111
Ant 18 : [1, 0, 4], 30
Exploration
avg = 0.000723245454541
p = 0.00100909090908
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.000657267144564
p = 0.00111111111111
Ant 19 : [1, 0, 4], 30
Exploration
avg = 0.0012187
p = 0.002
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.00123456790122
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000993086894587

p = 0.00148148148148
Ant 6 : [1, 0, 4, 3], 45

Exploration
avg = 0.0013287
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.000723750454545
p = 0.00101010090909
Ant 9 : [4, 3, 2, 1], 55
Exploitation
Ant 10 : [1, 0, 4, 3], 45
Exploration
avg = 0.0007195805
p = 0.001111111
Ant 11 : [2, 3, 4, 0], 53
Exploitation
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [2, 3, 4, 0], 53

Exploration
avg = 0.000993086894587
p = 0.00148148148148
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [1, 0, 4, 3], 45

Exploration
avg = 0.000993086894587
p = 0.00148148148148
Ant 15 : [1, 0, 4, 3], 45
Exploitation
Ant 16 : [2, 3, 4, 0], 53
Exploration
avg = 0.0013298
p = 0.0022222
Ant 17 : [3, 4, 0, 1], 45
Exploration
avg = 0.000993086894587
p = 0.00148148148148
Ant 18 : [1, 0, 4, 3], 45
Exploration
avg = 0.00222222222222
Ant 4 : [4, 3, 2, 1, 0], 65
ExploitationUpdate called by 4

Ant 19 : [1, 0, 4, 3], 45Ant thread 4 terminating.

Exploitation

Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00123456790123

Ant 6 : [1, 0, 4, 3, 2], 63
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00100909090818

Ant 7 : [3, 4, 0, 1, 2], 67
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

ExplorationUpdate called by 8

avg = 0.00222222222222Ant thread 8 terminating.

Ant 9 : [4, 3, 2, 1, 0], 65
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 3, 2], 63

ExplorationUpdate called by 10

avg = 0.0022222222Ant thread 10 terminating.

Ant 11 : [2, 3, 4, 0, 1], 63
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [2, 3, 4, 0, 1], 63

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00123456790123

Ant 14 : [1, 0, 4, 3, 2], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00123456790123

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00222222222222

Ant 16 : [2, 3, 4, 0, 1], 63
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [3, 4, 0, 1, 2], 67

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00123456790123

Ant 18 : [1, 0, 4, 3, 2], 63

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 4, 3, 2], 63

Update called by 19

Best: [1, 0, 4, 3, 2], 85, 6, 85

Ant thread 19 terminating.iter_counter = 7

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.00102010895455starting ant = 4

p = 0.00222starting ant = 5

Ant 1 : [1, 0], 10starting ant = 6

Explorationstarting ant = 7

avg = 0.000591540430108starting ant = 8

p = 0.001starting ant = 9

Ant 0 : [1, 0, 4], 30starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [4, 3], 15starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000807367019231starting ant = 16

p = 0.001starting ant = 17

p = 0.00148starting ant = 18

Ant 4 : [4, 3], 15starting ant = 19

Exploration
avg = 0.000870376433692
p = 0.001111111111111
p = 0.001333333333333
Ant 5 : [3, 4], 15
Exploration
avg = 0.000628207096774
p = 0.00111
Ant 1 : [1, 0, 4], 30
Exploitation
Ant 6 : [1, 0], 10
Exploitation
Ant 7 : [3, 4], 15
Exploration
avg = 0.000807733685897
p = 0.001
p = 0.001481466666667
Ant 8 : [4, 3], 15
Exploitation
Ant 9 : [4, 3], 15
Exploitation
Ant 0 : [1, 0, 4, 3], 45
Exploration
avg = 0.00102066450955
p = 0.002222222222
Ant 10 : [1, 0], 10
Exploration
avg = 0.000717021246276
p = 0.000909090908182
p = 0.001111111
Ant 11 : [2, 3], 18
Exploration
avg = 0.000716057467145
p = 0.001111111111111
Ant 2 : [4, 3, 2], 33
Exploitation
Ant 12 : [2, 3], 18
Exploration
avg = 0.0010206645101
p = 0.00222222222222
Ant 13 : [1, 0], 10
Exploration
avg = 0.000628573763441
p = 0.0011111
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.0010206645101
p = 0.00222222222222
Ant 14 : [1, 0], 10
Exploration
avg = 0.0010206645101
p = 0.00222222222222
Ant 15 : [1, 0], 10
Exploration

avg = 0.000747882385162
p = 0.000909090908182
p = 0.00123455555554
Ant 16 : [2, 3], 18
Exploration
avg = 0.000937965322581
p = 0.00123333333333
p = 0.00148146666667
Ant 17 : [3, 4], 15
Exploration
avg = 0.0010206645101
p = 0.00222222222222
Ant 18 : [1, 0], 10
Exploitation
Ant 4 : [4, 3, 2], 33
Exploration
avg = 0.0010206645101
p = 0.00222222222222
Ant 19 : [1, 0], 10
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 1 : [1, 0, 4, 3], 45
Exploration
avg = 0.000628577430108
p = 0.0011111111
Ant 6 : [1, 0, 4], 30
Exploration
avg = 0.000619822692308
p = 0.00111
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000757209689367
p = 0.00123456777778
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.0012345679
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000628577466774

p = 0.001111111111
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000839514207885
p = 0.00148148133333
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.000651375454091
p = 0.000909090908182
Ant 2 : [4, 3, 2, 1], 55

Exploitation
Ant 12 : [2, 3, 4], 33
Exploitation
Ant 13 : [1, 0, 4], 30
Exploration
avg = 0.000967852279202
p = 0.00148148148148
Ant 3 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [1, 0, 4], 30
Exploration
avg = 0.000628577467145
p = 0.00111111111111
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.000620189358974
p = 0.00111111
Ant 17 : [3, 4, 0], 35
Exploration
avg = 0.000628577467145
p = 0.00111111111111
Ant 18 : [1, 0, 4], 30
Exploitation
Ant 4 : [4, 3, 2, 1], 55
Exploitation
Ant 19 : [1, 0, 4], 30
Exploitation
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploitation

Ant thread 1 terminating.Ant 6 : [1, 0, 4, 3], 45

Exploration
avg = 0.00130683
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploitation
Ant 9 : [4, 3, 2, 1], 55
Exploration
avg = 0.000967852279202
p = 0.00148148148148
Ant 10 : [1, 0, 4, 3], 45
Exploitation
Ant 11 : [2, 3, 4, 0], 53
Exploration
avg = 0.00222222222222
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [2, 3, 4, 0], 53

Exploitation

Ant 13 : [1, 0, 4, 3], 45

Exploitation

Ant 3 : [1, 0, 4, 3, 2], 63

Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [1, 0, 4, 3], 45

Exploitation

Ant 15 : [1, 0, 4, 3], 45

Exploitation

Ant 16 : [2, 3, 4, 0], 53

Exploration

avg = 0.00130793

p = 0.0022222

Ant 17 : [3, 4, 0, 1], 45

Exploration

avg = 0.000967852279202

p = 0.00148148148148

Ant 18 : [1, 0, 4, 3], 45

Exploration

avg = 0.00222222222222

Ant 4 : [4, 3, 2, 1, 0], 65

Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [1, 0, 4, 3], 45

Exploration

avg = 0.000909090818182

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00123456790123

Ant 6 : [1, 0, 4, 3, 2], 63

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [3, 4, 0, 1, 2], 67

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [4, 3, 2, 1, 0], 65

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00123456790123

Ant 10 : [1, 0, 4, 3, 2], 63
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.002222222

Ant 11 : [2, 3, 4, 0, 1], 63
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00222222222

Ant 12 : [2, 3, 4, 0, 1], 63
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00123456790123

Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 4, 3, 2], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00123456790123

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0022222222222

Ant 16 : [2, 3, 4, 0, 1], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101009090908

Ant 17 : [3, 4, 0, 1, 2], 67
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 4, 3, 2], 63
Update called by 19
Best: [1, 0, 4, 3, 2], 85, 7, 85
Ant thread 19 terminating.iter_counter = 8

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000996325329545starting ant = 4
p = 0.00222starting ant = 5
Ant 1 : [1, 0], 10starting ant = 6
Explorationstarting ant = 7
avg = 0.00056571972043starting ant = 8
p = 0.001starting ant = 9
Ant 0 : [1, 0, 4], 30starting ant = 10
Exploitationstarting ant = 11
Ant 2 : [4, 3], 15starting ant = 12
Exploitationstarting ant = 13
Ant 3 : [1, 0], 10starting ant = 14
Exploitationstarting ant = 15
Ant 4 : [4, 3], 15starting ant = 16
Explorationstarting ant = 17
avg = 0.000844449901434starting ant = 18
p = 0.001111111111111starting ant = 19
p = 0.001333333333333
Ant 5 : [3, 4], 15
Exploitation
Ant 1 : [1, 0, 4], 30
Exploitation
Ant 6 : [1, 0], 10
Exploration
avg = 0.0008811165681
p = 0.001111111111111
p = 0.00148
Ant 7 : [3, 4], 15
Exploration
avg = 0.000788996983974
p = 0.001
p = 0.00148146666667
Ant 8 : [4, 3], 15
Exploration
avg = 0.000789000650641
p = 0.001
p = 0.001481481333333
Ant 9 : [4, 3], 15
Exploitation

Ant 0 : [1, 0, 4, 3], 45
Exploration
avg = 0.000996880884545
p = 0.002222222222
Ant 10 : [1, 0], 10
Exploitation
Ant 11 : [2, 3], 18
Exploitation
Ant 2 : [4, 3, 2], 33
Exploration
avg = 0.000726379752409
p = 0.000909090908182
p = 0.00123333333222
Ant 12 : [2, 3], 18
Exploitation
Ant 13 : [1, 0], 10
Exploration
avg = 0.000602753053763
p = 0.00111111
Ant 3 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0], 10
Exploration
avg = 0.000996880885101
p = 0.00222222222222
Ant 15 : [1, 0], 10
Exploration
avg = 0.000722229498208
p = 0.00123333333333
Ant 4 : [4, 3, 2], 33
Exploitation
Ant 16 : [2, 3], 18
Exploration
avg = 0.000912344345878
p = 0.00123455555556
p = 0.00148146666667
Ant 17 : [3, 4], 15
Exploitation
Ant 18 : [1, 0], 10
Exploration
avg = 0.000996880885101
p = 0.00222222222222
Ant 19 : [1, 0], 10
Exploration
avg = 0.00055817375641
p = 0.001
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 1 : [1, 0, 4, 3], 45
Exploitation
Ant 6 : [1, 0, 4], 30
Exploration
avg = 0.000594840423077
p = 0.00111

Ant 7 : [3, 4, 0], 35
Exploitation
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.0012345679
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploitation

Ant thread 0 terminating.Ant 10 : [1, 0, 4], 30

Exploration
avg = 0.000804945498208
p = 0.00148148133333
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.000631692454091
p = 0.000909090908182
Ant 2 : [4, 3, 2, 1], 55
Exploitation
Ant 12 : [2, 3, 4], 33
Exploration
avg = 0.000602756757463
p = 0.00111111111111
Ant 13 : [1, 0, 4], 30
Exploration
avg = 0.000945141125356
p = 0.00148148148148
Ant 3 : [1, 0, 4, 3], 45
Exploration
avg = 0.000602756757467
p = 0.00111111111111
Ant 14 : [1, 0, 4], 30
Exploration
avg = 0.000602756757467
p = 0.00111111111111
Ant 15 : [1, 0, 4], 30
Exploration
avg = 0.000681692454541
p = 0.00100909090908
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.000804945547586
p = 0.00148148148147
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.000595207089744
p = 0.0011111
Ant 17 : [3, 4, 0], 35
Exploitation
Ant 18 : [1, 0, 4], 30
Exploitation
Ant 19 : [1, 0, 4], 30

Exploitation
Ant 5 : [3, 4, 0, 1], 45
Exploitation
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000945141125356

p = 0.00148148148148
Ant 6 : [1, 0, 4, 3], 45
Exploration
avg = 0.001287147
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.000682197454545
p = 0.00101010090909
Ant 9 : [4, 3, 2, 1], 55
Exploration
avg = 0.000945141125356
p = 0.00148148148148
Ant 10 : [1, 0, 4, 3], 45
Exploration
avg = 0.00068841575
p = 0.0011111111
Ant 11 : [2, 3, 4, 0], 53
Exploration
avg = 0.00222222222222
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000688415805

p = 0.001111111111
Ant 12 : [2, 3, 4, 0], 53
Exploration
avg = 0.000945141125356
p = 0.00148148148148
Ant 13 : [1, 0, 4, 3], 45
Exploration
avg = 0.00123456790123
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [1, 0, 4, 3], 45

Exploitation
Ant 15 : [1, 0, 4, 3], 45
Exploitation
Ant 4 : [4, 3, 2, 1, 0], 65
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00068841580555

p = 0.00111111111111

Ant 16 : [2, 3, 4, 0], 53

Exploration

avg = 0.001288247

p = 0.00222222

Ant 17 : [3, 4, 0, 1], 45

Exploitation

Ant 18 : [1, 0, 4, 3], 45

Exploitation

Ant 19 : [1, 0, 4, 3], 45

Exploitation

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 4, 3, 2], 63

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [3, 4, 0, 1, 2], 67

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [4, 3, 2, 1, 0], 65

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00123456790123

Ant 10 : [1, 0, 4, 3, 2], 63

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.0022222222

Ant 11 : [2, 3, 4, 0, 1], 63

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.002222222222

Ant 12 : [2, 3, 4, 0, 1], 63

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00123456790123

Ant 13 : [1, 0, 4, 3, 2], 63

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 4, 3, 2], 63

ExplorationUpdate called by 14

avg = 0.00123456790123Ant thread 14 terminating.

Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00222222222222

Ant 16 : [2, 3, 4, 0, 1], 63
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [3, 4, 0, 1, 2], 67

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00123456790123

Ant 18 : [1, 0, 4, 3, 2], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00123456790123

Ant 19 : [1, 0, 4, 3, 2], 63
Update called by 19
Best: [1, 0, 4, 3, 2], 85, 8, 85
Ant thread 19 terminating.iter_counter = 9

starting ant = 0
Explorationstarting ant = 1

avg = 0.000919920067045starting ant = 2

p = 0.002starting ant = 3

Ant 0 : [1, 0], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.000974920067045starting ant = 6

p = 0.00222starting ant = 7

Ant 1 : [1, 0], 10starting ant = 8

Explorationstarting ant = 9

avg = 0.00073510061891starting ant = 10

p = 0.001starting ant = 11

p = 0.0013333333333333starting ant = 12

Ant 2 : [4, 3], 15starting ant = 13

Explorationstarting ant = 14

avg = 0.000975470067045starting ant = 15

p = 0.0022222starting ant = 16

Ant 3 : [1, 0], 10starting ant = 17

Exploitationstarting ant = 18

Ant 0 : [1, 0, 4], 30starting ant = 19

Exploration

avg = 0.000771767285577

p = 0.001

p = 0.00148

Ant 4 : [4, 3], 15

Exploration

avg = 0.000821116022401

p = 0.001111111111111

p = 0.001333333333333

Ant 5 : [3, 4], 15

Exploration

avg = 0.000975475567045

p = 0.002222222

Ant 6 : [1, 0], 10

Exploration

avg = 0.000857782689068

p = 0.001111111111111

p = 0.00148

Ant 7 : [3, 4], 15

Exploration

avg = 0.000579147748387

p = 0.00111

Ant 1 : [1, 0, 4], 30

Exploration

avg = 0.000772133952244

p = 0.001

p = 0.00148146666667

Ant 8 : [4, 3], 15

Exploration

avg = 0.00077213761891

p = 0.001

p = 0.00148148133333

Ant 9 : [4, 3], 15

Exploitation

Ant 10 : [1, 0], 10

Exploitation

Ant 11 : [2, 3], 18

Exploitation

Ant 12 : [2, 3], 18

Exploration

avg = 0.000650376918757

p = 0.0011111111111111
Ant 2 : [4, 3, 2], 33
Exploration
avg = 0.000975475622595
p = 0.0022222222222222
Ant 13 : [1, 0], 10
Exploitation
Ant 14 : [1, 0], 10
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 16 : [2, 3], 18
Exploration
avg = 0.000579514415054
p = 0.00111111
Ant 3 : [1, 0, 4], 30
Exploration
avg = 0.00088870491129
p = 0.0012333333333333
p = 0.001481466666667
Ant 17 : [3, 4], 15
Exploitation
Ant 18 : [1, 0], 10
Exploration
avg = 0.000924701086154
p = 0.00148148148
Ant 0 : [1, 0, 4, 3], 45
Exploration
avg = 0.000975475622601
p = 0.0022222222222222
Ant 19 : [1, 0], 10
Exploration
avg = 0.000691117659498
p = 0.0012333333333333
Ant 4 : [4, 3, 2], 33
Exploration
avg = 0.000535689714103
p = 0.001
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 6 : [1, 0, 4], 30
Exploitation
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 1 : [1, 0, 4, 3], 45
Exploration
avg = 0.000691525066906
p = 0.0012345555555556
Ant 8 : [4, 3, 2], 33
Exploitation
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.000579518118387
p = 0.0011111111111111

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Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000773833659498
p = 0.00148148133333
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.000773833708387
p = 0.00148148148
Ant 12 : [2, 3, 4], 33
Exploration
avg = 0.000613977754091
p = 0.000909090908182
Ant 2 : [4, 3, 2, 1], 55
Exploitation
Ant 13 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0, 4], 30
Exploration
avg = 0.000579518118757
p = 0.00111111111111
Ant 15 : [1, 0, 4], 30
Exploration
avg = 0.000773833708876
p = 0.00148148148147
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.000924701086895
p = 0.00148148148148
Ant 3 : [1, 0, 4, 3], 45
Exploitation
Ant 17 : [3, 4, 0], 35
Exploitation
Ant 18 : [1, 0, 4], 30
Exploitation
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploitation

Ant thread 0 terminating.Ant 19 : [1, 0, 4], 30

Exploration
avg = 0.000663977754541
p = 0.00100909090908
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.0011594323
p = 0.002
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.000924701086895
p = 0.00148148148148
Ant 6 : [1, 0, 4, 3], 45
Exploitation
Ant 7 : [3, 4, 0, 1], 45
Exploration

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avg = 0.00123456790122
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [4, 3, 2, 1], 55

Exploitation
Ant 9 : [4, 3, 2, 1], 55
Exploration
avg = 0.000924701086895
p = 0.00148148148148
Ant 10 : [1, 0, 4, 3], 45
Exploration
avg = 0.000675129725
p = 0.0011111111
Ant 11 : [2, 3, 4, 0], 53
Exploitation
Ant 12 : [2, 3, 4, 0], 53
Exploration
avg = 0.00222222222222
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000924701086895

p = 0.00148148148148
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [1, 0, 4, 3], 45
Exploration
avg = 0.000924701086895
p = 0.00148148148148
Ant 15 : [1, 0, 4, 3], 45
Exploitation
Ant 16 : [2, 3, 4, 0], 53
Exploration
avg = 0.00123456790123
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.0012705323

p = 0.00222222
Ant 17 : [3, 4, 0, 1], 45
Exploration
avg = 0.000924701086895
p = 0.00148148148148
Ant 18 : [1, 0, 4, 3], 45
Exploration
avg = 0.000924701086895
p = 0.00148148148148
Ant 19 : [1, 0, 4, 3], 45
Exploration
avg = 0.00222222222222

Ant 4 : [4, 3, 2, 1, 0], 65
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 0, 1, 2], 67
ExplorationUpdate called by 5

avg = 0.00123456790123Ant thread 5 terminating.

Ant 6 : [1, 0, 4, 3, 2], 63
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00100909090818

Ant 7 : [3, 4, 0, 1, 2], 67
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [4, 3, 2, 1, 0], 65
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 3, 2], 63
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [2, 3, 4, 0, 1], 63
ExplorationUpdate called by 11

avg = 0.002222222222Ant thread 11 terminating.

Ant 12 : [2, 3, 4, 0, 1], 63
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00123456790123

Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 4, 3, 2], 63
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 4, 3, 2], 63
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [2, 3, 4, 0, 1], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101009090908

Ant 17 : [3, 4, 0, 1, 2], 67
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00123456790123

Ant 19 : [1, 0, 4, 3, 2], 63
Update called by 19
Best: [1, 0, 4, 3, 2], 85, 9, 85
Ant thread 19 terminating.iter_counter = 10

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [1, 0], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000955655330795starting ant = 4

p = 0.00222starting ant = 5

Ant 1 : [1, 0], 10starting ant = 6

Explorationstarting ant = 7

avg = 0.000521566306882starting ant = 8

p = 0.001starting ant = 9

Ant 0 : [1, 0, 4], 30starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [4, 3], 15starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [4, 3], 15starting ant = 16

Explorationstarting ant = 17

avg = 0.000800115531272starting ant = 18

p = 0.0011111111111111starting ant = 19

p = 0.0013333333333333

Ant 5 : [3, 4], 15

Exploration

avg = 0.000558232973548

p = 0.00111

Ant 1 : [1, 0, 4], 30

Exploitation

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [3, 4], 15

Exploration

avg = 0.000756957223686

p = 0.001

p = 0.00148146666667

Ant 8 : [4, 3], 15

Exploitation

Ant 9 : [4, 3], 15

Exploration

avg = 0.000906305051538

p = 0.00148148148

Ant 0 : [1, 0, 4, 3], 45

Exploitation

Ant 10 : [1, 0], 10

Exploitation

Ant 11 : [2, 3], 18

Exploitation

Ant 2 : [4, 3, 2], 33

Exploitation

Ant 12 : [2, 3], 18

Exploitation

Ant 13 : [1, 0], 10

Exploration

avg = 0.000558599640215

p = 0.0011111

Ant 3 : [1, 0, 4], 30

Exploitation

Ant 14 : [1, 0], 10

Exploitation

Ant 15 : [1, 0], 10

Exploitation

Ant 4 : [4, 3, 2], 33

Exploitation

Ant 16 : [2, 3], 18

Exploitation

Ant 17 : [3, 4], 15

Exploration

avg = 0.000956210886351

p = 0.00222222222222

Ant 18 : [1, 0], 10

Exploration

avg = 0.000956210886351

p = 0.00222222222222

Ant 19 : [1, 0], 10
Exploitation
Ant 5 : [3, 4, 0], 35
Exploitation
Ant 1 : [1, 0, 4, 3], 45
Exploration
avg = 0.000558603306882
p = 0.0011111111
Ant 6 : [1, 0, 4], 30
Exploitation
Ant 7 : [3, 4, 0], 35
Exploration
avg = 0.000663524412067
p = 0.00123455555556
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000663528486141
p = 0.00123456777778
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.0012345679
Ant 0 : [1, 0, 4, 3, 2], 63
Update called by 0Exploitation

Ant thread 0 terminating.Ant 10 : [1, 0, 4], 30

Exploitation
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.000598034524091
p = 0.000909090908182
Ant 2 : [4, 3, 2, 1], 55
Exploration
avg = 0.000745833053548
p = 0.00148148148
Ant 12 : [2, 3, 4], 33
Exploitation
Ant 13 : [1, 0, 4], 30
Exploration
avg = 0.000906305052279
p = 0.00148148148148
Ant 3 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [1, 0, 4], 30
Exploration
avg = 0.000558603343919
p = 0.00111111111111
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 4 : [4, 3, 2, 1], 55
Exploitation
Ant 16 : [2, 3, 4], 33
Exploitation
Ant 17 : [3, 4, 0], 35

Exploration
avg = 0.000558603343919
p = 0.001111111111111
Ant 18 : [1, 0, 4], 30
Exploration
avg = 0.000558603343919
p = 0.001111111111111
Ant 19 : [1, 0, 4], 30
Exploitation
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.00123456790122
Ant 1 : [1, 0, 4, 3, 2], 63
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000906305052279

p = 0.00148148148148
Ant 6 : [1, 0, 4, 3], 45
Exploration
avg = 0.00125348907
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploration
avg = 0.000648534524545
p = 0.00101009090909
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.000648539524545
p = 0.00101010090909
Ant 9 : [4, 3, 2, 1], 55
Exploration
avg = 0.000906305052279
p = 0.00148148148148
Ant 10 : [1, 0, 4, 3], 45
Exploitation
Ant 11 : [2, 3, 4, 0], 53
Exploration
avg = 0.00222222222222
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.0006631723575

p = 0.001111111111
Ant 12 : [2, 3, 4, 0], 53
Exploration
avg = 0.000906305052279
p = 0.00148148148148
Ant 13 : [1, 0, 4, 3], 45
Exploitation
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [1, 0, 4, 3], 45

Exploitation

Ant 15 : [1, 0, 4, 3], 45

Exploration

avg = 0.002222222222222

Ant 4 : [4, 3, 2, 1, 0], 65

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00066317235805

p = 0.001111111111111

Ant 16 : [2, 3, 4, 0], 53

Exploration

avg = 0.00125458907

p = 0.0022222

Ant 17 : [3, 4, 0, 1], 45

Exploitation

Ant 18 : [1, 0, 4, 3], 45

Exploitation

Ant 19 : [1, 0, 4, 3], 45

Exploitation

Ant 5 : [3, 4, 0, 1, 2], 67

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00123456790123

Ant 6 : [1, 0, 4, 3, 2], 63

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [3, 4, 0, 1, 2], 67

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.002222222222222

Ant 9 : [4, 3, 2, 1, 0], 65

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00123456790123

Ant 10 : [1, 0, 4, 3, 2], 63

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [2, 3, 4, 0, 1], 63

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00222222222

Ant 12 : [2, 3, 4, 0, 1], 63
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 4, 3, 2], 63
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00123456790123

Ant 14 : [1, 0, 4, 3, 2], 63
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00123456790123

Ant 15 : [1, 0, 4, 3, 2], 63
ExploitationUpdate called by 15

Ant 16 : [2, 3, 4, 0, 1], 63Ant thread 15 terminating.
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101009090908

Ant 17 : [3, 4, 0, 1, 2], 67
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00123456790123

Ant 19 : [1, 0, 4, 3, 2], 63
Update called by 19
Best: [1, 0, 4, 3, 2], 85, 10, 85
Ant thread 19 terminating.iter_counter = 11

starting ant = 0
Explorationstarting ant = 1

avg = 0.00088331706817starting ant = 2

p = 0.002starting ant = 3

p = 0.000909090818182starting ant = 4

Ant 0 : [1, 2], 22starting ant = 5

Explorationstarting ant = 6

avg = 0.00090831709067starting ant = 7

p = 0.002starting ant = 8

p = 0.00100909090818starting ant = 9
Ant 1 : [1, 2], 22starting ant = 10
Exploitationstarting ant = 11
Ant 2 : [4, 3], 15starting ant = 12
Exploitationstarting ant = 13
Ant 3 : [1, 0], 10starting ant = 14
Exploitationstarting ant = 15
Ant 4 : [4, 3], 15starting ant = 16
Exploitationstarting ant = 17
Ant 0 : [1, 2, 3], 40starting ant = 18
Exploitationstarting ant = 19

Ant 5 : [3, 4], 15
Exploitation
Ant 6 : [1, 0], 10
Exploitation
Ant 7 : [3, 4], 15
Exploitation
Ant 8 : [4, 3], 15
Exploration
avg = 0.000743301834651
p = 0.001
p = 0.00148148133333
Ant 9 : [4, 3], 15
Exploration
avg = 0.000596543139664
p = 0.00123333333222
Ant 1 : [1, 2, 3], 40
Exploration
avg = 0.000964117090895
p = 0.0022222
p = 0.00101009090908
Ant 10 : [1, 2], 22
Exploration
avg = 0.000674985637624
p = 0.000909090908182
p = 0.0012345555554
Ant 11 : [2, 3], 18
Exploitation
Ant 2 : [4, 3, 2], 33
Exploration
avg = 0.000674988693182
p = 0.000909090908182
p = 0.00123456777778

Ant 12 : [2, 3], 18
Exploration
avg = 0.000964119590898
p = 0.0022222
p = 0.00101010090909
Ant 13 : [1, 2], 22
Exploration
avg = 0.000502743009527
p = 0.001
Ant 3 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0], 10
Exploitation
Ant 15 : [1, 0], 10
Exploration
avg = 0.000637916415305
p = 0.001233333333333
Ant 4 : [4, 3, 2], 33
Exploitation
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [3, 4], 15
Exploitation
Ant 0 : [1, 2, 3, 4], 55
Exploitation
Ant 18 : [1, 0], 10
Exploitation
Ant 19 : [1, 0], 10
Exploration
avg = 0.000497242001756
p = 0.001
Ant 5 : [3, 4, 0], 35
Exploration
avg = 0.000539409676194
p = 0.00111
Ant 6 : [1, 0, 4], 30
Exploitation
Ant 7 : [3, 4, 0], 35
Exploitation
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000638327896786
p = 0.00123456777778
Ant 9 : [4, 3, 2], 33
Exploration
avg = 0.00086571509129
p = 0.00148148148
Ant 1 : [1, 2, 3, 4], 55
Exploration
avg = 0.000596954662664
p = 0.00123456790122
Ant 10 : [1, 2, 3], 40
Exploration
avg = 0.000720632464682


```
p = 0.00148148148147
Ant 11 : [2, 3, 4], 33
Exploitation
Ant 2 : [4, 3, 2, 1], 55
Exploration
avg = 0.000720632464687
p = 0.00148148148148
Ant 12 : [2, 3, 4], 33
Exploration
avg = 0.000596954662668
p = 0.00123456790123
Ant 13 : [1, 2, 3], 40
Exploitation
Ant 3 : [1, 0, 4, 3], 45
Exploitation
Ant 14 : [1, 0, 4], 30
Exploitation
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.000720632464687
p = 0.00148148148148
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.00053427533509
p = 0.00111111
Ant 17 : [3, 4, 0], 35
Exploration
avg = 0.0011111111
Ant 0 : [1, 2, 3, 4, 0], 75
Update called by 0Exploitation

Ant thread 0 terminating.Ant 18 : [1, 0, 4], 30

Exploitation
Ant 19 : [1, 0, 4], 30
Exploration
avg = 0.001129140163
p = 0.002
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.000889748621118
p = 0.00148148148147
Ant 6 : [1, 0, 4, 3], 45
Exploration
avg = 0.001239140163
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploitation
Ant 9 : [4, 3, 2, 1], 55
Exploration
```

```
avg = 0.001111111111
Ant 1 : [1, 2, 3, 4, 0], 75
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [1, 2, 3, 4], 55

Exploitation
Ant 11 : [2, 3, 4, 0], 53
Exploration
avg = 0.00222222222222
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [2, 3, 4, 0], 53

Exploration
avg = 0.000865715092031
p = 0.00148148148148
Ant 13 : [1, 2, 3, 4], 55
Exploration
avg = 0.0012345679
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [1, 0, 4, 3], 45

Exploitation
Ant 15 : [1, 0, 4, 3], 45
Exploitation
Ant 4 : [4, 3, 2, 1, 0], 65
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000652410677806

p = 0.00111111111111
Ant 16 : [2, 3, 4, 0], 53
Exploration
avg = 0.001240240163
p = 0.00222222
Ant 17 : [3, 4, 0, 1], 45
Exploration
avg = 0.000889748621125
p = 0.00148148148148
Ant 18 : [1, 0, 4, 3], 45
Exploration
avg = 0.000889748621125
p = 0.00148148148148
Ant 19 : [1, 0, 4, 3], 45
Exploration
avg = 0.00101010100909
Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00123456790122
```

Ant 6 : [1, 0, 4, 3, 2], 63
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00101010101009

Ant 7 : [3, 4, 0, 1, 2], 67
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00222222222222

Ant 9 : [4, 3, 2, 1, 0], 65
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 2, 3, 4, 0], 75

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [2, 3, 4, 0, 1], 63

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [2, 3, 4, 0, 1], 63

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00111111111111

Ant 13 : [1, 2, 3, 4, 0], 75
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 4, 3, 2], 63

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [1, 0, 4, 3, 2], 63

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00222222222222

Ant 16 : [2, 3, 4, 0, 1], 63
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.0010101010101

Ant 17 : [3, 4, 0, 1, 2], 67
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [1, 0, 4, 3, 2], 63

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 4, 3, 2], 63

Update called by 19

Best: [1, 0, 4, 3, 2], 85, 11, 85

Ant thread 19 terminating.iter_counter = 12

starting ant = 0

Explorationstarting ant = 1

avg = 0.000867712654535starting ant = 2

p = 0.002starting ant = 3

p = 0.000909090909091starting ant = 4

Ant 0 : [1, 2], 22starting ant = 5

Explorationstarting ant = 6

avg = 0.000892712654535starting ant = 7

p = 0.002starting ant = 8

p = 0.0010090909090909starting ant = 9

Ant 1 : [1, 2], 22starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [4, 3], 15starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Exploitationstarting ant = 15

Ant 4 : [4, 3], 15starting ant = 16

Exploitationstarting ant = 17

Ant 0 : [1, 2, 3], 40starting ant = 18

Exploitationstarting ant = 19

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [3, 4], 15

Exploration

avg = 0.000731005017852
p = 0.001
p = 0.00148146666667
Ant 8 : [4, 3], 15
Exploration
avg = 0.000731008684519
p = 0.001
p = 0.00148148133333
Ant 9 : [4, 3], 15
Exploitation
Ant 1 : [1, 2, 3], 40
Exploitation
Ant 10 : [1, 0], 10
Exploitation
Ant 11 : [2, 3], 18
Exploitation
Ant 2 : [4, 3, 2], 33
Exploration
avg = 0.000661081291013
p = 0.000909090908182
p = 0.00123456777778
Ant 12 : [2, 3], 18
Exploration
avg = 0.000948518154535
p = 0.002222222
p = 0.00101009090909
Ant 13 : [1, 2], 22
Exploration
avg = 0.000485802041907
p = 0.001
Ant 3 : [1, 0, 4], 30
Exploitation
Ant 14 : [1, 0], 10
Exploitation
Ant 15 : [1, 0], 10
Exploitation
Ant 4 : [4, 3, 2], 33
Exploration
avg = 0.000661081321569
p = 0.000909090908182
p = 0.0012345679
Ant 16 : [2, 3], 18
Exploitation
Ant 17 : [3, 4], 15
Exploration
avg = 0.000853217582828
p = 0.00148148133333
Ant 0 : [1, 2, 3, 4], 55
Exploitation
Ant 18 : [1, 0], 10
Exploitation
Ant 19 : [1, 0], 10
Exploration
avg = 0.000480851134914

p = 0.001
Ant 5 : [3, 4, 0], 35
Exploration
avg = 0.000522468708574
p = 0.00111
Ant 6 : [1, 0, 4], 30
Exploration
avg = 0.000517517801581
p = 0.00111
Ant 7 : [3, 4, 0], 35
Exploration
avg = 0.000615643292293
p = 0.00123455555556
Ant 8 : [4, 3, 2], 33
Exploration
avg = 0.000615647366367
p = 0.00123456777778
Ant 9 : [4, 3, 2], 33
Exploitation
Ant 1 : [1, 2, 3, 4], 55
Exploration
avg = 0.000522835375241
p = 0.00111111
Ant 10 : [1, 0, 4], 30
Exploitation
Ant 11 : [2, 3, 4], 33
Exploration
avg = 0.000570771600791
p = 0.000909090908182
Ant 2 : [4, 3, 2, 1], 55
Exploration
avg = 0.000697951934268
p = 0.00148148148148
Ant 12 : [2, 3, 4], 33
Exploration
avg = 0.000578411459772
p = 0.00123456790122
Ant 13 : [1, 2, 3], 40
Exploration
avg = 0.000874847832346
p = 0.00148148148
Ant 3 : [1, 0, 4, 3], 45
Exploration
avg = 0.000522839041908
p = 0.0011111111
Ant 14 : [1, 0, 4], 30
Exploration
avg = 0.000522839078574
p = 0.001111111111
Ant 15 : [1, 0, 4], 30
Exploitation
Ant 4 : [4, 3, 2, 1], 55
Exploration
avg = 0.000697951934268

p = 0.00148148148148
Ant 16 : [2, 3, 4], 33
Exploration
avg = 0.000517884468247
p = 0.00111111
Ant 17 : [3, 4, 0], 35
Exploitation
Ant 0 : [1, 2, 3, 4, 0], 75
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000522839078941

p = 0.00111111111111
Ant 18 : [1, 0, 4], 30
Exploration
avg = 0.000522839078945
p = 0.00111111111111
Ant 19 : [1, 0, 4], 30
Exploration
avg = 0.0011162261467
p = 0.002
Ant 5 : [3, 4, 0, 1], 45
Exploration
avg = 0.000874847833079
p = 0.00148148148147
Ant 6 : [1, 0, 4, 3], 45
Exploration
avg = 0.0012262261467
p = 0.00222
Ant 7 : [3, 4, 0, 1], 45
Exploitation
Ant 8 : [4, 3, 2, 1], 55
Exploration
avg = 0.000621276601245
p = 0.00101010090909
Ant 9 : [4, 3, 2, 1], 55
Exploration
avg = 0.001111111111
Ant 1 : [1, 2, 3, 4, 0], 75
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [1, 0, 4, 3], 45

Exploration
avg = 0.000642725165575
p = 0.00111111111111
Ant 11 : [2, 3, 4, 0], 53
Exploitation
Ant 2 : [4, 3, 2, 1, 0], 65
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [2, 3, 4, 0], 53

Exploration

avg = 0.000853217656902
p = 0.00148148148148
Ant 13 : [1, 2, 3, 4], 55

Exploration

avg = 0.0012345679
Ant 3 : [1, 0, 4, 3, 2], 63
Update called by 3Exploitation

Ant thread 3 terminating.Ant 14 : [1, 0, 4, 3], 45

Exploration

avg = 0.000874847833087
p = 0.00148148148148
Ant 15 : [1, 0, 4, 3], 45

Exploration

avg = 0.00222222222222
Ant 4 : [4, 3, 2, 1, 0], 65
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000642725165581

p = 0.00111111111111
Ant 16 : [2, 3, 4, 0], 53

Exploitation

Ant 17 : [3, 4, 0, 1], 45

Exploitation

Ant 18 : [1, 0, 4, 3], 45

Exploitation

Ant 19 : [1, 0, 4, 3], 45

Exploitation

Ant 5 : [3, 4, 0, 1, 2], 67
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 4, 3, 2], 63

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [3, 4, 0, 1, 2], 67

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [4, 3, 2, 1, 0], 65

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00222222222222

Ant 9 : [4, 3, 2, 1, 0], 65
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00123456790123

Ant 10 : [1, 0, 4, 3, 2], 63
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [2, 3, 4, 0, 1], 63

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.002222222222

Ant 12 : [2, 3, 4, 0, 1], 63

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.001111111111111

Ant 13 : [1, 2, 3, 4, 0], 75

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00123456790123

Ant 14 : [1, 0, 4, 3, 2], 63

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00123456790123

Ant 15 : [1, 0, 4, 3, 2], 63

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00222222222222

Ant 16 : [2, 3, 4, 0, 1], 63

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00101010101009

Ant 17 : [3, 4, 0, 1, 2], 67

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00123456790123

Ant 18 : [1, 0, 4, 3, 2], 63

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00123456790123

Ant 19 : [1, 0, 4, 3, 2], 63

Update called by 19

Best: [1, 0, 4, 3, 2], 85, 12, 85

Ant thread 19 terminating.

Results

Best path = [1, 0, 4, 3, 2]

('B ',)

('A ',)

```
('E ',)  
('D ',)  
('C ',)
```

Best path cost = 85

```
>>>
```

```
RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester  
3\Perencanaan  
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\  
pickled.py
```

```
>>>
```

```
RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester  
3\Perencanaan  
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\  
anttsp.py
```

```
[[0, 10, 30, 31], [10, 0, 22, 18], [30, 22, 0, 18], [31, 18, 18, 0]]
```

```
4
```

```
Average = 16
```

```
Tau0 = 0.03125
```

```
iter_counter = 1
```

```
starting ant = 0
```

```
Exploitationstarting ant = 1
```

```
Ant 0 : [3, 1], 18starting ant = 2
```

```
Exploitationstarting ant = 3
```

```
Ant 1 : [0, 1], 10starting ant = 4
```

```
Exploitationstarting ant = 5
```

```
Ant 0 : [3, 1, 0], 28starting ant = 6
```

```
Explorationstarting ant = 7
```

```
avg = 0.00209385521886starting ant = 8
```

```
p = 0.003125starting ant = 9
```

```
Ant 2 : [1, 0], 10starting ant = 10
```

```
Explorationstarting ant = 11
```

```
avg = 0.00209385521886starting ant = 12
```

```
p = 0.003125starting ant = 13
```

```
Ant 3 : [1, 0], 10starting ant = 14
```

```
Exploitationstarting ant = 15
```

```
Ant 1 : [0, 1, 3], 28starting ant = 16
```

Exploitationstarting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Exploitationstarting ant = 19

Ant 5 : [3, 1], 18

Exploitation

Ant 0 : [3, 1, 0, 2], 58

Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00209385521886

p = 0.003125

Ant 6 : [1, 0], 10

Exploration

avg = 0.00172491039427

p = 0.003125

Ant 7 : [0, 1], 10

Exploration

avg = 0.00172491039427

p = 0.003125

Ant 8 : [0, 1], 10

Exploration

avg = 0.00149342891278

p = 0.00173611111111

p = 0.00173611111111

Ant 9 : [3, 2], 18

Exploitation

Ant 2 : [1, 0, 2], 40

Exploitation

Ant 10 : [0, 1], 10

Exploitation

Ant 11 : [1, 0], 10

Exploration

avg = 0.00209385521886

p = 0.003125

Ant 12 : [1, 0], 10

Exploitation

Ant 13 : [2, 3], 18

Exploration

avg = 0.0010248655914

p = 0.00104166666667

Ant 3 : [1, 0, 2], 40

Exploration

avg = 0.00209385521886

p = 0.003125

Ant 14 : [1, 0], 10

Exploration

avg = 0.00172491039427

p = 0.003125

Ant 15 : [0, 1], 10

Exploitation

Ant 1 : [0, 1, 3, 2], 46

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00209385521886

p = 0.003125
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [3, 1], 18
Exploration
avg = 0.00157828282828
p = 0.00173611111111
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 18 : [3, 1], 18
Exploration
avg = 0.00139941077441
p = 0.00142045454545
p = 0.00173611111111
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [3, 1, 0], 28
Exploration
avg = 0.0010248655914
p = 0.00104166666667
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00157828282828
p = 0.00173611111111
Ant 8 : [0, 1, 3], 28
Exploration
avg = 0.00123106060606
p = 0.00142045454545
Ant 9 : [3, 2, 1], 40
Exploration
avg = 0.00173611111111
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00157828282828

p = 0.00173611111111
Ant 10 : [0, 1, 3], 28
Exploration
avg = 0.0010248655914
p = 0.00104166666667
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 12 : [1, 0, 2], 40
Exploration
avg = 0.00137208781362
p = 0.00173611111111
Ant 13 : [2, 3, 1], 36

Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.0010248655914

p = 0.00104166666667
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.00157828282828
p = 0.00173611111111
Ant 15 : [0, 1, 3], 28
Exploration
avg = 0.0010248655914
p = 0.00104166666667
Ant 16 : [1, 0, 2], 40
Exploration
avg = 0.00227272727273
p = 0.003125
Ant 17 : [3, 1, 0], 28
Exploration
avg = 0.00173611111111
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 18 : [3, 1, 0], 28

Exploration
avg = 0.00137208781362
p = 0.00173611111111
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 5 : [3, 1, 0, 2], 58
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611111111

Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173611111111

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 2, 1, 0], 50

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00173611111111

Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.001736111111111

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 2, 3], 58
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [2, 3, 1, 0], 46
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.001736111111111

Ant 14 : [1, 0, 2, 3], 58
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.001736111111111

Ant 15 : [0, 1, 3, 2], 46
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.001736111111111

Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.001041666666667

Ant 17 : [3, 1, 0, 2], 58
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.001041666666667

Ant 18 : [3, 1, 0, 2], 58
ExplorationUpdate called by 18

avg = 0.003125Ant thread 18 terminating.

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 1, 76
Ant thread 19 terminating.iter_counter = 2

starting ant = 0
Explorationstarting ant = 1

avg = 0.00134408602151starting ant = 2

p = 0.0015625starting ant = 3
p = 0.0015625starting ant = 4
Ant 0 : [3, 2], 18starting ant = 5
Explorationstarting ant = 6
avg = 0.00155241935484starting ant = 7
p = 0.0028125starting ant = 8
Ant 1 : [0, 1], 10starting ant = 9
Explorationstarting ant = 10
avg = 0.00188446969697starting ant = 11
p = 0.0028125starting ant = 12
Ant 2 : [1, 0], 10starting ant = 13
Explorationstarting ant = 14
avg = 0.00198759469697starting ant = 15
p = 0.003121875starting ant = 16
Ant 3 : [1, 0], 10starting ant = 17
Exploitationstarting ant = 18
Ant 4 : [0, 1], 10starting ant = 19

Exploitation
Ant 0 : [3, 2, 1], 40
Exploitation
Ant 5 : [3, 2], 18
Exploration
avg = 0.00198862594697
p = 0.00312496875
Ant 6 : [1, 0], 10
Exploration
avg = 0.00165657560484
p = 0.00312496875
Ant 7 : [0, 1], 10
Exploitation
Ant 8 : [0, 1], 10
Exploration
avg = 0.00142045454545
p = 0.0015625
Ant 1 : [0, 1, 3], 28
Exploration
avg = 0.00140195060484

p = 0.0015625
p = 0.00173609375
Ant 9 : [3, 2], 18
Exploration
avg = 0.00165658602046
p = 0.00312499999688
Ant 10 : [0, 1], 10
Exploitation
Ant 11 : [1, 0], 10
Exploration
avg = 0.00204592802926
p = 0.00312499999688
Ant 12 : [1, 0], 10
Exploration
avg = 0.000922379032258
p = 0.0009375
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00130634469697
p = 0.00141903409091
p = 0.0015625
Ant 13 : [2, 3], 18
Exploitation
Ant 14 : [1, 0], 10
Exploration
avg = 0.00169096102149
p = 0.00312499999997
Ant 15 : [0, 1], 10
Exploration
avg = 0.0020459280303
p = 0.003125
Ant 16 : [1, 0], 10
Exploration
avg = 0.000973941532258
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploration
avg = 0.00140195633401
p = 0.0015625
p = 0.0017361109375
Ant 17 : [3, 2], 18
Exploration
avg = 0.0014019563913
p = 0.0015625
p = 0.00173611110937
Ant 18 : [3, 2], 18
Exploration
avg = 0.00150639204545
p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.00136363636364
p = 0.00141903409091
p = 0.001734375

Ant 19 : [2, 3], 18
Exploitation
Ant 0 : [3, 2, 1, 0], 50
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 2, 1], 40

Exploitation
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [0, 1, 3], 28
Exploitation
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 9 : [3, 2, 1], 40

Exploration
avg = 0.00150726010014
p = 0.00173611110937
Ant 10 : [0, 1, 3], 28
Exploration
avg = 0.000974462313508
p = 0.0010416665625
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 12 : [1, 0, 2], 40
Exploration
avg = 0.00173609375
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00123487903226

p = 0.0015625
Ant 13 : [2, 3, 1], 36
Exploitation
Ant 14 : [1, 0, 2], 40
Exploitation
Ant 15 : [0, 1, 3], 28
Exploration
avg = 0.000974462365591
p = 0.00104166666667
Ant 16 : [1, 0, 2], 40
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.0011789772017

p = 0.00142045440341
Ant 17 : [3, 2, 1], 40

Exploration
avg = 0.00117897727202
p = 0.00142045454403
Ant 18 : [3, 2, 1], 40
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 19 : [2, 3, 1], 36

Exploration
avg = 0.003125
Ant 5 : [3, 2, 1, 0], 50
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611110937

Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [3, 2, 1, 0], 50
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 2, 3], 58

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111111

Ant 14 : [1, 0, 2, 3], 58
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.0017361111111111

Ant 15 : [0, 1, 3, 2], 46
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.0017361111111111

Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.003125

Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 2, 77
Ant thread 19 terminating.iter_counter = 3

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [3, 2], 18starting ant = 2

Explorationstarting ant = 3

avg = 0.00152217741935starting ant = 4

p = 0.0028125starting ant = 5

Ant 1 : [0, 1], 10starting ant = 6

Exploitationstarting ant = 7

Ant 0 : [3, 2, 1], 40starting ant = 8

Explorationstarting ant = 9

avg = 0.00184185606061starting ant = 10

p = 0.0028125starting ant = 11

Ant 2 : [1, 0], 10starting ant = 12

Explorationstarting ant = 13

avg = 0.00194498106061starting ant = 14

p = 0.003121875starting ant = 15

Ant 3 : [1, 0], 10starting ant = 16

Explorationstarting ant = 17

avg = 0.00162530241935starting ant = 18

p = 0.003121875starting ant = 19

Ant 4 : [0, 1], 10
Exploitation

Ant 5 : [3, 2], 18
Exploitation

Ant 1 : [0, 1, 3], 28
Exploration

avg = 0.00200330397727
p = 0.00312496875

Ant 6 : [1, 0], 10
Exploration

avg = 0.00162633366935
p = 0.00312496875

Ant 7 : [0, 1], 10
Exploration

avg = 0.0031249996875
Ant 0 : [3, 2, 1, 0], 50
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00162634398185

p = 0.0031249996875

Ant 8 : [0, 1], 10
Exploitation

Ant 9 : [3, 2], 18
Exploitation

Ant 10 : [0, 1], 10
Exploitation

Ant 11 : [1, 0], 10
Exploration

avg = 0.000877016129032
p = 0.0009375

Ant 2 : [1, 0, 2], 40
Exploitation

Ant 12 : [1, 0], 10
Exploration

avg = 0.00127509469697
p = 0.00141903409091

p = 0.0015625

Ant 13 : [2, 3], 18
Exploration

avg = 0.00200331439394
p = 0.003125

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Ant 14 : [1, 0], 10
Exploration
avg = 0.00166071908601
p = 0.003124999999997
Ant 15 : [0, 1], 10
Exploration
avg = 0.000928578629032
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [3, 2], 18
Exploration
avg = 0.00137170924748
p = 0.001562484375
p = 0.00173611110937
Ant 18 : [3, 2], 18
Exploration
avg = 0.00133238636364
p = 0.00141903409091
p = 0.001734375
Ant 19 : [2, 3], 18
Exploration
avg = 0.00144247159091
p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 5 : [3, 2, 1], 40
Exploration
avg = 0.00173611111109
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 6 : [1, 0, 2], 40

Exploration
avg = 0.00144333096591
p = 0.00173609375
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [0, 1, 3], 28
Exploration
avg = 0.00113209517045
p = 0.00142044034091
Ant 9 : [3, 2, 1], 40
Exploration
avg = 0.0014433396456
p = 0.00173611110937
Ant 10 : [0, 1, 3], 28
Exploitation
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 2 : [1, 0, 2, 3], 58

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Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000929099461845

p = 0.00104166666563
Ant 12 : [1, 0, 2], 40
Exploitation
Ant 13 : [2, 3, 1], 36
Exploitation
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.00144333964646
p = 0.00173611111109
Ant 15 : [0, 1, 3], 28
Exploration
avg = 0.0017361109375
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploitation

Ant thread 3 terminating.Ant 16 : [1, 0, 2], 40

Exploitation
Ant 17 : [3, 2, 1], 40
Exploration
avg = 0.00113210227202
p = 0.00142045454403
Ant 18 : [3, 2, 1], 40
Exploration
avg = 0.00127545355091
p = 0.00173437484375
Ant 19 : [2, 3, 1], 36
Exploration
avg = 0.00173611111111
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 2, 1, 0], 50

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173611111111

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 2, 1, 0], 50

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00173611111111

Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00173611111111

Ant 12 : [1, 0, 2, 3], 58

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111111

Ant 14 : [1, 0, 2, 3], 58

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00173611111111

Ant 15 : [0, 1, 3, 2], 46

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00173611111111

Ant 16 : [1, 0, 2, 3], 58

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.003125

Ant 17 : [3, 2, 1, 0], 50

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46

Update called by 19

Best: [3, 1, 0, 2], 76, 3, 77

Ant thread 19 terminating.iter_counter = 4

starting ant = 0

Explorationstarting ant = 1
avg = 0.00128662113528starting ant = 2
p = 0.00156248437359starting ant = 3
p = 0.0015625starting ant = 4
Ant 0 : [3, 2], 18starting ant = 5
Exploitationstarting ant = 6
Ant 1 : [0, 1], 10starting ant = 7
Exploitationstarting ant = 8
Ant 2 : [1, 0], 10starting ant = 9
Exploitationstarting ant = 10
Ant 3 : [1, 0], 10starting ant = 11
Explorationstarting ant = 12
avg = 0.00159808467742starting ant = 13
p = 0.003121875starting ant = 14
Ant 4 : [0, 1], 10starting ant = 15
Explorationstarting ant = 16
avg = 0.00101889204545starting ant = 17
p = 0.0012784090909starting ant = 18
Ant 0 : [3, 2, 1], 40starting ant = 19

Exploitation
Ant 5 : [3, 2], 18
Exploration
avg = 0.00190766003788
p = 0.00312496875
Ant 6 : [1, 0], 10
Exploration
avg = 0.00129900568182
p = 0.0015625
Ant 1 : [0, 1, 3], 28
Exploration
avg = 0.00159911592742
p = 0.00312496875
Ant 7 : [0, 1], 10
Exploration
avg = 0.00159912623992


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p = 0.0031249996875
Ant 8 : [0, 1], 10
Exploration
avg = 0.000836189516129
p = 0.0009375
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00134448571862
p = 0.00156248437359
p = 0.00173609375
Ant 9 : [3, 2], 18
Exploration
avg = 0.00163350134304
p = 0.00312499999688
Ant 10 : [0, 1], 10
Exploitation
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 11 : [1, 0], 10
Exploitation
Ant 12 : [1, 0], 10
Exploitation
Ant 13 : [2, 3], 18
Exploitation
Ant 14 : [1, 0], 10
Exploration
avg = 0.00138494318182
p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 15 : [0, 1], 10
Exploration
avg = 0.00196553503788
p = 0.003125
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [3, 2], 18
Exploration
avg = 0.00134449150508
p = 0.00156248437359
p = 0.00173611110937
Ant 18 : [3, 2], 18
Exploration
avg = 0.003125
Ant 0 : [3, 2, 1, 0], 50
Update called by 0Exploitation

Ant thread 0 terminating.Ant 19 : [2, 3], 18

Exploitation
Ant 5 : [3, 2, 1], 40
Exploration
avg = 0.000888267641129
p = 0.00104165625
```

Ant 6 : [1, 0, 2], 40

Exploitation

Ant 1 : [0, 1, 3, 2], 46

Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3], 28

Exploration

avg = 0.00138581115057

p = 0.0017361109375

Ant 8 : [0, 1, 3], 28

Exploration

avg = 0.00173609375

Ant 2 : [1, 0, 2, 3], 58

Update called by 2Exploitation

Ant thread 2 terminating.Ant 9 : [3, 2, 1], 40

Exploitation

Ant 10 : [0, 1, 3], 28

Exploration

avg = 0.0017361109375

Ant 3 : [1, 0, 2, 3], 58

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000888272797379

p = 0.0010416665625

Ant 11 : [1, 0, 2], 40

Exploration

avg = 0.000888272848942

p = 0.00104166666563

Ant 12 : [1, 0, 2], 40

Exploration

avg = 0.00114868170293

p = 0.00156248437359

Ant 13 : [2, 3, 1], 36

Exploitation

Ant 14 : [1, 0, 2], 40

Exploration

avg = 0.00173611111111

Ant 4 : [0, 1, 3, 2], 46

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00138581123737

p = 0.00173611111109

Ant 15 : [0, 1, 3], 28

Exploration

avg = 0.000888272849462

p = 0.00104166666667

Ant 16 : [1, 0, 2], 40

Exploitation

Ant 17 : [3, 2, 1], 40

Exploration
avg = 0.00108991477202
p = 0.00142045454403
Ant 18 : [3, 2, 1], 40
Exploitation
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 5 : [3, 2, 1, 0], 50
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [3, 2, 1, 0], 50
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00173611111109

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00173611111111

Ant 12 : [1, 0, 2, 3], 58
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [2, 3, 1, 0], 46

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 2, 3], 58

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00173611111111

Ant 15 : [0, 1, 3, 2], 46
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00173611111111

Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50
ExploitationUpdate called by 18

Ant 19 : [2, 3, 1, 0], 46Ant thread 18 terminating.
Update called by 19
Best: [3, 1, 0, 2], 76, 4, 77
Ant thread 19 terminating.iter_counter = 5

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [3, 2], 18starting ant = 2
Exploitationstarting ant = 3

Ant 1 : [0, 1], 10starting ant = 4
Exploitationstarting ant = 5

Ant 0 : [3, 2, 1], 40starting ant = 6
Explorationstarting ant = 7

avg = 0.00176898674242starting ant = 8
p = 0.0028125starting ant = 9

Ant 2 : [1, 0], 10starting ant = 10
Exploitationstarting ant = 11

Ant 3 : [1, 0], 10starting ant = 12
Explorationstarting ant = 13

avg = 0.00124723011364starting ant = 14
p = 0.0015625starting ant = 15

Ant 1 : [0, 1, 3], 28starting ant = 16
Explorationstarting ant = 17

avg = 0.00157358870968starting ant = 18

p = 0.003121875starting ant = 19

Ant 4 : [0, 1], 10

Exploitation

Ant 5 : [3, 2], 18

Exploitation

Ant 0 : [3, 2, 1, 0], 50

Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [1, 0], 10

Exploration

avg = 0.00157461995968

p = 0.00312496875

Ant 7 : [0, 1], 10

Exploration

avg = 0.00157463027218

p = 0.0031249996875

Ant 8 : [0, 1], 10

Exploration

avg = 0.00131998975088

p = 0.00156248437359

p = 0.00173609375

Ant 9 : [3, 2], 18

Exploration

avg = 0.000799445564516

p = 0.0009375

Ant 2 : [1, 0, 2], 40

Exploitation

Ant 10 : [0, 1], 10

Exploration

avg = 0.00193044507472

p = 0.00312499999688

Ant 11 : [1, 0], 10

Exploitation

Ant 3 : [1, 0, 2], 40

Exploration

avg = 0.00193044507575

p = 0.00312499999997

Ant 12 : [1, 0], 10

Exploitation

Ant 13 : [2, 3], 18

Exploration

avg = 0.00193044507576

p = 0.003125

Ant 14 : [1, 0], 10

Exploitation

Ant 15 : [0, 1], 10

Exploration

avg = 0.0017361109375

Ant 1 : [0, 1, 3, 2], 46

Update called by 1Exploitation

Ant thread 1 terminating.Ant 16 : [1, 0], 10

Exploration

avg = 0.00131999553733

p = 0.00156248437359

p = 0.00173611110937

Ant 17 : [3, 2], 18

Exploitation

Ant 18 : [3, 2], 18

Exploitation

Ant 19 : [2, 3], 18

Exploration

avg = 0.00133316761364

p = 0.001734375

Ant 4 : [0, 1, 3], 28

Exploitation

Ant 5 : [3, 2, 1], 40

Exploitation

Ant 6 : [1, 0, 2], 40

Exploitation

Ant 7 : [0, 1, 3], 28

Exploitation

Ant 8 : [0, 1, 3], 28

Exploitation

Ant 9 : [3, 2, 1], 40

Exploration

avg = 0.00173609375

Ant 2 : [1, 0, 2, 3], 58

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00133403566832

p = 0.00173611110937

Ant 10 : [0, 1, 3], 28

Exploration

avg = 0.000851528845766

p = 0.00104166665625

Ant 11 : [1, 0, 2], 40

Exploitation

Ant 3 : [1, 0, 2, 3], 58

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000851528897329

p = 0.00104166666563

Ant 12 : [1, 0, 2], 40

Exploration

avg = 0.00111193775131

p = 0.00156248437359

Ant 13 : [2, 3, 1], 36

Exploitation

Ant 14 : [1, 0, 2], 40

Exploration

avg = 0.00133403566918
p = 0.00173611111109
Ant 15 : [0, 1, 3], 28
Exploration
avg = 0.000851528897849
p = 0.00104166666667
Ant 16 : [1, 0, 2], 40
Exploitation
Ant 17 : [3, 2, 1], 40
Exploration
avg = 0.00105194602202
p = 0.00142045454403
Ant 18 : [3, 2, 1], 40
Exploitation
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 2, 1, 0], 50

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611110937

Ant 6 : [1, 0, 2, 3], 58
ExplorationUpdate called by 6

avg = 0.00173611111111Ant thread 6 terminating.

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00173611111111

Ant 8 : [0, 1, 3, 2], 46
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 2, 1, 0], 50

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00173611111109

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00173611111111

Ant 12 : [1, 0, 2, 3], 58

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 2, 3], 58

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [0, 1, 3, 2], 46

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00173611111111

Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.003125

Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.003125

Ant 18 : [3, 2, 1, 0], 50
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 5, 77
Ant thread 19 terminating.iter_counter = 6

starting ant = 0
Explorationstarting ant = 1

avg = 0.00124007879657starting ant = 2

p = 0.00156248437359starting ant = 3

p = 0.0015625starting ant = 4

Ant 0 : [3, 2], 18starting ant = 5

Explorationstarting ant = 6

avg = 0.00144841733871starting ant = 7

p = 0.0028125starting ant = 8

Ant 1 : [0, 1], 10starting ant = 9
Exploitationstarting ant = 10
Ant 2 : [1, 0], 10starting ant = 11
Exploitationstarting ant = 12
Ant 3 : [1, 0], 10starting ant = 13
Exploitationstarting ant = 14
Ant 4 : [0, 1], 10starting ant = 15
Exploitationstarting ant = 16
Ant 0 : [3, 2, 1], 40starting ant = 17
Explorationstarting ant = 18
avg = 0.00129737046324starting ant = 19
p = 0.00156248437359
p = 0.001734375
Ant 5 : [3, 2], 18
Exploitation
Ant 6 : [1, 0], 10
Exploration
avg = 0.00155257358871
p = 0.00312496875
Ant 7 : [0, 1], 10
Exploitation
Ant 8 : [0, 1], 10
Exploration
avg = 0.00120063210227
p = 0.0015625
Ant 1 : [0, 1, 3], 28
Exploration
avg = 0.00129794337991
p = 0.00156248437359
p = 0.00173609375
Ant 9 : [3, 2], 18
Exploitation
Ant 10 : [0, 1], 10
Exploration
avg = 0.000766376008065
p = 0.0009375
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00189937963068
p = 0.0031249996875
Ant 11 : [1, 0], 10
Exploration
avg = 0.00189937973381

p = 0.00312499999688
Ant 12 : [1, 0], 10
Exploitation
Ant 3 : [1, 0, 2], 40
Exploration
avg = 0.00119887594697
p = 0.00141903409091
p = 0.0015625
Ant 13 : [2, 3], 18
Exploration
avg = 0.00189937973484
p = 0.00312499999997
Ant 14 : [1, 0], 10
Exploration
avg = 0.00128656960227
p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploration
avg = 0.00158730275537
p = 0.00312499999997
Ant 15 : [0, 1], 10
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 0 : [3, 2, 1, 0], 50
ExplorationUpdate called by 0

avg = 0.00129794910907Ant thread 0 terminating.

p = 0.00156248437359
p = 0.0017361109375
Ant 17 : [3, 2], 18
Exploitation
Ant 18 : [3, 2], 18
Exploitation
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [3, 2, 1], 40
Exploitation
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [0, 1, 3], 28
Exploration
avg = 0.00173611111109
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 9 : [3, 2, 1], 40

Exploitation
Ant 10 : [0, 1, 3], 28
Exploitation

Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [1, 0, 2], 40

Exploitation
Ant 12 : [1, 0, 2], 40
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00107886819486

p = 0.00156248437359
Ant 13 : [2, 3, 1], 36
Exploration
avg = 0.000818459341393
p = 0.001041666666666
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.001736111111111
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00128743765782

p = 0.001736111111109
Ant 15 : [0, 1, 3], 28
Exploration
avg = 0.000818459341398
p = 0.001041666666667
Ant 16 : [1, 0, 2], 40
Exploitation
Ant 17 : [3, 2, 1], 40
Exploration
avg = 0.00101777414702
p = 0.00142045454403
Ant 18 : [3, 2, 1], 40
Exploration
avg = 0.00116481342993
p = 0.00173437484374
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 5 : [3, 2, 1, 0], 50
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.001736111111111

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46
Update called by 8Exploitation
Ant thread 8 terminating.Ant 9 : [3, 2, 1, 0], 50
Update called by 9Exploitation
Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration
Ant thread 10 terminating.avg = 0.00173611111109
Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration
Ant thread 11 terminating.avg = 0.00173611111111
Ant 12 : [1, 0, 2, 3], 58
Update called by 12Exploration
Ant thread 12 terminating.avg = 0.003125
Ant 13 : [2, 3, 1, 0], 46
Update called by 13Exploration
Ant thread 13 terminating.avg = 0.00173611111111
Ant 14 : [1, 0, 2, 3], 58
Update called by 14Exploitation
Ant thread 14 terminating.Ant 15 : [0, 1, 3, 2], 46
Update called by 15Exploration
Ant thread 15 terminating.avg = 0.00173611111111
Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [3, 2, 1, 0], 50
ExplorationUpdate called by 17
avg = 0.003125Ant thread 17 terminating.
Ant 18 : [3, 2, 1, 0], 50
Update called by 18Exploitation
Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46
Update called by 19

Best: [3, 1, 0, 2], 76, 6, 77
Ant thread 19 terminating.iter_counter = 7

starting ant = 0

Explorationstarting ant = 1

avg = 0.0012202370627starting ant = 2

p = 0.00156248437359starting ant = 3

p = 0.0015625starting ant = 4

Ant 0 : [3, 2], 18starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [0, 1], 10starting ant = 7

Explorationstarting ant = 8

avg = 0.0017099625947starting ant = 9

p = 0.0028125starting ant = 10

Ant 2 : [1, 0], 10starting ant = 11

Exploitationstarting ant = 12

Ant 3 : [1, 0], 10starting ant = 13

Exploitationstarting ant = 14

Ant 4 : [0, 1], 10starting ant = 15

Explorationstarting ant = 16

avg = 0.000915996732948starting ant = 17

p = 0.0012784090909starting ant = 18

Ant 0 : [3, 2, 1], 40starting ant = 19

Exploitation

Ant 5 : [3, 2], 18

Exploration

avg = 0.0018141188447

p = 0.00312496875

Ant 6 : [1, 0], 10

Exploitation

Ant 1 : [0, 1, 3], 28

Exploration

avg = 0.00153273185484

p = 0.00312496875

Ant 7 : [0, 1], 10

Exploitation
Ant 8 : [0, 1], 10
Exploration
avg = 0.00127810164604
p = 0.00156248437359
p = 0.00173609375
Ant 9 : [3, 2], 18
Exploitation
Ant 10 : [0, 1], 10
Exploitation
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00187142082386
p = 0.0031249996875
Ant 11 : [1, 0], 10
Exploitation
Ant 12 : [1, 0], 10
Exploitation
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 13 : [2, 3], 18
Exploitation
Ant 14 : [1, 0], 10
Exploration
avg = 0.00124463139205
p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 15 : [0, 1], 10
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.0012781073752
p = 0.00156248437359
p = 0.0017361109375
Ant 17 : [3, 2], 18
Exploitation
Ant 18 : [3, 2], 18
Exploitation
Ant 0 : [3, 2, 1, 0], 50
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00123566448864

p = 0.00141903409091
p = 0.001734375
Ant 19 : [2, 3], 18
Exploration
avg = 0.000986309232954
p = 0.00141903409091
Ant 5 : [3, 2, 1], 40
Exploration
avg = 0.000788691532258
p = 0.00104165625

Ant 6 : [1, 0, 2], 40
Exploitation
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00124549076705

p = 0.00173609375
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [0, 1, 3], 28
Exploitation
Ant 9 : [3, 2, 1], 40
Exploitation
Ant 10 : [0, 1, 3], 28
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [1, 0, 2], 40

Exploitation
Ant 12 : [1, 0, 2], 40
Exploration
avg = 0.0017361109375
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00104910559405

p = 0.00156248437359
Ant 13 : [2, 3, 1], 36
Exploration
avg = 0.000788696740586
p = 0.001041666666666
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.001736111111111
Ant 4 : [0, 1, 3, 2], 46
ExplorationUpdate called by 4

avg = 0.00124549944759Ant thread 4 terminating.

p = 0.001736111111109
Ant 15 : [0, 1, 3], 28
Exploitation
Ant 16 : [1, 0, 2], 40
Exploration
avg = 0.000987019389205
p = 0.00142045440341
Ant 17 : [3, 2, 1], 40
Exploitation
Ant 18 : [3, 2, 1], 40
Exploitation

Ant 19 : [2, 3, 1], 36
Exploration
avg = 0.003125
Ant 5 : [3, 2, 1, 0], 50
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173611111111

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46
ExploitationUpdate called by 8

Ant 9 : [3, 2, 1, 0], 50Ant thread 8 terminating.
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.00173611111111

Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00173611111109

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00173611111111

Ant 12 : [1, 0, 2, 3], 58
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111111

Ant 14 : [1, 0, 2, 3], 58
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [0, 1, 3, 2], 46
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00173611111111

Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.003125

Ant 18 : [3, 2, 1, 0], 50
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 7, 77
Ant thread 19 terminating.iter_counter = 8

starting ant = 0
Explorationstarting ant = 1

avg = 0.00120237950222starting ant = 2

p = 0.00156248437359starting ant = 3

p = 0.0015625starting ant = 4

Ant 0 : [3, 2], 18starting ant = 5
Exploitationstarting ant = 6

Ant 1 : [0, 1], 10starting ant = 7
Exploitationstarting ant = 8

Ant 2 : [1, 0], 10starting ant = 9
Explorationstarting ant = 10

avg = 0.00178792466856starting ant = 11

p = 0.003121875starting ant = 12

Ant 3 : [1, 0], 10starting ant = 13
Explorationstarting ant = 14

avg = 0.00151384304435starting ant = 15

p = 0.003121875starting ant = 16

Ant 4 : [0, 1], 10starting ant = 17
Exploitationstarting ant = 18

Ant 0 : [3, 2, 1], 40starting ant = 19

Exploitation

Ant 5 : [3, 2], 18

Exploration

avg = 0.00178895591856

p = 0.00312496875

Ant 6 : [1, 0], 10

Exploration

avg = 0.00112094950284

p = 0.0015625

Ant 1 : [0, 1, 3], 28

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.00151488460685

p = 0.0031249996875

Ant 8 : [0, 1], 10

Exploitation

Ant 2 : [1, 0, 2], 40

Exploration

avg = 0.00126024408555

p = 0.00156248437359

p = 0.00173609375

Ant 9 : [3, 2], 18

Exploration

avg = 0.00154925970998

p = 0.00312499999688

Ant 10 : [0, 1], 10

Exploitation

Ant 11 : [1, 0], 10

Exploration

avg = 0.00184625800085

p = 0.00312499999688

Ant 12 : [1, 0], 10

Exploitation

Ant 3 : [1, 0, 2], 40

Exploitation

Ant 13 : [2, 3], 18

Exploitation

Ant 14 : [1, 0], 10

Exploitation

Ant 15 : [0, 1], 10

Exploitation

Ant 16 : [1, 0], 10

Exploitation

Ant 4 : [0, 1, 3], 28

Exploitation

Ant 17 : [3, 2], 18

Exploitation

Ant 18 : [3, 2], 18

Exploration

avg = 0.003125

Ant 0 : [3, 2, 1, 0], 50
Update called by 0Exploitation

Ant thread 0 terminating.Ant 19 : [2, 3], 18

Exploitation
Ant 5 : [3, 2, 1], 40
Exploitation
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00120774637784

p = 0.00173609375
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00120775497159
p = 0.0017361109375
Ant 8 : [0, 1, 3], 28
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000959333139205

p = 0.00142044034091
Ant 9 : [3, 2, 1], 40
Exploration
avg = 0.00120775505753
p = 0.00173611110937
Ant 10 : [0, 1, 3], 28
Exploitation
Ant 11 : [1, 0, 2], 40
Exploration
avg = 0.000761910399345
p = 0.001041666666563
Ant 12 : [1, 0, 2], 40
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploitation

Ant thread 3 terminating.Ant 13 : [2, 3, 1], 36

Exploitation
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.00120775505839
p = 0.00173611111109
Ant 15 : [0, 1, 3], 28
Exploration
avg = 0.000761910399866
p = 0.00104166666667

Ant 16 : [1, 0, 2], 40

Exploration

avg = 0.001736111111111

Ant 4 : [0, 1, 3, 2], 46

Update called by 4Exploitation

Ant thread 4 terminating.Ant 17 : [3, 2, 1], 40

Exploitation

Ant 18 : [3, 2, 1], 40

Exploration

avg = 0.0011082644884

p = 0.00173437484374

Ant 19 : [2, 3, 1], 36

Exploitation

Ant 5 : [3, 2, 1, 0], 50

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [3, 2, 1, 0], 50

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 2, 3], 58

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.001736111111111

Ant 14 : [1, 0, 2, 3], 58
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [0, 1, 3, 2], 46
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.003125

Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 8, 77
Ant thread 19 terminating.iter_counter = 9

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [3, 2], 18starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [0, 1], 10starting ant = 4

Explorationstarting ant = 5

avg = 0.000863406217323starting ant = 6

p = 0.0012784090909starting ant = 7

Ant 0 : [3, 2, 1], 40starting ant = 8

Explorationstarting ant = 9

avg = 0.00166215303504starting ant = 10

p = 0.0028125starting ant = 11

Ant 2 : [1, 0], 10starting ant = 12

Exploitationstarting ant = 13

Ant 3 : [1, 0], 10starting ant = 14

Exploitationstarting ant = 15

Ant 1 : [0, 1, 3], 28starting ant = 16

Explorationstarting ant = 17

avg = 0.00149777123992starting ant = 18

p = 0.003121875starting ant = 19

Ant 4 : [0, 1], 10

Exploration

avg = 0.00124359936445

p = 0.00156248437359

p = 0.001734375

Ant 5 : [3, 2], 18

Exploitation

Ant 6 : [1, 0], 10

Exploitation

Ant 7 : [0, 1], 10

Exploration

avg = 0.0031249996875

Ant 0 : [3, 2, 1, 0], 50

Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00149881280242

p = 0.0031249996875

Ant 8 : [0, 1], 10

Exploitation

Ant 9 : [3, 2], 18

Exploitation

Ant 10 : [0, 1], 10

Exploration

avg = 0.00182361136733

p = 0.00312499999688

Ant 11 : [1, 0], 10

Exploitation

Ant 2 : [1, 0, 2], 40

Exploration

avg = 0.00182361136836

p = 0.00312499999997

Ant 12 : [1, 0], 10

Exploitation

Ant 13 : [2, 3], 18

Exploitation

Ant 3 : [1, 0, 2], 40

Exploitation

Ant 14 : [1, 0], 10

Exploration

avg = 0.00153353165658

p = 0.00312499999997

Ant 15 : [0, 1], 10
Exploration
avg = 0.0017361109375
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 16 : [1, 0], 10

Exploration
avg = 0.00124417806758
p = 0.00156248437359
p = 0.00173611110937
Ant 17 : [3, 2], 18
Exploitation
Ant 18 : [3, 2], 18
Exploitation
Ant 19 : [2, 3], 18
Exploration
avg = 0.00117291705256
p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 5 : [3, 2, 1], 40
Exploitation
Ant 6 : [1, 0, 2], 40
Exploration
avg = 0.00117377642756
p = 0.00173609375
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [0, 1, 3], 28
Exploitation
Ant 9 : [3, 2, 1], 40
Exploration
avg = 0.00117378510724
p = 0.00173611110937
Ant 10 : [0, 1, 3], 28
Exploitation
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [1, 0, 2], 40

Exploration
avg = 0.000998211546676
p = 0.00156248437359
Ant 13 : [2, 3, 1], 36
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000737802693207

p = 0.0010416666666666
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.0011737851081
p = 0.001736111111109
Ant 15 : [0, 1, 3], 28
Exploitation
Ant 16 : [1, 0, 2], 40
Exploitation
Ant 17 : [3, 2, 1], 40
Exploitation
Ant 18 : [3, 2, 1], 40
Exploration
avg = 0.00108415678175
p = 0.00173437484374
Ant 19 : [2, 3, 1], 36
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.003125

Ant 5 : [3, 2, 1, 0], 50
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173611111111

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00173611111111

Ant 8 : [0, 1, 3, 2], 46
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 2, 1, 0], 50

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00173611111111

Ant 12 : [1, 0, 2, 3], 58
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00173611111111

Ant 14 : [1, 0, 2, 3], 58
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [0, 1, 3, 2], 46
ExploitationUpdate called by 15

Ant 16 : [1, 0, 2, 3], 58Ant thread 15 terminating.
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.003125

Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 9, 77
Ant thread 19 terminating.iter_counter = 10

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [3, 2], 18starting ant = 2

Explorationstarting ant = 3

avg = 0.00138018161593starting ant = 4

p = 0.0028125starting ant = 5

Ant 1 : [0, 1], 10starting ant = 6

Exploitationstarting ant = 7

Ant 0 : [3, 2, 1], 40starting ant = 8

Explorationstarting ant = 9

avg = 0.00164177106487starting ant = 10

p = 0.0028125starting ant = 11

Ant 2 : [1, 0], 10starting ant = 12

Explorationstarting ant = 13

avg = 0.00174489606487starting ant = 14

p = 0.003121875starting ant = 15

Ant 3 : [1, 0], 10starting ant = 16

Exploitationstarting ant = 17

Ant 4 : [0, 1], 10starting ant = 18

Exploitationstarting ant = 19

Ant 5 : [3, 2], 18

Exploration

avg = 0.0010564065973

p = 0.0015625

Ant 1 : [0, 1, 3], 28

Exploitation

Ant 6 : [1, 0], 10

Exploration

avg = 0.00148433786593

p = 0.00312496875

Ant 7 : [0, 1], 10

Exploitation

Ant 0 : [3, 2, 1, 0], 50

Update called by 0Exploitation

Ant thread 0 terminating.Ant 8 : [0, 1], 10

Exploration

avg = 0.00122970765713

p = 0.00156248437359

p = 0.00173609375

Ant 9 : [3, 2], 18

Exploitation

Ant 10 : [0, 1], 10

Exploitation

Ant 11 : [1, 0], 10

Exploration

avg = 0.000664022423891

p = 0.0009375

Ant 2 : [1, 0, 2], 40

Exploration

avg = 0.00180322939819

p = 0.00312499999997

Ant 12 : [1, 0], 10
Exploration
avg = 0.00112836570009
p = 0.00141903409091
p = 0.0015625
Ant 13 : [2, 3], 18
Exploitation
Ant 14 : [1, 0], 10
Exploitation
Ant 15 : [0, 1], 10
Exploration
avg = 0.000715584923891
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploration
avg = 0.0018032293982
p = 0.003125
Ant 16 : [1, 0], 10
Exploration
avg = 0.00122971338629
p = 0.00156248437359
p = 0.0017361109375
Ant 17 : [3, 2], 18
Exploration
avg = 0.0011423440973
p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 18 : [3, 2], 18
Exploitation
Ant 19 : [2, 3], 18
Exploitation
Ant 5 : [3, 2, 1], 40
Exploitation
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000716100548891

p = 0.00104165625
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploitation
Ant 8 : [0, 1, 3], 28
Exploration
avg = 0.000912001675142
p = 0.00142044034091
Ant 9 : [3, 2, 1], 40
Exploration
avg = 0.00114321215199
p = 0.00173611110937
Ant 10 : [0, 1, 3], 28
Exploitation

Ant 11 : [1, 0, 2], 40
Exploration
avg = 0.00173609375
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [1, 0, 2], 40

Exploitation
Ant 13 : [2, 3, 1], 36
Exploration
avg = 0.000716105757219
p = 0.001041666666666
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.00114321215285
p = 0.001736111111109
Ant 15 : [0, 1, 3], 28
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000716105757224

p = 0.001041666666667
Ant 16 : [1, 0, 2], 40
Exploitation
Ant 17 : [3, 2, 1], 40
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 18 : [3, 2, 1], 40

Exploration
avg = 0.00106245984576
p = 0.00173437484374
Ant 19 : [2, 3, 1], 36
Exploration
avg = 0.003125
Ant 5 : [3, 2, 1, 0], 50
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00173611110937

Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46

Update called by 8Exploitation
Ant thread 8 terminating.Ant 9 : [3, 2, 1, 0], 50
Update called by 9Exploitation
Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46
Update called by 10Exploration
Ant thread 10 terminating.avg = 0.001736111111109
Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration
Ant thread 11 terminating.avg = 0.001736111111111
Ant 12 : [1, 0, 2, 3], 58
Update called by 12Exploitation
Ant thread 12 terminating.Ant 13 : [2, 3, 1, 0], 46
ExploitationUpdate called by 13
Ant 14 : [1, 0, 2, 3], 58Ant thread 13 terminating.
Update called by 14Exploitation
Ant thread 14 terminating.Ant 15 : [0, 1, 3, 2], 46
Update called by 15Exploration
Ant thread 15 terminating.avg = 0.001736111111111
Ant 16 : [1, 0, 2, 3], 58
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploitation
Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50
ExplorationUpdate called by 18
avg = 0.003125Ant thread 18 terminating.
Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 10, 77
Ant thread 19 terminating.iter_counter = 11

starting ant = 0
Explorationstarting ant = 1

avg = 0.0011588249122starting ant = 2
p = 0.00156248437359starting ant = 3
p = 0.0015625starting ant = 4
Ant 0 : [3, 2], 18starting ant = 5
Exploitationstarting ant = 6
Ant 1 : [0, 1], 10starting ant = 7
Exploitationstarting ant = 8
Ant 2 : [1, 0], 10starting ant = 9
Exploitationstarting ant = 10
Ant 3 : [1, 0], 10starting ant = 11
Exploitationstarting ant = 12
Ant 4 : [0, 1], 10starting ant = 13
Exploitationstarting ant = 14
Ant 0 : [3, 2, 1], 40starting ant = 15
Exploitationstarting ant = 16
Ant 5 : [3, 2], 18starting ant = 17
Explorationstarting ant = 18
avg = 0.00172758354171starting ant = 19
p = 0.00312496875
Ant 6 : [1, 0], 10
Exploitation
Ant 1 : [0, 1, 3], 28
Exploitation
Ant 7 : [0, 1], 10
Exploration
avg = 0.00147133001683
p = 0.0031249996875
Ant 8 : [0, 1], 10
Exploration
avg = 0.000644495181502
p = 0.0009375
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00121668949553
p = 0.00156248437359

p = 0.00173609375
Ant 9 : [3, 2], 18
Exploration
avg = 0.00150570511996
p = 0.00312499999688
Ant 10 : [0, 1], 10
Exploration
avg = 0.000696057681502
p = 0.001040625
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 11 : [1, 0], 10
Exploitation
Ant 12 : [1, 0], 10
Exploitation
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 13 : [2, 3], 18
Exploration
avg = 0.0017854585417
p = 0.00312499999997
Ant 14 : [1, 0], 10
Exploration
avg = 0.003125
Ant 0 : [3, 2, 1, 0], 50
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00150604887099

p = 0.00312499999997
Ant 15 : [0, 1], 10
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.000891120399673
p = 0.00141903409091
Ant 5 : [3, 2, 1], 40
Exploration
avg = 0.0012166952247
p = 0.00156248437359
p = 0.0017361109375
Ant 17 : [3, 2], 18
Exploration
avg = 0.00121669528199
p = 0.00156248437359
p = 0.00173611110937
Ant 18 : [3, 2], 18
Exploration
avg = 0.00117267401645
p = 0.00142044034091
p = 0.001734375
Ant 19 : [2, 3], 18
Exploration
avg = 0.000696573306502

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p = 0.00104165625
Ant 6 : [1, 0, 2], 40
Exploration
avg = 0.00173611111109
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [0, 1, 3], 28

Exploitation
Ant 8 : [0, 1, 3], 28
Exploitation
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 9 : [3, 2, 1], 40

Exploration
avg = 0.00111569649226
p = 0.00173611110937
Ant 10 : [0, 1, 3], 28
Exploration
avg = 0.0017361109375
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000696578462752

p = 0.0010416665625
Ant 11 : [1, 0, 2], 40
Exploitation
Ant 12 : [1, 0, 2], 40
Exploitation
Ant 4 : [0, 1, 3, 2], 46
Update called by 4Exploitation

Ant thread 4 terminating.Ant 13 : [2, 3, 1], 36

Exploration
avg = 0.00069657851483
p = 0.00104166666666
Ant 14 : [1, 0, 2], 40
Exploration
avg = 0.00111569649312
p = 0.00173611111109
Ant 15 : [0, 1, 3], 28
Exploitation
Ant 16 : [1, 0, 2], 40
Exploration
avg = 0.003125
Ant 5 : [3, 2, 1, 0], 50
Update called by 5Exploitation

Ant thread 5 terminating.Ant 17 : [3, 2, 1], 40

```


Exploitation
Ant 18 : [3, 2, 1], 40
Exploitation
Ant 19 : [2, 3, 1], 36
Exploration
avg = 0.00173611110937
Ant 6 : [1, 0, 2, 3], 58
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00173611111111

Ant 7 : [0, 1, 3, 2], 46
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00173611111111

Ant 8 : [0, 1, 3, 2], 46
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.003125

Ant 9 : [3, 2, 1, 0], 50
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00173611111109

Ant 11 : [1, 0, 2, 3], 58
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00173611111111

Ant 12 : [1, 0, 2, 3], 58
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [1, 0, 2, 3], 58

ExploitationUpdate called by 14

Ant 15 : [0, 1, 3, 2], 46Ant thread 14 terminating.

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 2, 3], 58

Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [3, 2, 1, 0], 50
Update called by 17Exploitation
Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50
Update called by 18Exploitation
Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46
Update called by 19
Best: [3, 1, 0, 2], 76, 11, 77
Ant thread 19 terminating.iter_counter = 12

starting ant = 0
Explorationstarting ant = 1

avg = 0.00114710856677starting ant = 2

p = 0.00156248437359starting ant = 3

p = 0.0015625starting ant = 4

Ant 0 : [3, 2], 18starting ant = 5

Explorationstarting ant = 6

avg = 0.0013554471089starting ant = 7

p = 0.0028125starting ant = 8

Ant 1 : [0, 1], 10starting ant = 9

Exploitationstarting ant = 10

Ant 2 : [1, 0], 10starting ant = 11

Explorationstarting ant = 12

avg = 0.00171004289588starting ant = 13

p = 0.003121875starting ant = 14

Ant 3 : [1, 0], 10starting ant = 15

Exploitationstarting ant = 16

Ant 4 : [0, 1], 10starting ant = 17

Explorationstarting ant = 18

avg = 0.000802647564245starting ant = 19

p = 0.0012784090909
Ant 0 : [3, 2, 1], 40
Exploration
avg = 0.00120440023343
p = 0.00156248437359
p = 0.001734375
Ant 5 : [3, 2], 18
Exploitation
Ant 6 : [1, 0], 10
Exploration
avg = 0.0014596033589
p = 0.00312496875
Ant 7 : [0, 1], 10
Exploration
avg = 0.0014596136714
p = 0.0031249996875
Ant 8 : [0, 1], 10
Exploration
avg = 0.00100412684381
p = 0.0015625
Ant 1 : [0, 1, 3], 28
Exploitation
Ant 9 : [3, 2], 18
Exploration
avg = 0.00145961377453
p = 0.00312499999688
Ant 10 : [0, 1], 10
Exploitation
Ant 2 : [1, 0, 2], 40
Exploration
avg = 0.00176837612504
p = 0.0031249996875
Ant 11 : [1, 0], 10
Exploration
avg = 0.00176837622817
p = 0.00312499999688
Ant 12 : [1, 0], 10
Exploitation
Ant 13 : [2, 3], 18
Exploration
avg = 0.0017683762292
p = 0.00312499999997
Ant 14 : [1, 0], 10
Exploitation
Ant 3 : [1, 0, 2], 40
Exploitation
Ant 15 : [0, 1], 10
Exploration
avg = 0.00176837622921
p = 0.003125
Ant 16 : [1, 0], 10
Exploration
avg = 0.00109006434381

p = 0.001734375
Ant 4 : [0, 1, 3], 28
Exploitation
Ant 17 : [3, 2], 18
Exploitation
Ant 18 : [3, 2], 18
Exploitation
Ant 19 : [2, 3], 18
Exploitation
Ant 0 : [3, 2, 1, 0], 50
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000872960064251

p = 0.00141903409091
Ant 5 : [3, 2, 1], 40
Exploitation
Ant 6 : [1, 0, 2], 40
Exploitation
Ant 7 : [0, 1, 3], 28
Exploration
avg = 0.00109093231256
p = 0.0017361109375
Ant 8 : [0, 1, 3], 28
Exploitation
Ant 1 : [0, 1, 3, 2], 46
Update called by 1Exploitation

Ant thread 1 terminating.Ant 9 : [3, 2, 1], 40

Exploration
avg = 0.0010909323985
p = 0.00173611110937
Ant 10 : [0, 1, 3], 28
Exploration
avg = 0.00173609375
Ant 2 : [1, 0, 2, 3], 58
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [1, 0, 2], 40

Exploitation
Ant 12 : [1, 0, 2], 40
Exploitation
Ant 13 : [2, 3, 1], 36
Exploitation
Ant 14 : [1, 0, 2], 40
Exploitation
Ant 3 : [1, 0, 2, 3], 58
Update called by 3Exploitation

Ant thread 3 terminating.Ant 15 : [0, 1, 3], 28

Exploitation

Ant 16 : [1, 0, 2], 40

Exploitation

Ant 4 : [0, 1, 3, 2], 46

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000873670220501

p = 0.00142045440341

Ant 17 : [3, 2, 1], 40

Exploitation

Ant 18 : [3, 2, 1], 40

Exploitation

Ant 19 : [2, 3, 1], 36

Exploration

avg = 0.003125

Ant 5 : [3, 2, 1, 0], 50

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.001736111110937

Ant 6 : [1, 0, 2, 3], 58

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.001736111111111

Ant 7 : [0, 1, 3, 2], 46

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [0, 1, 3, 2], 46

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [3, 2, 1, 0], 50

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.001736111111111

Ant 10 : [0, 1, 3, 2], 46

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.001736111111109

Ant 11 : [1, 0, 2, 3], 58

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 2, 3], 58

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.003125

Ant 13 : [2, 3, 1, 0], 46

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0017361111111111

Ant 14 : [1, 0, 2, 3], 58

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [0, 1, 3, 2], 46

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 2, 3], 58

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.003125

Ant 17 : [3, 2, 1, 0], 50

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 2, 1, 0], 50

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [2, 3, 1, 0], 46

Update called by 19

Best: [3, 1, 0, 2], 76, 12, 77

Ant thread 19 terminating.

Results

Best path = [3, 1, 0, 2]

('D ',)

('B ',)

('A ',)

('C ',)

Best path cost = 76

>>>

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan

Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
pickled.py

Traceback (most recent call last):

File "C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester 3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
pickled.py", line 11, in <module>

[43, 39, 18, 20, 15, 33, 31, 0]])

TypeError: list indices must be integers, not tuple

>>>

```

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
pickled.py
>>>
RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py
[[0, 10, 30, 31, 20, 28, 44, 43], [10, 0, 22, 18, 40, 26, 37, 39], [30, 22, 0,
18, 26, 23, 50, 18], [31, 18, 18, 0, 15, 22, 42, 20], [20, 40, 26, 15, 0, 12,
10, 15], [28, 26, 23, 22, 12, 0, 16, 33], [44, 37, 50, 42, 10, 16, 0, 31], [43,
39, 18, 20, 15, 33, 31, 0]]
8
Average = 23
Tau0 = 0.0108695652174
iter_counter = 1
starting ant = 0
Explorationstarting ant = 1

avg = 0.000526777941205starting ant = 2

p = 0.000905797101449starting ant = 3

p = 0.000679347826087starting ant = 4

Ant 0 : [5, 6], 16starting ant = 5

Explorationstarting ant = 6

avg = 0.000492452938105starting ant = 7

p = 0.00108695652174starting ant = 8

p = 0.000494071146245starting ant = 9

p = 0.0006038647343starting ant = 10

Ant 1 : [1, 3], 18starting ant = 11

Exploitationstarting ant = 12

Ant 2 : [0, 1], 10starting ant = 13

Exploitationstarting ant = 14

Ant 3 : [7, 4], 15starting ant = 15

Exploitationstarting ant = 16

Ant 4 : [6, 4], 10starting ant = 17

Explorationstarting ant = 18

```

avg = 0.000409097623333starting ant = 19

p = 0.00108695652174

Ant 0 : [5, 6, 4], 26

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [5, 4], 12

Exploration

avg = 0.00066790093964

p = 0.000724637681159

p = 0.000905797101449

p = 0.00108695652174

p = 0.000724637681159

Ant 7 : [4, 7], 15

Exploration

avg = 0.000526777941205

p = 0.000905797101449

p = 0.000679347826087

Ant 8 : [5, 6], 16

Exploration

avg = 0.000440497137633

p = 0.0006038647343

p = 0.00054347826087

p = 0.000724637681159

Ant 9 : [7, 4], 15

Exploitation

Ant 10 : [1, 0], 10

Exploitation

Ant 1 : [1, 3, 4], 33

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000440497137633

p = 0.0006038647343

p = 0.00054347826087

p = 0.000724637681159

Ant 12 : [7, 4], 15

Exploitation

Ant 2 : [0, 1, 3], 28

Exploration

avg = 0.000440497137633

p = 0.0006038647343

p = 0.00054347826087

p = 0.000724637681159

Ant 13 : [7, 4], 15

Exploration

avg = 0.000447704795155

p = 0.00108695652174

p = 0.000679347826087

Ant 14 : [6, 5], 16

Exploration

avg = 0.000658444816054

p = 0.000724637681159

p = 0.000905797101449
p = 0.00108695652174
Ant 3 : [7, 4, 6], 25
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [6, 4], 10
Exploration
avg = 0.000598058342624
p = 0.000724637681159
p = 0.000905797101449
p = 0.000724637681159
Ant 4 : [6, 4, 7], 25
Exploration
avg = 0.000461628525224
p = 0.00108695652174
p = 0.00054347826087
Ant 17 : [0, 4], 20
Exploration
avg = 0.000440497137633
p = 0.0006038647343
p = 0.00054347826087
p = 0.000724637681159
Ant 18 : [7, 4], 15
Exploration
avg = 0.000447704795155
p = 0.00108695652174
p = 0.000679347826087
Ant 19 : [6, 5], 16
Exploitation
Ant 0 : [5, 6, 4, 3], 41
Exploitation
Ant 5 : [3, 4, 6], 25
Exploitation
Ant 6 : [5, 4, 6], 22
Exploration
avg = 0.000393140380379
p = 0.0006038647343
p = 0.00054347826087
Ant 7 : [4, 7, 3], 35
Exploitation
Ant 8 : [5, 6, 4], 26
Exploration
avg = 0.000658444816054
p = 0.000724637681159
p = 0.000905797101449
p = 0.00108695652174
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [1, 0, 4], 30
Exploitation
Ant 1 : [1, 3, 4, 6], 43
Exploitation
Ant 11 : [5, 4, 6], 22

Exploration
avg = 0.000658444816054
p = 0.000724637681159
p = 0.000905797101449
p = 0.00108695652174
Ant 12 : [7, 4, 6], 25
Exploitation
Ant 2 : [0, 1, 3, 4], 43
Exploitation
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 14 : [6, 5, 4], 28
Exploration
avg = 0.00033926918166
p = 0.000679347826087
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 15 : [2, 3, 4], 33
Exploration
avg = 0.000598058342624
p = 0.000724637681159
p = 0.000905797101449
p = 0.000724637681159
Ant 16 : [6, 4, 7], 25
Exploration
avg = 0.000401642229246
p = 0.0006038647343
p = 0.00054347826087
Ant 4 : [6, 4, 7, 3], 45
Exploitation
Ant 17 : [0, 4, 6], 30
Exploration
avg = 0.000658444816054
p = 0.000724637681159
p = 0.000905797101449
p = 0.00108695652174
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000501349627059
p = 0.000905797101449
Ant 19 : [6, 5, 4], 28
Exploitation
Ant 0 : [5, 6, 4, 3, 1], 59
Exploitation
Ant 5 : [3, 4, 6, 5], 41
Exploitation
Ant 6 : [5, 4, 6, 7], 53
Exploitation
Ant 7 : [4, 7, 3, 1], 53
Exploration
avg = 0.000536510590858
p = 0.00054347826087
p = 0.000724637681159
p = 0.000724637681159

Ant 8 : [5, 6, 4, 7], 41
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [1, 0, 4, 6], 40
Exploitation
Ant 1 : [1, 3, 4, 6, 5], 59
Exploitation
Ant 11 : [5, 4, 6, 7], 53
Exploitation
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000783862876254
p = 0.000905797101449
p = 0.00108695652174
Ant 2 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.00033926918166
p = 0.000679347826087
Ant 13 : [7, 4, 6, 5], 41
Exploitation
Ant 14 : [6, 5, 4, 3], 43
Exploitation
Ant 3 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 15 : [2, 3, 4, 6], 43
Exploitation
Ant 16 : [6, 4, 7, 2], 43
Exploration
avg = 0.000513107937722
p = 0.0006038647343
p = 0.0006038647343
Ant 4 : [6, 4, 7, 3, 2], 63
Exploration
avg = 0.000359988294245
p = 0.000679347826087
Ant 17 : [0, 4, 6, 5], 46
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploitation
Ant 19 : [6, 5, 4, 3], 43
Exploitation
Ant 0 : [5, 6, 4, 3, 1, 0], 69
Exploration
avg = 0.000402057378664
p = 0.000418060200669
p = 0.00047258979206
Ant 5 : [3, 4, 6, 5, 2], 64
Exploration
avg = 0.000419707595516
p = 0.0006038647343
p = 0.00054347826087
Ant 6 : [5, 4, 6, 7, 3], 73
Exploration

avg = 0.000573214975389
p = 0.00108695652174
Ant 7 : [4, 7, 3, 1, 0], 63
Exploitation
Ant 8 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000396723104663
p = 0.00047258979206
Ant 1 : [1, 3, 4, 6, 5, 2], 82
Exploration
avg = 0.000419707595516
p = 0.0006038647343
p = 0.00054347826087
Ant 11 : [5, 4, 6, 7, 3], 73
Exploration
avg = 0.000443229974185
p = 0.00047258979206
p = 0.000494071146245
Ant 12 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 2 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.000443229974185
p = 0.00047258979206
p = 0.000494071146245
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 5, 4, 3, 1], 61
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 1], 81
Exploration
avg = 0.000392696642039
p = 0.000679347826087
Ant 15 : [2, 3, 4, 6, 5], 59
Exploitation
Ant 16 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000442993259628
p = 0.000494071146245
p = 0.00047258979206
Ant 4 : [6, 4, 7, 3, 2, 5], 86
Exploration
avg = 0.000428525475784
p = 0.00047258979206
p = 0.000494071146245
Ant 17 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 19 : [6, 5, 4, 3, 1], 61

Exploration
avg = 0.000307549713515
p = 0.00036231884058
Ant 0 : [5, 6, 4, 3, 1, 0, 2], 99
Exploration
avg = 0.000486751573708
p = 0.000494071146245
p = 0.0006038647343
Ant 5 : [3, 4, 6, 5, 2, 7], 82
Exploitation
Ant 6 : [5, 4, 6, 7, 3, 1], 91
Exploration
avg = 0.000332517723822
p = 0.00036231884058
p = 0.000388198757764
Ant 7 : [4, 7, 3, 1, 0, 5], 91
Exploration
avg = 0.000486751573708
p = 0.000494071146245
p = 0.0006038647343
Ant 8 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000519453534881
p = 0.0006038647343
p = 0.0006038647343
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 10 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 1 : [1, 3, 4, 6, 5, 2, 7], 100
Exploration
avg = 0.000519453534881
p = 0.0006038647343
p = 0.0006038647343
Ant 11 : [5, 4, 6, 7, 3, 2], 91
Exploration
avg = 0.000519453534881
p = 0.0006038647343
p = 0.0006038647343
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 2 : [0, 1, 3, 4, 6, 5, 2], 92
Exploration
avg = 0.000519453534881
p = 0.0006038647343
p = 0.0006038647343
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000619911489477
p = 0.00108695652174
Ant 14 : [6, 5, 4, 3, 1, 0], 71
Exploration
avg = 0.000790513833992
p = 0.00108695652174

Ant 3 : [7, 4, 6, 5, 3, 1, 0], 91
Exploration
avg = 0.000378546574199
p = 0.000388198757764
p = 0.000418060200669
Ant 15 : [2, 3, 4, 6, 5, 1], 85
Exploitation
Ant 16 : [6, 4, 7, 2, 3, 1], 79
Exploitation
Ant 4 : [6, 4, 7, 3, 2, 5, 1], 112
Exploitation
Ant 17 : [0, 4, 6, 5, 3, 1], 86
Exploration
avg = 0.000519453534881
p = 0.0006038647343
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 19 : [6, 5, 4, 3, 1, 0], 71
Exploitation
Ant 0 : [5, 6, 4, 3, 1, 0, 2, 7], 117
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000265743693448

p = 0.000278706800446
Ant 5 : [3, 4, 6, 5, 2, 7, 1], 121
Exploration
avg = 0.000790513833992
p = 0.00108695652174
Ant 6 : [5, 4, 6, 7, 3, 1, 0], 101
Exploration
avg = 0.000575968809074
p = 0.000679347826087
Ant 7 : [4, 7, 3, 1, 0, 5, 6], 107
Exploitation
Ant 8 : [5, 6, 4, 7, 2, 3, 1], 95
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000573671497585
p = 0.0006038647343
Ant 10 : [1, 0, 4, 6, 5, 3, 2], 96
Exploitation
Ant 1 : [1, 3, 4, 6, 5, 2, 7, 0], 143
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000428194993412

p = 0.000494071146245
Ant 11 : [5, 4, 6, 7, 3, 2, 1], 113
Exploration
avg = 0.000428194993412
p = 0.000494071146245

Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.0006038647343
Ant 2 : [0, 1, 3, 4, 6, 5, 2, 7], 110
Update called by 2Exploitation

Ant thread 2 terminating.Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation
Ant 14 : [6, 5, 4, 3, 1, 0, 2], 101
Exploration
avg = 0.00036231884058
Ant 3 : [7, 4, 6, 5, 3, 1, 0, 2], 121
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000682831661093

p = 0.00108695652174
Ant 15 : [2, 3, 4, 6, 5, 1, 0], 95
Exploration
avg = 0.000752508361204
p = 0.00108695652174
Ant 16 : [6, 4, 7, 2, 3, 1, 0], 89
Exploitation
Ant 4 : [6, 4, 7, 3, 2, 5, 1, 0], 122
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000386388973345

p = 0.000494071146245
Ant 17 : [0, 4, 6, 5, 3, 1, 2], 108
Exploration
avg = 0.000428194993412
p = 0.000494071146245
Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000307549713515
p = 0.00036231884058
Ant 19 : [6, 5, 4, 3, 1, 0, 2], 101
Exploitation
Ant 5 : [3, 4, 6, 5, 2, 7, 1, 0], 131
ExplorationUpdate called by 5

avg = 0.00036231884058Ant thread 5 terminating.

Ant 6 : [5, 4, 6, 7, 3, 1, 0, 2], 131
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 7, 3, 1, 0, 5, 6, 2], 157

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [5, 6, 4, 7, 2, 3, 1, 0], 105

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00108695652174

Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 6, 5, 3, 2, 7], 114

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00108695652174

Ant 11 : [5, 4, 6, 7, 3, 2, 1, 0], 123

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00108695652174

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.0006038647343

Ant 14 : [6, 5, 4, 3, 1, 0, 2, 7], 119

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000252780586451

Ant 15 : [2, 3, 4, 6, 5, 1, 0, 7], 138

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000388198757764

Ant 16 : [6, 4, 7, 2, 3, 1, 0, 5], 117

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.0006038647343

Ant 17 : [0, 4, 6, 5, 3, 1, 2, 7], 126

ExplorationUpdate called by 17

avg = 0.00108695652174Ant thread 17 terminating.

Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.0006038647343

Ant 19 : [6, 5, 4, 3, 1, 0, 2, 7], 119

Update called by 19

Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 1, 153
Ant thread 19 terminating.iter_counter = 2

starting ant = 0

Explorationstarting ant = 1

avg = 0.000474100147085starting ant = 2

p = 0.000815217391304starting ant = 3

p = 0.000611413043478starting ant = 4

Ant 0 : [5, 6], 16starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [1, 0], 10starting ant = 7

Exploitationstarting ant = 8

Ant 2 : [0, 1], 10starting ant = 9

Explorationstarting ant = 10

avg = 0.00039644742387starting ant = 11

p = 0.00054347826087starting ant = 12

p = 0.000489130434783starting ant = 13

p = 0.000652173913043starting ant = 14

Ant 3 : [7, 4], 15starting ant = 15

Explorationstarting ant = 16

avg = 0.00040293431564starting ant = 17

p = 0.000978260869565starting ant = 18

p = 0.000611413043478starting ant = 19

Ant 4 : [6, 5], 16

Exploration

avg = 0.000368187861

p = 0.000978260869565

Ant 0 : [5, 6, 4], 26

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [5, 4], 12

Exploration

avg = 0.000321666473225

p = 0.000326086956522

p = 0.000489130434783
p = 0.000349378881988
Ant 1 : [1, 0, 5], 38
Exploitation
Ant 7 : [4, 6], 10
Exploitation
Ant 8 : [5, 4], 12
Exploration
avg = 0.000354032106749
p = 0.000444664031621
p = 0.00054347826087
p = 0.000376254180602
Ant 2 : [0, 1, 5], 36
Exploitation
Ant 9 : [7, 4], 15
Exploration
avg = 0.000464492880797
p = 0.00108586956522
p = 0.00054347826087
Ant 10 : [1, 3], 18
Exploitation
Ant 11 : [5, 4], 12
Exploitation
Ant 12 : [7, 4], 15
Exploitation
Ant 13 : [7, 4], 15
Exploration
avg = 0.000427914905702
p = 0.00108586956522
p = 0.000678668478261
Ant 14 : [6, 5], 16
Exploration
avg = 0.000610535117057
p = 0.000652173913043
p = 0.000815217391304
p = 0.00108586956522
Ant 3 : [7, 4, 6], 25
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [6, 4], 10
Exploitation
Ant 17 : [0, 1], 10
Exploration
avg = 0.00040679939064
p = 0.00054347826087
p = 0.000489130434783
p = 0.000724637680435
Ant 18 : [7, 4], 15
Exploitation
Ant 19 : [6, 4], 10
Exploration
avg = 0.000466311267614
p = 0.00090579701087

Ant 4 : [6, 5, 4], 28
Exploitation
Ant 0 : [5, 6, 4, 3], 41
Exploitation
Ant 5 : [3, 4, 6], 25
Exploration
avg = 0.000595498867057
p = 0.000723913043478
p = 0.00108695641304
p = 0.000652173913043
Ant 6 : [5, 4, 7], 27
Exploitation
Ant 1 : [1, 0, 5, 4], 50
Exploration
avg = 0.000318367888174
p = 0.000679341032609
Ant 7 : [4, 6, 5], 26
Exploration
avg = 0.000607455388796
p = 0.000723913043478
p = 0.00108695641304
p = 0.000723913043478
Ant 8 : [5, 4, 7], 27
Exploration
avg = 0.000550180622385
p = 0.00090579710144
p = 0.000678668478261
Ant 2 : [0, 1, 5, 6], 52
Exploration
avg = 0.0006226727801
p = 0.000723913043478
p = 0.000815217391304
p = 0.00108695641304
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [1, 3, 4], 33
Exploitation
Ant 11 : [5, 4, 6], 22
Exploitation
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000622672798216
p = 0.000723913043478
p = 0.000815217391304
p = 0.00108695652174
Ant 13 : [7, 4, 6], 25
Exploration
avg = 0.000466311282709
p = 0.00090579710144
Ant 14 : [6, 5, 4], 28
Exploration
avg = 0.000318929206429
p = 0.000679347758152
Ant 3 : [7, 4, 6, 5], 41

Exploitation
Ant 15 : [2, 3, 4], 33
Exploitation
Ant 16 : [6, 4, 5], 22
Exploration
avg = 0.000370893868176
p = 0.000444664031621
p = 0.000603260869565
p = 0.000417642140468
Ant 17 : [0, 1, 5], 36
Exploitation
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000577230769231
p = 0.000723913043478
p = 0.000904891304348
p = 0.000724630434783
Ant 19 : [6, 4, 7], 25
Exploitation
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 0 : [5, 6, 4, 3, 1], 59
Exploitation
Ant 5 : [3, 4, 6, 5], 41
Exploitation
Ant 6 : [5, 4, 7, 2], 45
Exploration
avg = 0.000727940356564
p = 0.00108695652174
Ant 1 : [1, 0, 5, 4, 6], 60
Exploration
avg = 0.000378414118962
p = 0.000425330812854
p = 0.000444664031621
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 8 : [5, 4, 7, 2], 45
Exploration
avg = 0.000457773966014
p = 0.00108695641304
Ant 2 : [0, 1, 5, 6, 4], 62
Exploration
avg = 0.000318929220015
p = 0.00067934782608
Ant 9 : [7, 4, 6, 5], 41
Exploration
avg = 0.000716374024381
p = 0.000904891304348
p = 0.00108695652174
p = 0.000724637680435
Ant 10 : [1, 3, 4, 7], 48
Exploration
avg = 0.000246173259287
p = 0.000264394829612

p = 0.00031556802244
Ant 11 : [5, 4, 6, 7], 53
Exploitation
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000318929220016
p = 0.000679347826087
Ant 13 : [7, 4, 6, 5], 41
Exploration
avg = 0.000511700111481
p = 0.000723913043478
p = 0.000724637681152
Ant 14 : [6, 5, 4, 7], 43
Exploitation
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000690036231884
p = 0.000904891304348
p = 0.00108695652174
p = 0.000724637681159
Ant 15 : [2, 3, 4, 7], 48
Exploration
avg = 0.000388294553745
p = 0.000425330812854
p = 0.000494066205534
Ant 16 : [6, 4, 5, 3], 44
Exploitation
Ant 17 : [0, 1, 5, 4], 48
Exploration
avg = 0.000318929220016
p = 0.000679347826087
Ant 18 : [7, 4, 6, 5], 41
Exploitation
Ant 19 : [6, 4, 7, 2], 43
Exploration
avg = 0.000392833439226
p = 0.000603864673913
p = 0.000489130434783
Ant 4 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 0 : [5, 6, 4, 3, 1, 0], 69
Exploitation
Ant 5 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 6 : [5, 4, 7, 2, 3], 63
Exploration
avg = 0.00025961731116
p = 0.000350280504909
Ant 1 : [1, 0, 5, 4, 6, 7], 91
Exploration
avg = 0.000487859396914
p = 0.000603260869565
p = 0.00054347826087
p = 0.000489130434783

Ant 7 : [4, 6, 5, 3, 7], 68
Exploration
avg = 0.000392565464427
p = 0.000444664031621
p = 0.000603858695652
Ant 8 : [5, 4, 7, 2, 3], 63
Exploitation
Ant 2 : [0, 1, 5, 6, 4, 7], 77
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [1, 3, 4, 7, 2], 66
Exploration
avg = 0.000406284541128
p = 0.000603864733696
p = 0.000542934782609
Ant 11 : [5, 4, 6, 7, 3], 73
Exploration
avg = 0.000422955352652
p = 0.000472117202268
p = 0.000494071145751
Ant 12 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 13 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000406419051997
p = 0.000603864733696
p = 0.000543472826087
Ant 14 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000487435717625
p = 0.000603260869565
p = 0.00054347826087
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000272587339599
p = 0.000296442687747
p = 0.00031556802244
Ant 15 : [2, 3, 4, 7, 6], 79
Exploration
avg = 0.000516256136045
p = 0.000603260869565
p = 0.000603260869565
p = 0.000542934782609
Ant 16 : [6, 4, 5, 3, 7], 64
Exploitation
Ant 17 : [0, 1, 5, 4, 6], 58
Exploration
avg = 0.000422955352776
p = 0.000472117202268
p = 0.000494071146245
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000449986618727

p = 0.000603864673913
Ant 19 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000507363253857
p = 0.000603260869565
p = 0.000603260869565
Ant 4 : [6, 5, 4, 7, 3, 2], 81
Exploitation
Ant 0 : [5, 6, 4, 3, 1, 0, 2], 99
Exploitation
Ant 5 : [3, 4, 6, 5, 2, 7], 82
Exploration
avg = 0.000383916048888
p = 0.000603260869565
Ant 6 : [5, 4, 7, 2, 3, 1], 81
Exploitation
Ant 1 : [1, 0, 5, 4, 6, 7, 2], 109
Exploration
avg = 0.000360734460834
p = 0.000603864734293
Ant 7 : [4, 6, 5, 3, 7, 2], 86
Exploration
avg = 0.00038411532425
p = 0.000603858695652
Ant 8 : [5, 4, 7, 2, 3, 1], 81
Exploration
avg = 0.000573671470411
p = 0.000603864734299
Ant 2 : [0, 1, 5, 6, 4, 7, 2], 95
Exploration
avg = 0.000507763797335
p = 0.000603864673913
p = 0.000603858695652
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000315689981096
p = 0.000326086956522
p = 0.000425330812854
Ant 10 : [1, 3, 4, 7, 2, 5], 89
Exploitation
Ant 11 : [5, 4, 6, 7, 3, 1], 91
Exploration
avg = 0.000507765810016
p = 0.000603864733696
p = 0.000603864673913
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 1], 81
Exploration
avg = 0.000507765830143
p = 0.000603864734293
p = 0.000603864733696
Ant 14 : [6, 5, 4, 7, 3, 2], 81
Exploration

```
avg = 0.000385375494071
p = 0.000444664031621
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 15 : [2, 3, 4, 7, 6, 5], 95
Exploration
avg = 0.000360734460836
p = 0.0006038647343
Ant 16 : [6, 4, 5, 3, 7, 2], 82
Exploitation
Ant 17 : [0, 1, 5, 4, 6, 7], 89
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 1], 81
Exploitation
Ant 19 : [6, 4, 7, 2, 3, 1], 79
Exploration
avg = 0.00040983201581
p = 0.000493577075099
Ant 4 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.000603260869565
Ant 0 : [5, 6, 4, 3, 1, 0, 2, 7], 117
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [3, 4, 6, 5, 2, 7, 1], 121

Exploration
avg = 0.000675670240893
p = 0.00108694565217
Ant 6 : [5, 4, 7, 2, 3, 1, 0], 91
Exploration
avg = 0.000603864733696
Ant 1 : [1, 0, 5, 4, 6, 7, 2, 3], 127
Update called by 1Exploitation

Ant thread 1 terminating.Ant 7 : [4, 6, 5, 3, 7, 2, 1], 108

Exploitation
Ant 8 : [5, 4, 7, 2, 3, 1, 0], 91
Exploitation
Ant 2 : [0, 1, 5, 6, 4, 7, 2, 3], 113
Update called by 2Exploitation

Ant thread 2 terminating.Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation
Ant 10 : [1, 3, 4, 7, 2, 5, 6], 105
Exploration
avg = 0.000765810276136
p = 0.00108695652065
Ant 11 : [5, 4, 6, 7, 3, 1, 0], 101
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
```


Ant 13 : [7, 4, 6, 5, 3, 1, 0], 91

Exploitation

Ant 14 : [6, 5, 4, 7, 3, 2, 1], 103

Exploration

avg = 0.00108695652174

Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 3Exploitation

Ant thread 3 terminating.Ant 15 : [2, 3, 4, 7, 6, 5, 1], 121

Exploration

avg = 0.000410079051383

p = 0.000494071146245

Ant 16 : [6, 4, 5, 3, 7, 2, 1], 104

Exploitation

Ant 17 : [0, 1, 5, 4, 6, 7, 2], 107

Exploitation

Ant 18 : [7, 4, 6, 5, 3, 1, 0], 91

Exploitation

Ant 19 : [6, 4, 7, 2, 3, 1, 0], 89

Exploration

avg = 0.00108695652174

Ant 4 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00108695652174

Ant 5 : [3, 4, 6, 5, 2, 7, 1, 0], 131

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [5, 4, 7, 2, 3, 1, 0, 6], 135

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 7, 2, 1, 0], 118

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.000246788537549

Ant 8 : [5, 4, 7, 2, 3, 1, 0, 6], 135

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00108695652174

Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 3, 4, 7, 2, 5, 6, 0], 149

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 6, 7, 3, 1, 0, 2], 131

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [7, 4, 6, 5, 3, 1, 0, 2], 121

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 4, 7, 6, 5, 1, 0], 131

ExplorationUpdate called by 15

avg = 0.00108695652174Ant thread 15 terminating.

Ant 16 : [6, 4, 5, 3, 7, 2, 1, 0], 114

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [0, 1, 5, 4, 6, 7, 2, 3], 125

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000362318804348

Ant 18 : [7, 4, 6, 5, 3, 1, 0, 2], 121

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.000387810559006

Ant 19 : [6, 4, 7, 2, 3, 1, 0, 5], 117

Update called by 19

Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 2, 151

Ant thread 19 terminating.iter_counter = 3

starting ant = 0

Explorationstarting ant = 1

avg = 0.000464759603784starting ant = 2

p = 0.000815217391304starting ant = 3

p = 0.000611412982337starting ant = 4

Ant 0 : [5, 6], 16starting ant = 5

Explorationstarting ant = 6

avg = 0.000425922892765starting ant = 7

p = 0.000978260869565starting ant = 8

p = 0.000542934782609starting ant = 9

Ant 1 : [1, 3], 18starting ant = 10

Explorationstarting ant = 11

avg = 0.000400717730052starting ant = 12

p = 0.000978251086957starting ant = 13

p = 0.000440217391304starting ant = 14

Ant 2 : [0, 4], 20starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [7, 4], 15starting ant = 17

Exploitationstarting ant = 18

Ant 4 : [6, 4], 10starting ant = 19

Exploitation

Ant 0 : [5, 6, 4], 26

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 6 : [5, 4], 12

Exploitation

Ant 7 : [4, 6], 10

Exploitation

Ant 8 : [5, 4], 12

Exploitation

Ant 9 : [7, 4], 15

Exploitation

Ant 1 : [1, 3, 4], 33

Exploitation

Ant 10 : [1, 0], 10

Exploitation

Ant 11 : [5, 4], 12

Exploitation

Ant 12 : [7, 4], 15

Exploitation

Ant 13 : [7, 4], 15

Exploration

avg = 0.000408529428956

p = 0.00108694565217

p = 0.000611413043478

Ant 14 : [6, 5], 16

Exploration

avg = 0.000627117474916

p = 0.00065152173913

p = 0.000814402173913
p = 0.00108586956522
p = 0.000652173913043
Ant 2 : [0, 4, 7], 35
Exploration
avg = 0.000394959225793
p = 0.000444664031621
p = 0.00054347826087
p = 0.000424905482042
p = 0.00054347826087
Ant 15 : [2, 7], 18
Exploration
avg = 0.000418137348211
p = 0.00108694565217
p = 0.000678668478261
Ant 16 : [6, 5], 16
Exploration
avg = 0.00059179138796
p = 0.00065152173913
p = 0.000814402173913
p = 0.00108586956522
Ant 3 : [7, 4, 6], 25
Exploration
avg = 0.00041532176732
p = 0.000978251086957
p = 0.000542445652174
Ant 17 : [0, 4], 20
Exploration
avg = 0.000399233537124
p = 0.00054347826087
p = 0.00048913038587
p = 0.000724637680435
Ant 18 : [7, 4], 15
Exploitation
Ant 4 : [6, 4, 5], 22
Exploitation
Ant 19 : [6, 4], 10
Exploration
avg = 0.000474877926421
p = 0.00065152173913
p = 0.000723913043478
Ant 0 : [5, 6, 4, 7], 41
Exploration
avg = 0.000619235681438
p = 0.000904883152174
p = 0.00108694565217
p = 0.000724630434783
Ant 5 : [3, 4, 7], 30
Exploitation
Ant 6 : [5, 4, 6], 22
Exploitation
Ant 7 : [4, 6, 5], 26
Exploration
avg = 0.000577011768395

p = 0.00065152173913
p = 0.00108695641304
p = 0.000724637608696
Ant 8 : [5, 4, 7], 27
Exploration
avg = 0.000607052692308
p = 0.00065152173913
p = 0.000904883152174
p = 0.00108695641304
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000699064701421
p = 0.000904883152174
p = 0.00108695652065
p = 0.000724637680435
Ant 1 : [1, 3, 4, 7], 48
Exploitation
Ant 10 : [1, 0, 4], 30
Exploitation
Ant 11 : [5, 4, 6], 22
Exploration
avg = 0.000607052710422
p = 0.00065152173913
p = 0.000904883152174
p = 0.00108695652173
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000607052710424
p = 0.00065152173913
p = 0.000904883152174
p = 0.00108695652174
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 14 : [6, 5, 4], 28
Exploitation
Ant 2 : [0, 4, 7, 2], 53
Exploitation
Ant 15 : [2, 7, 4], 33
Exploration
avg = 0.000455413992231
p = 0.000905797100543
Ant 16 : [6, 5, 4], 28
Exploitation
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 17 : [0, 4, 6], 30
Exploration
avg = 0.000607052710424
p = 0.00065152173913
p = 0.000904883152174
p = 0.00108695652174
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000365337370569

p = 0.000375877926421
p = 0.000424905482042
p = 0.000444664031621
Ant 4 : [6, 4, 5, 3], 44
Exploitation
Ant 19 : [6, 4, 5], 22
Exploration
avg = 0.000386932203685
p = 0.000603260869565
p = 0.00048913038587
Ant 0 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 5 : [3, 4, 7, 2], 48
Exploitation
Ant 6 : [5, 4, 6, 7], 53
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploration
avg = 0.000383476698299
p = 0.000603858695652
p = 0.00054293478212
Ant 8 : [5, 4, 7, 3], 47
Exploration
avg = 0.000305025428313
p = 0.000679347825408
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 1 : [1, 3, 4, 7, 2], 66
Exploitation
Ant 10 : [1, 0, 4, 6], 40
Exploitation
Ant 11 : [5, 4, 6, 7], 53
Exploration
avg = 0.000305025428448
p = 0.00067934782608
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000305025428449
p = 0.000679347826087
Ant 13 : [7, 4, 6, 5], 41
Exploitation
Ant 14 : [6, 5, 4, 7], 43
Exploitation
Ant 2 : [0, 4, 7, 2, 3], 71
Exploration
avg = 0.000660918461957
p = 0.000905787961957
p = 0.00108695652174
Ant 15 : [2, 7, 4, 6], 43
Exploration
avg = 0.000475022853958
p = 0.00065152173913
p = 0.000724637681159
Ant 16 : [6, 5, 4, 7], 43

Exploration
avg = 0.000402322651946
p = 0.000424905482042
p = 0.000494066205534
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000330729017637
p = 0.000679347826087
p = 0.00035062762973
Ant 17 : [0, 4, 6, 7], 61
Exploration
avg = 0.000305025428449
p = 0.000679347826087
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000465023321352
p = 0.00054347826087
p = 0.000543478260864
p = 0.000489125543478
Ant 4 : [6, 4, 5, 3, 7], 64
Exploration
avg = 0.000375218783612
p = 0.000375877926421
p = 0.000424905482042
p = 0.000494071096838
Ant 19 : [6, 4, 5, 3], 44
Exploration
avg = 0.00045698924731
p = 0.00054347826087
p = 0.000543478260864
Ant 0 : [5, 6, 4, 7, 3, 2], 79
Exploitation
Ant 5 : [3, 4, 7, 2, 1], 70
Exploration
avg = 0.000400668764825
p = 0.000603864673913
p = 0.000543472826082
Ant 6 : [5, 4, 6, 7, 3], 73
Exploitation
Ant 7 : [4, 6, 5, 3, 2], 66
Exploitation
Ant 8 : [5, 4, 7, 3, 2], 65
Exploration
avg = 0.000402323887001
p = 0.000424905482042
p = 0.000494071145751
Ant 9 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000298156899811
p = 0.000424905482042
Ant 1 : [1, 3, 4, 7, 2, 5], 89
Exploitation
Ant 10 : [1, 0, 4, 6, 5], 56
Exploitation

Ant 11 : [5, 4, 6, 7, 2], 71
Exploitation
Ant 12 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000402323887124
p = 0.000424905482042
p = 0.000494071146245
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 2 : [0, 4, 7, 2, 3, 1], 89
Exploration
avg = 0.000337260046431
p = 0.000679347826087
Ant 15 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.00040067012503
p = 0.000603864734293
p = 0.000543478206522
Ant 16 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000497045587892
p = 0.000603260869565
p = 0.000603864673913
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 17 : [0, 4, 6, 7, 2], 79
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 4 : [6, 4, 5, 3, 7, 2], 82
Exploitation
Ant 19 : [6, 4, 5, 3, 2], 62
Exploration
avg = 0.000393527667984
p = 0.000493577075099
Ant 0 : [5, 6, 4, 7, 3, 2, 1], 101
Exploration
avg = 0.000566691776643
p = 0.00108586956522
Ant 5 : [3, 4, 7, 2, 1, 0], 80
Exploration
avg = 0.000497045608018
p = 0.000603260869565
p = 0.000603864734293
Ant 6 : [5, 4, 6, 7, 3, 2], 91
Exploration
avg = 0.00046360176054
p = 0.000494066205534
p = 0.000603260815217
Ant 7 : [4, 6, 5, 3, 2, 7], 84
Exploration
avg = 0.000321210474308

p = 0.000494066205534
Ant 8 : [5, 4, 7, 3, 2, 1], 87
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 1 : [1, 3, 4, 7, 2, 5, 6], 105
Exploration
avg = 0.000395258349086
p = 0.000424905482042
p = 0.000494071146245
Ant 10 : [1, 0, 4, 6, 5, 3], 78
Exploration
avg = 0.000463603409091
p = 0.000494071096838
p = 0.000603260869565
Ant 11 : [5, 4, 6, 7, 2, 3], 89
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.00049704560802
p = 0.000603260869565
p = 0.0006038647343
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 14 : [6, 5, 4, 7, 2, 3], 79
Exploitation
Ant 2 : [0, 4, 7, 2, 3, 1, 5], 115
Exploration
avg = 0.000394796688818
p = 0.000494071146245
Ant 15 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.00049704560802
p = 0.000603260869565
p = 0.0006038647343
Ant 16 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.000393774678854
p = 0.000494071096838
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000523349589541
p = 0.000603864673913
Ant 17 : [0, 4, 6, 7, 2, 3], 97
Exploration
avg = 0.00049704560802
p = 0.000603260869565
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 4 : [6, 4, 5, 3, 7, 2, 1], 104
Exploration
avg = 0.000463802700739
p = 0.00049407114624

p = 0.000603858695109
Ant 19 : [6, 4, 5, 3, 2, 7], 80
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2, 1, 0], 111
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000285852590344

p = 0.000349375388199
Ant 5 : [3, 4, 7, 2, 1, 0, 5], 108
Exploration
avg = 0.000393774703555
p = 0.00049407114624
Ant 6 : [5, 4, 6, 7, 3, 2, 1], 113
Exploitation
Ant 7 : [4, 6, 5, 3, 2, 7, 1], 123
Exploration
avg = 0.000662455879847
p = 0.00108695641304
Ant 8 : [5, 4, 7, 3, 2, 1, 0], 97
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 1 : [1, 3, 4, 7, 2, 5, 6, 0], 149
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [1, 0, 4, 6, 5, 3, 2], 96

Exploration
avg = 0.000443636044881
p = 0.000603260869565
Ant 11 : [5, 4, 6, 7, 2, 3, 1], 107
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000393774703557
p = 0.000494071146245
Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 14 : [6, 5, 4, 7, 2, 3, 1], 97
Exploration
avg = 0.000679341032603
Ant 2 : [0, 4, 7, 2, 3, 1, 5, 6], 131
Update called by 2Exploitation

Ant thread 2 terminating.Ant 15 : [2, 7, 4, 6, 5, 3, 1], 99

Exploitation
Ant 16 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.00108695652065
Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 3Exploitation

Ant thread 3 terminating.Ant 17 : [0, 4, 6, 7, 2, 3, 1], 115

Exploitation

Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103

Exploration

avg = 0.00108695652173

Ant 4 : [6, 4, 5, 3, 7, 2, 1, 0], 114

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000241588930155

p = 0.000278425585284

Ant 19 : [6, 4, 5, 3, 2, 7, 1], 119

Exploitation

Ant 5 : [3, 4, 7, 2, 1, 0, 5, 6], 124

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00108695652174

Ant 6 : [5, 4, 6, 7, 3, 2, 1, 0], 123

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 6, 5, 3, 2, 7, 1, 0], 133

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00022232979249

Ant 8 : [5, 4, 7, 3, 2, 1, 0, 6], 141

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000603864673908

Ant 10 : [1, 0, 4, 6, 5, 3, 2, 7], 114

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 6, 7, 2, 3, 1, 0], 117

ExplorationUpdate called by 11

avg = 0.00108695652174Ant thread 11 terminating.

Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00108695652174

Ant 14 : [6, 5, 4, 7, 2, 3, 1, 0], 107
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 7, 4, 6, 5, 3, 1, 0], 109
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [6, 5, 4, 7, 3, 2, 1, 0], 113
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000417642102843

Ant 17 : [0, 4, 6, 7, 2, 3, 1, 5], 141
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [6, 4, 5, 3, 2, 7, 1, 0], 129
Update called by 19
Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 3, 156
Ant thread 19 terminating.iter_counter = 4

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [5, 4], 12starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [5, 4, 6], 22starting ant = 6

Explorationstarting ant = 7

avg = 0.000382008694547starting ant = 8

p = 0.000880425978261starting ant = 9

p = 0.000489130341848starting ant = 10

Ant 2 : [0, 4], 20starting ant = 11

Explorationstarting ant = 12

avg = 0.000377677004464starting ant = 13

p = 0.00054347826087starting ant = 14

p = 0.000489130434293starting ant = 15

p = 0.000652173913043starting ant = 16

Ant 3 : [7, 4], 15starting ant = 17

Explorationstarting ant = 18

avg = 0.0003079065539starting ant = 19

p = 0.000542934781679

p = 0.000349029471661

Ant 1 : [1, 0, 5], 38

Exploration

avg = 0.000384093165434

p = 0.000978260771739

p = 0.000611413043478

Ant 4 : [6, 5], 16

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 0 : [5, 4, 6, 7], 53

Exploration

avg = 0.000457826988277

p = 0.000904891304348

p = 0.000611413042867

Ant 6 : [5, 6], 16

Exploitation

Ant 7 : [4, 6], 10

Exploration

avg = 0.000467434907618

p = 0.000904891304348

p = 0.000678668478255

Ant 8 : [5, 6], 16

Exploration

avg = 0.000387925451669

p = 0.00054347826087

p = 0.000489130434293

p = 0.000723913043478

Ant 9 : [7, 4], 15

Exploitation

Ant 10 : [1, 0], 10

Exploitation

Ant 2 : [0, 4, 6], 30

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000388027936141

p = 0.00054347826087

p = 0.000489130434293

p = 0.000724630434783

Ant 12 : [7, 4], 15

Exploitation
Ant 13 : [7, 4], 15
Exploration
avg = 0.000398660015218
p = 0.000978260771739
p = 0.000678668478261
Ant 14 : [6, 5], 16
Exploration
avg = 0.000383413826897
p = 0.000444664031621
p = 0.000543478260326
p = 0.000424901654064
p = 0.000543478260326
Ant 15 : [2, 7], 18
Exploration
avg = 0.000398756094411
p = 0.000978260771739
p = 0.000679341032609
Ant 16 : [6, 5], 16
Exploitation
Ant 3 : [7, 4, 6], 25
Exploration
avg = 0.000395234699272
p = 0.000880425978261
p = 0.000542934781679
Ant 17 : [0, 4], 20
Exploitation
Ant 18 : [7, 4], 15
Exploration
avg = 0.000398757055203
p = 0.000978260771739
p = 0.000679347758152
Ant 19 : [6, 5], 16
Exploitation
Ant 1 : [1, 0, 5, 4], 50
Exploitation
Ant 4 : [6, 5, 4], 28
Exploitation
Ant 5 : [3, 4, 6], 25
Exploration
avg = 0.000366929833038
p = 0.00054347826087
p = 0.000489130434293
Ant 0 : [5, 4, 6, 7, 3], 73
Exploitation
Ant 6 : [5, 6, 4], 26
Exploitation
Ant 7 : [4, 6, 5], 26
Exploitation
Ant 8 : [5, 6, 4], 26
Exploration
avg = 0.000564599102876
p = 0.000586369565217
p = 0.000815209165761

p = 0.00108695652173
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000314459160173
p = 0.000543472826078
p = 0.000387807064903
Ant 10 : [1, 0, 5], 38
Exploitation
Ant 2 : [0, 4, 6, 5], 46
Exploration
avg = 0.000537426560758
p = 0.000586369565217
p = 0.00108695652174
p = 0.000652173913043
Ant 11 : [5, 4, 7], 27
Exploration
avg = 0.000564599102878
p = 0.000586369565217
p = 0.000815209165761
p = 0.00108695652174
Ant 12 : [7, 4, 6], 25
Exploitation
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 14 : [6, 5, 4], 28
Exploration
avg = 0.000371088147799
p = 0.000542934782604
p = 0.000724637681152
Ant 15 : [2, 7, 4], 33
Exploitation
Ant 16 : [6, 5, 4], 28
Exploration
avg = 0.000292551635604
p = 0.000679347826087
Ant 3 : [7, 4, 6, 5], 41
Exploration
avg = 0.000619218668095
p = 0.000815209165761
p = 0.00108695652174
p = 0.000723913043478
Ant 17 : [0, 4, 7], 35
Exploitation
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [6, 5, 4], 28
Exploration
avg = 0.000675680602007
p = 0.00108695652174
p = 0.000724630434783
Ant 1 : [1, 0, 5, 4, 7], 65
Exploration
avg = 0.000442013307692
p = 0.000586369565217

p = 0.000724637608696
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 5 : [3, 4, 6, 5], 41
Exploration
avg = 0.000447522206637
p = 0.000543478260864
p = 0.00054347826087
Ant 0 : [5, 4, 6, 7, 3, 2], 91
Exploitation
Ant 6 : [5, 6, 4, 7], 41
Exploration
avg = 0.000337696914144
p = 0.000338290133779
p = 0.000382414933837
p = 0.000444664031621
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 8 : [5, 6, 4, 7], 41
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploration
avg = 0.000540249744014
p = 0.000905797101449
p = 0.000679341032609
Ant 10 : [1, 0, 5, 6], 54
Exploration
avg = 0.000363600179948
p = 0.000382414933837
p = 0.000493577075099
Ant 2 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 11 : [5, 4, 7, 2], 45
Exploitation
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000292551635604
p = 0.000679347826087
Ant 13 : [7, 4, 6, 5], 41
Exploration
avg = 0.000442013322185
p = 0.000586369565217
p = 0.000724637681159
Ant 14 : [6, 5, 4, 7], 43
Exploration
avg = 0.000616565746196
p = 0.000815209165761
p = 0.00108695652174
Ant 15 : [2, 7, 4, 6], 43
Exploration
avg = 0.000442013322185
p = 0.000586369565217
p = 0.000724637681159
Ant 16 : [6, 5, 4, 7], 43

Exploitation
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000384175005537
p = 0.000603260869565
p = 0.000542934782604
Ant 17 : [0, 4, 7, 3], 55
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploitation
Ant 19 : [6, 5, 4, 7], 43
Exploration
avg = 0.000476820301543
p = 0.000603260869565
p = 0.000543472826087
Ant 1 : [1, 0, 5, 4, 7, 3], 85
Exploration
avg = 0.000395462428269
p = 0.000603260869565
p = 0.000543478206522
Ant 4 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 5 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 0 : [5, 4, 6, 7, 3, 2, 1], 113
Exploitation
Ant 6 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.000472747622233
p = 0.000543478260864
p = 0.000603260869565
p = 0.000488641260326
Ant 7 : [4, 6, 5, 3, 7], 68
Exploitation
Ant 8 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [1, 0, 5, 6, 4], 64
Exploration
avg = 0.000563223007098
p = 0.000603260869565
Ant 2 : [0, 4, 6, 5, 3, 2], 86
Exploration
avg = 0.000364916007769
p = 0.000493577075099
p = 0.000543478260326
Ant 11 : [5, 4, 7, 2, 3], 63
Exploration
avg = 0.000396761554355
p = 0.000471688043478
p = 0.000494071145751
Ant 12 : [7, 4, 6, 5, 3], 63
Exploration

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avg = 0.000396761554477
p = 0.000471688043478
p = 0.00049407114624
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 15 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000395613407752
p = 0.000603864733696
p = 0.000543478260326
Ant 16 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000467649018231
p = 0.000543478260864
p = 0.000603858695652
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000424046349166
p = 0.000543478260864
p = 0.000603864673913
Ant 17 : [0, 4, 7, 3, 2], 73
Exploration
avg = 0.000396761554478
p = 0.000471688043478
p = 0.000494071146245
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000395613407887
p = 0.000603864733696
p = 0.000543478260864
Ant 19 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000396264664984
p = 0.000603864733696
Ant 1 : [1, 0, 5, 4, 7, 3, 2], 103
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 2], 81
Exploitation
Ant 5 : [3, 4, 6, 5, 2, 7], 82
Exploitation
Ant 0 : [5, 4, 6, 7, 3, 2, 1, 0], 123
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00045365612648

p = 0.000493577075099
p = 0.00060326086956
Ant 6 : [5, 6, 4, 7, 2, 3], 77
Exploitation
Ant 7 : [4, 6, 5, 3, 7, 2], 86
Exploitation
Ant 8 : [5, 6, 4, 7, 2, 3], 77
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Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 10 : [1, 0, 5, 6, 4, 7], 79
Exploration
avg = 0.000548717885375
p = 0.000603858695652
Ant 2 : [0, 4, 6, 5, 3, 2, 7], 104
Exploration
avg = 0.000329250985105
p = 0.000543478260864
Ant 11 : [5, 4, 7, 2, 3, 1], 81
Exploration
avg = 0.000487578567347
p = 0.000603260869565
p = 0.0006038647343
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000453857394598
p = 0.000493577075099
p = 0.000603864673913
Ant 14 : [6, 5, 4, 7, 2, 3], 79
Exploitation
Ant 15 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 16 : [6, 5, 4, 7, 3, 2], 81
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000359148706822
p = 0.000494066205534
p = 0.000424901654064
Ant 17 : [0, 4, 7, 3, 2, 5], 96
Exploration
avg = 0.000487578567347
p = 0.000603260869565
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 19 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.00015847826087
Ant 1 : [1, 0, 5, 4, 7, 3, 2, 6], 153
Update called by 1Exploitation

Ant thread 1 terminating.Ant 4 : [6, 5, 4, 7, 3, 2, 1], 103

Exploitation
Ant 5 : [3, 4, 6, 5, 2, 7, 1], 121
Exploitation
Ant 6 : [5, 6, 4, 7, 2, 3, 1], 95
Exploitation

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Ant 7 : [4, 6, 5, 3, 7, 2, 1], 108
Exploitation
Ant 8 : [5, 6, 4, 7, 2, 3, 1], 95
Exploration
avg = 0.000379100790267
p = 0.000494071145751
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 10 : [1, 0, 5, 6, 4, 7, 2], 97
Exploration
avg = 0.000278428068336
Ant 2 : [0, 4, 6, 5, 3, 2, 7, 1], 143
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000650558112515

p = 0.00108695641304
Ant 11 : [5, 4, 7, 2, 3, 1, 0], 91
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000379100790514
p = 0.000494071146245
Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 14 : [6, 5, 4, 7, 2, 3, 1], 97
Exploration
avg = 0.000429737415936
p = 0.000603864733696
Ant 15 : [2, 7, 4, 6, 5, 3, 1], 99
Exploitation
Ant 16 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.00108695652065
Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 3Exploitation

Ant thread 3 terminating.Ant 17 : [0, 4, 7, 3, 2, 5, 6], 112

Exploration
avg = 0.000379100790514
p = 0.000494071146245
Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 19 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.00108695652173
Ant 4 : [6, 5, 4, 7, 3, 2, 1, 0], 113
ExplorationUpdate called by 4

avg = 0.00108695652174Ant thread 4 terminating.

Ant 5 : [3, 4, 6, 5, 2, 7, 1, 0], 131
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [5, 6, 4, 7, 2, 3, 1, 0], 105

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00108695652174

Ant 7 : [4, 6, 5, 3, 7, 2, 1, 0], 118

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00108695652174

Ant 8 : [5, 6, 4, 7, 2, 3, 1, 0], 105

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00108695652174

Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 5, 6, 4, 7, 2, 3], 115

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 7, 2, 3, 1, 0, 6], 135

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113

ExplorationUpdate called by 12

avg = 0.00108695652174Ant thread 12 terminating.

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00108695652174

Ant 14 : [6, 5, 4, 7, 2, 3, 1, 0], 107

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00108695652174

Ant 15 : [2, 7, 4, 6, 5, 3, 1, 0], 109

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00108695652174

Ant 16 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000214159811986

Ant 17 : [0, 4, 7, 3, 2, 5, 6, 1], 149
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 19
Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 4, 152
Ant thread 19 terminating.iter_counter = 5

starting ant = 0
Explorationstarting ant = 1

avg = 0.000438725535666starting ant = 2

p = 0.000444664031621starting ant = 3

p = 0.000815217391304starting ant = 4

p = 0.000611413042867starting ant = 5

Ant 0 : [5, 6], 16starting ant = 6

Exploitationstarting ant = 7

Ant 1 : [1, 0], 10starting ant = 8

Explorationstarting ant = 9

avg = 0.000359002975562starting ant = 10

p = 0.000792383380435starting ant = 11

p = 0.00048912554347starting ant = 12

Ant 2 : [0, 4], 20starting ant = 13

Exploitationstarting ant = 14

Ant 3 : [7, 4], 15starting ant = 15

Explorationstarting ant = 16

avg = 0.000382990010704starting ant = 17

p = 0.000978260771739starting ant = 18

p = 0.000611413043478starting ant = 19

Ant 4 : [6, 5], 16
Exploration

avg = 0.000421588915429
p = 0.000543478260864
p = 0.00054347826087
p = 0.000651521680435
p = 0.000488636901778
Ant 5 : [3, 7], 20
Exploitation
Ant 0 : [5, 6, 4], 26
Exploration
avg = 0.000448333455007
p = 0.000815217391304
p = 0.000678668478255
Ant 6 : [5, 6], 16
Exploration
avg = 0.000528715581226
p = 0.000733688249185
p = 0.000978260869565
p = 0.000652173913043
Ant 7 : [4, 7], 15
Exploration
avg = 0.000295741106454
p = 0.000542934733696
p = 0.000349375356752
Ant 1 : [1, 0, 5], 38
Exploitation
Ant 8 : [5, 4], 12
Exploitation
Ant 9 : [7, 4], 15
Exploitation
Ant 10 : [1, 0], 10
Exploitation
Ant 11 : [5, 4], 12
Exploration
avg = 0.000377911898923
p = 0.00054347826087
p = 0.000489130434783
p = 0.000724630434783
Ant 12 : [7, 4], 15
Exploitation
Ant 2 : [0, 4, 6], 30
Exploration
avg = 0.000377912923768
p = 0.00054347826087
p = 0.000489130434783
p = 0.000724637608696
Ant 13 : [7, 4], 15
Exploitation
Ant 14 : [6, 4], 10
Exploitation
Ant 3 : [7, 4, 6], 25
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [6, 4], 10

Exploitation
Ant 17 : [0, 1], 10
Exploration
avg = 0.000377912934017
p = 0.00054347826087
p = 0.000489130434783
p = 0.000724637680435
Ant 18 : [7, 4], 15
Exploitation
Ant 19 : [6, 4], 10
Exploration
avg = 0.000425039393161
p = 0.000444664031621
p = 0.000905788043478
Ant 4 : [6, 5, 4], 28
Exploitation
Ant 5 : [3, 7, 4], 35
Exploitation
Ant 0 : [5, 6, 4, 7], 41
Exploitation
Ant 6 : [5, 6, 4], 26
Exploration
avg = 0.00032012547628
p = 0.00054347826087
p = 0.000489130434783
Ant 7 : [4, 7, 3], 35
Exploration
avg = 0.000534085606719
p = 0.00090579701087
p = 0.000679341032609
Ant 1 : [1, 0, 5, 6], 54
Exploitation
Ant 8 : [5, 4, 6], 22
Exploitation
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000524745498704
p = 0.000527732608696
p = 0.00108695652065
p = 0.000724630434783
Ant 11 : [5, 4, 7], 27
Exploration
avg = 0.000526255134438
p = 0.000527732608696
p = 0.000733688249185
p = 0.00108695652065
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000314005564689
p = 0.000678668478261
p = 0.000315252454134
Ant 2 : [0, 4, 6, 7], 61

Exploration
avg = 0.000526255134617
p = 0.000527732608696
p = 0.000733688249185
p = 0.00108695652173
Ant 13 : [7, 4, 6], 25
Exploration
avg = 0.000465868649112
p = 0.000527732608696
p = 0.000733688249185
p = 0.000724637608696
Ant 14 : [6, 4, 7], 25
Exploration
avg = 0.000290934456768
p = 0.000678668478261
Ant 3 : [7, 4, 6, 5], 41
Exploration
avg = 0.000410322848772
p = 0.000543478260864
p = 0.000651521680435
p = 0.000542929847279
Ant 15 : [2, 3, 7], 38
Exploration
avg = 0.000465868661068
p = 0.000527732608696
p = 0.000733688249185
p = 0.000724637680435
Ant 16 : [6, 4, 7], 25
Exploration
avg = 0.000284218960535
p = 0.000324160079051
p = 0.000488636902174
p = 0.000338625375949
Ant 17 : [0, 1, 5], 36
Exploitation
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000465868661188
p = 0.000527732608696
p = 0.000733688249185
p = 0.000724637681152
Ant 19 : [6, 4, 7], 25
Exploration
avg = 0.00041230474359
p = 0.000527732608696
p = 0.000724637681159
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 5 : [3, 7, 4, 6], 45
Exploration
avg = 0.000375773999515
p = 0.00054347826087
p = 0.000542934782609
Ant 0 : [5, 6, 4, 7, 3], 61

Exploration
avg = 0.00041230474359
p = 0.000527732608696
p = 0.000724637681159
Ant 6 : [5, 6, 4, 7], 41
Exploration
avg = 0.000362192765158
p = 0.000543478260864
p = 0.00054347826087
Ant 7 : [4, 7, 3, 2], 53
Exploitation
Ant 1 : [1, 0, 5, 6, 4], 64
Exploration
avg = 0.000225256230961
p = 0.000263678319624
p = 0.000350277349226
Ant 8 : [5, 4, 6, 7], 53
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [1, 0, 4, 6], 40
Exploration
avg = 0.000351797705924
p = 0.00054347826087
p = 0.00054347826087
Ant 11 : [5, 4, 7, 3], 47
Exploration
avg = 0.000291070312746
p = 0.000679347758152
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000388474199643
p = 0.00054347826087
p = 0.000543478206522
Ant 2 : [0, 4, 6, 7, 3], 81
Exploration
avg = 0.000291070326197
p = 0.000679347825408
Ant 13 : [7, 4, 6, 5], 41
Exploration
avg = 0.000343949239029
p = 0.00054347826087
p = 0.000543478260326
Ant 14 : [6, 4, 7, 3], 45
Exploration
avg = 0.00035708539903
p = 0.00042451923913
p = 0.000444664031621
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000322556368638
p = 0.000724637681159
Ant 15 : [2, 3, 7, 4], 53
Exploitation

Ant 16 : [6, 4, 7, 2], 43
Exploration
avg = 0.000543869560524
p = 0.00090579701087
p = 0.000679347758152
Ant 17 : [0, 1, 5, 6], 52
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploitation
Ant 19 : [6, 4, 7, 2], 43
Exploration
avg = 0.000391004977775
p = 0.000603858695652
p = 0.000543478260864
Ant 4 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000321388373755
p = 0.000679347826087
Ant 5 : [3, 7, 4, 6, 5], 61
Exploration
avg = 0.000458929406263
p = 0.000543478260864
p = 0.000603260869565
Ant 0 : [5, 6, 4, 7, 3, 2], 79
Exploitation
Ant 6 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.000325601249765
p = 0.000444664031621
p = 0.000424901619612
Ant 7 : [4, 7, 3, 2, 5], 76
Exploitation
Ant 1 : [1, 0, 5, 6, 4, 7], 79
Exploitation
Ant 8 : [5, 4, 6, 7, 2], 71
Exploration
avg = 0.0003693136599
p = 0.00042451923913
p = 0.000493577075099
Ant 9 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000335600998923
p = 0.000679347826087
p = 0.000350627598177
Ant 10 : [1, 0, 4, 6, 7], 71
Exploitation
Ant 11 : [5, 4, 7, 3, 2], 65
Exploitation
Ant 12 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.00049050100461
p = 0.000543478260864
p = 0.000603864673913
Ant 2 : [0, 4, 6, 7, 3, 2], 99

Exploration
avg = 0.000369437165335
p = 0.00042451923913
p = 0.000494071096838
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 4, 7, 3, 2], 63
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.00058887722534
p = 0.000733688249185
p = 0.00108695652174
Ant 15 : [2, 3, 7, 4, 6], 63
Exploitation
Ant 16 : [6, 4, 7, 2, 3], 61
Exploitation
Ant 17 : [0, 1, 5, 6, 4], 62
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000439588257228
p = 0.000444664031621
p = 0.000603858695652
p = 0.000472112910336
Ant 19 : [6, 4, 7, 2, 5], 66
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 2], 81
Exploitation
Ant 5 : [3, 7, 4, 6, 5, 2], 84
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2, 1], 101
Exploitation
Ant 6 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000412835383593
p = 0.000679347825408
Ant 7 : [4, 7, 3, 2, 5, 6], 92
Exploration
avg = 0.000573671497283
p = 0.000603864733696
Ant 1 : [1, 0, 5, 6, 4, 7, 2], 97
Exploration
avg = 0.000445053046772
p = 0.000493577075099
p = 0.000603864673913
Ant 8 : [5, 4, 6, 7, 2, 3], 89
Exploration
avg = 0.000459130694508
p = 0.000543478260864
p = 0.0006038647343
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 10 : [1, 0, 4, 6, 7, 2], 89

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Exploration
avg = 0.000308805474308
p = 0.000493577075099
Ant 11 : [5, 4, 7, 3, 2, 1], 87
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000483325614388
p = 0.000494066205534
Ant 2 : [0, 4, 6, 7, 3, 2, 1], 121
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000401457837129
p = 0.000494071096838
p = 0.000472585023243
Ant 14 : [6, 4, 7, 3, 2, 5], 86
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000380974353412
p = 0.000679347826087
Ant 15 : [2, 3, 7, 4, 6, 5], 79
Exploitation
Ant 16 : [6, 4, 7, 2, 3, 1], 79
Exploration
avg = 0.000508886529171
p = 0.000527732608696
p = 0.000724637681159
Ant 17 : [0, 1, 5, 6, 4, 7], 77
Exploration
avg = 0.000479058230741
p = 0.000603260869565
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 19 : [6, 4, 7, 2, 5, 3], 88
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 2, 1], 103
Exploitation
Ant 5 : [3, 7, 4, 6, 5, 2, 1], 106
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2, 1, 0], 111
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [5, 6, 4, 7, 2, 3, 1], 95

Exploitation
Ant 7 : [4, 7, 3, 2, 5, 6, 1], 129
Exploitation
Ant 1 : [1, 0, 5, 6, 4, 7, 2, 3], 115
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000416953892006

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p = 0.000603858695652
Ant 8 : [5, 4, 6, 7, 2, 3, 1], 107
Exploration
avg = 0.000365894268775
p = 0.000494071146245
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 10 : [1, 0, 4, 6, 7, 2, 3], 107
Exploitation
Ant 11 : [5, 4, 7, 3, 2, 1, 0], 97
Exploration
avg = 0.000365894268775
p = 0.000494071146245
Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000417265852422
Ant 2 : [0, 4, 6, 7, 3, 2, 1, 5], 147
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000365894268775

p = 0.000494071146245
Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000279579162685
p = 0.000304461120401
Ant 14 : [6, 4, 7, 3, 2, 5, 1], 112
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000335810707418

p = 0.000416924209866
Ant 15 : [2, 3, 7, 4, 6, 5, 1], 105
Exploitation
Ant 16 : [6, 4, 7, 2, 3, 1, 0], 89
Exploration
avg = 0.000573671497584
p = 0.000603864734299
Ant 17 : [0, 1, 5, 6, 4, 7, 2], 95
Exploration
avg = 0.000365894268775
p = 0.000494071146245
Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000416956881136
p = 0.000603864673913
Ant 19 : [6, 4, 7, 2, 5, 3, 1], 106
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 2, 1, 0], 113
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00108695652174

Ant 5 : [3, 7, 4, 6, 5, 2, 1, 0], 116
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00108695652174

Ant 6 : [5, 6, 4, 7, 2, 3, 1, 0], 105
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00108695652174

Ant 7 : [4, 7, 3, 2, 5, 6, 1, 0], 139
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [5, 4, 6, 7, 2, 3, 1, 0], 117
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000324160079051

Ant 10 : [1, 0, 4, 6, 7, 2, 3, 5], 129
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000222107682626

Ant 11 : [5, 4, 7, 3, 2, 1, 0, 6], 141
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00108695652174

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [6, 4, 7, 3, 2, 5, 1, 0], 122
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 7, 4, 6, 5, 1, 0], 115
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [6, 4, 7, 2, 3, 1, 0, 5], 117
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000603864734299

Ant 17 : [0, 1, 5, 6, 4, 7, 2, 3], 113
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00108695652174

Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00108695652174

Ant 19 : [6, 4, 7, 2, 5, 3, 1, 0], 116
Update called by 19
Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 5, 151
Ant thread 19 terminating.iter_counter = 6

starting ant = 0
Explorationstarting ant = 1

avg = 0.000442308578763starting ant = 2

p = 0.000444664031621starting ant = 3

p = 0.000815217309783starting ant = 4

p = 0.000611413043472starting ant = 5

Ant 0 : [5, 6], 16starting ant = 6

Exploitationstarting ant = 7

Ant 1 : [1, 0], 10starting ant = 8

Exploitationstarting ant = 9

Ant 2 : [0, 1], 10starting ant = 10

Explorationstarting ant = 11

avg = 0.000354873193503starting ant = 12

p = 0.00054347826087starting ant = 13

p = 0.000489130434783starting ant = 14

p = 0.000652173913043starting ant = 15

Ant 3 : [7, 4], 15starting ant = 16

Explorationstarting ant = 17

avg = 0.000375779832456starting ant = 18

p = 0.000978260869565starting ant = 19

p = 0.000611413043478

Ant 4 : [6, 5], 16

Exploitation

Ant 5 : [3, 4], 15

Exploitation

Ant 0 : [5, 6, 4], 26

Exploration

avg = 0.000451916498019

p = 0.000815217309783

p = 0.000678668478261

Ant 6 : [5, 6], 16

Exploration

avg = 0.000499135948569

p = 0.000660319424266

p = 0.000978260869565

p = 0.000652173913043

Ant 7 : [4, 7], 15

Exploitation

Ant 1 : [1, 0, 4], 30

Exploration

avg = 0.000452012577211

p = 0.000815217309783

p = 0.000679341032609

Ant 8 : [5, 6], 16

Exploration

avg = 0.000365121640708

p = 0.00054347826087

p = 0.000489130434783

p = 0.000723913043478

Ant 9 : [7, 4], 15

Exploitation

Ant 2 : [0, 1, 3], 28

Exploration

avg = 0.000407798107477

p = 0.00108586956522

p = 0.000602223819076

Ant 10 : [1, 3], 18

Exploration

avg = 0.000452013538003

p = 0.000815217309783

p = 0.000679347758152

Ant 11 : [5, 6], 16

Exploration

avg = 0.00036522412518

p = 0.00054347826087

p = 0.000489130434783

p = 0.000724630434783

Ant 12 : [7, 4], 15

Exploitation

Ant 13 : [7, 4], 15

Exploitation

Ant 14 : [6, 4], 10

Exploitation
Ant 15 : [2, 3], 18
Exploration
avg = 0.000473629621157
p = 0.000474959347826
p = 0.000660319424266
p = 0.000978260869565
Ant 3 : [7, 4, 6], 25
Exploration
avg = 0.000400914149227
p = 0.00108694565217
p = 0.000678668478261
Ant 16 : [6, 5], 16
Exploration
avg = 0.000399183831298
p = 0.00108584305363
p = 0.000542934733691
Ant 17 : [0, 4], 20
Exploration
avg = 0.000365225160273
p = 0.00054347826087
p = 0.000489130434783
p = 0.000724637680435
Ant 18 : [7, 4], 15
Exploitation
Ant 19 : [6, 4], 10
Exploitation
Ant 4 : [6, 5, 4], 28
Exploitation
Ant 5 : [3, 4, 6], 25
Exploration
avg = 0.000385422095318
p = 0.000474959347826
p = 0.000723913043478
Ant 0 : [5, 6, 4, 7], 41
Exploitation
Ant 6 : [5, 6, 4], 26
Exploration
avg = 0.00030532307358
p = 0.00054347826087
p = 0.000489130434783
Ant 7 : [4, 7, 3], 35
Exploration
avg = 0.000638743045388
p = 0.000660319424266
p = 0.00108694565217
p = 0.000724630434783
Ant 1 : [1, 0, 4, 7], 45
Exploration
avg = 0.000354623572467
p = 0.00108695652065
Ant 8 : [5, 6, 4], 26
Exploitation
Ant 9 : [7, 4, 6], 25

Exploitation
Ant 2 : [0, 1, 3, 4], 43
Exploration
avg = 0.000426704158132
p = 0.00054347826087
p = 0.000724623854343
p = 0.000443134832016
p = 0.00048912549906
Ant 10 : [1, 3, 7], 38
Exploitation
Ant 11 : [5, 6, 4], 26
Exploitation
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000491745563005
p = 0.000660319424266
p = 0.00108695652065
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 14 : [6, 4, 7], 25
Exploration
avg = 0.00043567236374
p = 0.000543478260326
p = 0.000724623854343
p = 0.000443134832016
p = 0.000542934733251
Ant 15 : [2, 3, 7], 38
Exploitation
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 16 : [6, 5, 4], 28
Exploitation
Ant 17 : [0, 4, 6], 30
Exploitation
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [6, 4, 7], 25
Exploitation
Ant 4 : [6, 5, 4, 7], 43
Exploration
avg = 0.000313462869864
p = 0.000679347758152
p = 0.0003155679906
Ant 5 : [3, 4, 6, 7], 56
Exploration
avg = 0.000365356925651
p = 0.00054347826087
p = 0.000542934782609
Ant 0 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 6 : [5, 6, 4, 7], 41
Exploration
avg = 0.000377990771143
p = 0.000543478260326

p = 0.00054347826087
p = 0.000443134832016
Ant 7 : [4, 7, 3, 5], 57
Exploration
avg = 0.000377816543415
p = 0.00054347826087
p = 0.00054347826087
Ant 1 : [1, 0, 4, 7, 3], 65
Exploration
avg = 0.000385567022854
p = 0.000474959347826
p = 0.000724637681159
Ant 8 : [5, 6, 4, 7], 41
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 2 : [0, 1, 3, 4, 6], 53
Exploitation
Ant 10 : [1, 3, 7, 4], 53
Exploitation
Ant 11 : [5, 6, 4, 7], 41
Exploitation
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000280912949926
p = 0.00067934782608
Ant 13 : [7, 4, 6, 5], 41
Exploitation
Ant 14 : [6, 4, 7, 2], 43
Exploration
avg = 0.000304793485397
p = 0.000724637681159
Ant 15 : [2, 3, 7, 4], 53
Exploitation
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000385567022854
p = 0.000474959347826
p = 0.000724637681159
Ant 16 : [6, 5, 4, 7], 43
Exploration
avg = 0.000314987606231
p = 0.000679347826087
p = 0.00035028050459
Ant 17 : [0, 4, 6, 7], 61
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploitation
Ant 19 : [6, 4, 7, 2], 43
Exploration
avg = 0.000380587890325
p = 0.000603858695652
p = 0.000543478206522
Ant 4 : [6, 5, 4, 7, 3], 63

Exploitation
Ant 5 : [3, 4, 6, 7, 2], 74
Exploration
avg = 0.000431333566906
p = 0.000543478260326
p = 0.00054347826087
Ant 0 : [5, 6, 4, 7, 3, 2], 79
Exploration
avg = 0.000380589398341
p = 0.000603864673913
p = 0.000543478260326
Ant 6 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 7 : [4, 7, 3, 5, 6], 73
Exploration
avg = 0.000416546991883
p = 0.000603260869565
p = 0.000493561783103
Ant 1 : [1, 0, 4, 7, 3, 5], 87
Exploration
avg = 0.000380589398475
p = 0.000603864673913
p = 0.000543478260864
Ant 8 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 2 : [0, 1, 3, 4, 6, 5], 69
Exploitation
Ant 10 : [1, 3, 7, 4, 6], 63
Exploration
avg = 0.000380589398477
p = 0.000603864673913
p = 0.00054347826087
Ant 11 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 12 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000557163415849
p = 0.000660319424266
p = 0.00108695652174
Ant 15 : [2, 3, 7, 4, 6], 63
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 16 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 17 : [0, 4, 6, 7, 2], 79
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63

Exploitation
Ant 19 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.0004514603785
p = 0.000543478260326
p = 0.000603858695652
Ant 4 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.000361313484577
p = 0.000444664031621
p = 0.000425330769935
Ant 5 : [3, 4, 6, 7, 2, 5], 97
Exploration
avg = 0.000329304841897
p = 0.000444664031621
Ant 0 : [5, 6, 4, 7, 3, 2, 1], 101
Exploitation
Ant 6 : [5, 6, 4, 7, 3, 2], 79
Exploration
avg = 0.000190799533523
p = 0.000264123986193
Ant 7 : [4, 7, 3, 5, 6, 1], 110
Exploitation
Ant 1 : [1, 0, 4, 7, 3, 5, 6], 103
Exploration
avg = 0.000451462391182
p = 0.000543478260326
p = 0.000603864733696
Ant 8 : [5, 6, 4, 7, 3, 2], 79
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 2 : [0, 1, 3, 4, 6, 5, 2], 92
Exploitation
Ant 10 : [1, 3, 7, 4, 6, 5], 79
Exploration
avg = 0.000451462391383
p = 0.000543478260326
p = 0.000603864734299
Ant 11 : [5, 6, 4, 7, 3, 2], 79
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 14 : [6, 4, 7, 2, 3, 1], 79
Exploitation
Ant 15 : [2, 3, 7, 4, 6, 5], 79
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000437292177207
p = 0.000494066205534
p = 0.000603864673913

Ant 16 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000523349380356
p = 0.000603864733696
Ant 17 : [0, 4, 6, 7, 2, 3], 97
Exploration
avg = 0.000471389927794
p = 0.00060326086956
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000434790367232
p = 0.00060326086956
p = 0.000494066052614
Ant 19 : [6, 4, 7, 2, 3, 5], 83
Exploration
avg = 0.000354005928854
p = 0.000494066205534
Ant 4 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.000302735720578
p = 0.000376243956685
Ant 5 : [3, 4, 6, 7, 2, 5, 1], 123
Exploration
avg = 0.00108586956522
Ant 0 : [5, 6, 4, 7, 3, 2, 1, 0], 111
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [5, 6, 4, 7, 3, 2, 1], 101

Exploration
avg = 0.00068934486166
p = 0.00108694565217
Ant 7 : [4, 7, 3, 5, 6, 1, 0], 120
Exploitation
Ant 1 : [1, 0, 4, 7, 3, 5, 6, 2], 153
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [5, 6, 4, 7, 3, 2, 1], 101

Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.00048913038587
Ant 2 : [0, 1, 3, 4, 6, 5, 2, 7], 110
ExplorationUpdate called by 2

avg = 0.000350670180195Ant thread 2 terminating.

p = 0.000472112875919
Ant 10 : [1, 3, 7, 4, 6, 5, 2], 102
Exploration
avg = 0.000354008399209
p = 0.000494071146245

Ant 11 : [5, 6, 4, 7, 3, 2, 1], 101

Exploitation

Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation

Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation

Ant 14 : [6, 4, 7, 2, 3, 1, 0], 89

Exploration

avg = 0.000323434761351

p = 0.000417642038229

Ant 15 : [2, 3, 7, 4, 6, 5, 1], 105

Exploitation

Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 3Exploitation

Ant thread 3 terminating.Ant 16 : [6, 5, 4, 7, 2, 3, 1], 97

Exploration

avg = 0.00054896489548

p = 0.000603858695652

Ant 17 : [0, 4, 6, 7, 2, 3, 1], 115

Exploration

avg = 0.000354008399209

p = 0.000494071146245

Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103

Exploration

avg = 0.000323641751758

p = 0.000418056019044

Ant 19 : [6, 4, 7, 2, 3, 5, 1], 109

Exploration

avg = 0.00108695652173

Ant 4 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00108695652174

Ant 5 : [3, 4, 6, 7, 2, 5, 1, 0], 133

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [5, 6, 4, 7, 3, 2, 1, 0], 111

ExploitationUpdate called by 6

Ant 7 : [4, 7, 3, 5, 6, 1, 0, 2], 150Ant thread 6 terminating.

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00108695652174

Ant 8 : [5, 6, 4, 7, 3, 2, 1, 0], 111

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 3, 7, 4, 6, 5, 2, 0], 132

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00108695652174

Ant 11 : [5, 6, 4, 7, 3, 2, 1, 0], 111

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.00108695652174

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [6, 4, 7, 2, 3, 1, 0, 5], 117

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00108695652174

Ant 15 : [2, 3, 7, 4, 6, 5, 1, 0], 115

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [6, 5, 4, 7, 2, 3, 1, 0], 107

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000376247031468

Ant 17 : [0, 4, 6, 7, 2, 3, 1, 5], 141

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00108695652174

Ant 19 : [6, 4, 7, 2, 3, 5, 1, 0], 119

Update called by 19

Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 6, 153

Ant thread 19 terminating.iter_counter = 7

starting ant = 0

Explorationstarting ant = 1

avg = 0.000436316879501starting ant = 2

p = 0.000444664031616starting ant = 3
p = 0.000815209239123starting ant = 4
p = 0.000611413043478starting ant = 5
Ant 0 : [5, 6], 16starting ant = 6
Explorationstarting ant = 7
avg = 0.000372689132457starting ant = 8
p = 0.000978260869565starting ant = 9
p = 0.000543463492633starting ant = 10
p = 0.000375877862079starting ant = 11
Ant 1 : [1, 5], 26starting ant = 12
Exploitationstarting ant = 13
Ant 2 : [0, 1], 10starting ant = 14
Exploitationstarting ant = 15
Ant 3 : [7, 4], 15starting ant = 16
Explorationstarting ant = 17
avg = 0.000380524389591starting ant = 18
p = 0.000978260869565starting ant = 19

p = 0.000611413043478
Ant 4 : [6, 5], 16
Exploitation
Ant 5 : [3, 4], 15
Exploration
avg = 0.000342042947276
p = 0.000978260869565
Ant 0 : [5, 6, 4], 26
Exploration
avg = 0.000445924798756
p = 0.000815209239123
p = 0.000678668478261
Ant 6 : [5, 6], 16
Exploration
avg = 0.000472514279178
p = 0.00059428748184
p = 0.000978260869565
p = 0.000652173913043
Ant 7 : [4, 7], 15
Exploitation

Ant 8 : [5, 4], 12
Exploitation
Ant 9 : [7, 4], 15
Exploration
avg = 0.000378654920343
p = 0.000978260869565
p = 0.000543463492633
p = 0.000417638377283
Ant 10 : [1, 5], 26
Exploration
avg = 0.000458832589906
p = 0.000904891222826
p = 0.000679341032609
Ant 11 : [5, 6], 16
Exploration
avg = 0.000472596785319
p = 0.000904891222826
p = 0.000679347758152
Ant 1 : [1, 5, 6], 42
Exploitation
Ant 12 : [7, 4], 15
Exploitation
Ant 13 : [7, 4], 15
Exploration
avg = 0.000278790196332
p = 0.000543463492633
p = 0.000418055982435
Ant 2 : [0, 1, 5], 36
Exploration
avg = 0.000405504979653
p = 0.00108586956522
p = 0.000678668478261
Ant 14 : [6, 5], 16
Exploration
avg = 0.000380066877084
p = 0.000444664031621
p = 0.000543478260864
p = 0.000424905481655
p = 0.000542445651734
Ant 15 : [2, 7], 18
Exploitation
Ant 3 : [7, 4, 6], 25
Exploration
avg = 0.000405601058846
p = 0.00108586956522
p = 0.000679341032609
Ant 16 : [6, 5], 16
Exploration
avg = 0.000395650675673
p = 0.001085859544
p = 0.000489125543038
Ant 17 : [0, 4], 20
Exploitation
Ant 18 : [7, 4], 15

Exploration
avg = 0.000405602019638
p = 0.00108586956522
p = 0.000679347758152
Ant 19 : [6, 5], 16
Exploitation
Ant 4 : [6, 5, 4], 28
Exploitation
Ant 5 : [3, 4, 6], 25
Exploitation
Ant 0 : [5, 6, 4, 7], 41
Exploitation
Ant 6 : [5, 6, 4], 26
Exploitation
Ant 7 : [4, 7, 2], 33
Exploration
avg = 0.000482408962793
p = 0.00108694565217
p = 0.000724630434783
Ant 8 : [5, 4, 7], 27
Exploitation
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [1, 5, 4], 38
Exploration
avg = 0.000360157077711
p = 0.00108694565217
Ant 11 : [5, 6, 4], 26
Exploitation
Ant 1 : [1, 5, 6, 4], 52
Exploitation
Ant 12 : [7, 4, 6], 25
Exploitation
Ant 13 : [7, 4, 6], 25
Exploration
avg = 0.000526036366236
p = 0.000905797010861
p = 0.000679347825408
Ant 2 : [0, 1, 5, 6], 52
Exploitation
Ant 14 : [6, 5, 4], 28
Exploitation
Ant 15 : [2, 7, 4], 33
Exploration
avg = 0.000287555954549
p = 0.000679347825408
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 16 : [6, 5, 4], 28
Exploration
avg = 0.000533322111938
p = 0.00059428748184
p = 0.00108695652173
p = 0.000724637608696

Ant 17 : [0, 4, 7], 35
Exploitation
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000422232162558
p = 0.000425326520609
p = 0.000444664031616
p = 0.00090579710144
Ant 19 : [6, 5, 4], 28
Exploitation
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 5 : [3, 4, 6, 5], 41
Exploration
avg = 0.00035747612439
p = 0.000603260869565
p = 0.000489130434783
Ant 0 : [5, 6, 4, 7, 3], 61
Exploration
avg = 0.00036150307419
p = 0.000427463413043
p = 0.000724637681152
Ant 6 : [5, 6, 4, 7], 41
Exploitation
Ant 7 : [4, 7, 2, 3], 51
Exploration
avg = 0.000338109196146
p = 0.000603260869565
p = 0.000542934782609
Ant 8 : [5, 4, 7, 3], 47
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [1, 5, 4, 6], 48
Exploitation
Ant 11 : [5, 6, 4, 7], 41
Exploitation
Ant 1 : [1, 5, 6, 4, 7], 67
Exploration
avg = 0.000287555954685
p = 0.000679347826087
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000287555954685
p = 0.000679347826087
Ant 13 : [7, 4, 6, 5], 41
Exploration
avg = 0.000433727209197
p = 0.00108695652065
Ant 2 : [0, 1, 5, 6, 4], 62
Exploitation
Ant 14 : [6, 5, 4, 7], 43
Exploitation
Ant 15 : [2, 7, 4, 6], 43

Exploitation
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000361503074192
p = 0.000427463413043
p = 0.000724637681159
Ant 16 : [6, 5, 4, 7], 43
Exploration
avg = 0.00034635849985
p = 0.000603260869565
p = 0.000543472826087
Ant 17 : [0, 4, 7, 3], 55
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000361503074192
p = 0.000427463413043
p = 0.000724637681159
Ant 19 : [6, 5, 4, 7], 43
Exploration
avg = 0.000371063067325
p = 0.000603260869565
p = 0.000543478206522
Ant 4 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000295732960572
p = 0.000376254142967
p = 0.000425326520609
Ant 5 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2], 79
Exploration
avg = 0.000371063080776
p = 0.000603260869565
p = 0.000543478260326
Ant 6 : [5, 6, 4, 7, 3], 61
Exploration
avg = 0.000328004611138
p = 0.000543478206522
p = 0.000444663985778
Ant 7 : [4, 7, 2, 3, 5], 73
Exploitation
Ant 8 : [5, 4, 7, 3, 2], 65
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000202467204225
p = 0.000315564866757
Ant 10 : [1, 5, 4, 6, 7], 79
Exploration
avg = 0.00037106308091
p = 0.000603260869565
p = 0.000543478260864
Ant 11 : [5, 6, 4, 7, 3], 61

Exploration
avg = 0.00042702569936
p = 0.000603260869565
p = 0.00054347826087
Ant 1 : [1, 5, 6, 4, 7, 3], 87
Exploration
avg = 0.000387185560968
p = 0.000472117159346
p = 0.000494066205534
Ant 12 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000387186783794
p = 0.000472117159346
p = 0.000494071096838
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 2 : [0, 1, 5, 6, 4, 7], 77
Exploration
avg = 0.000371063080912
p = 0.000603260869565
p = 0.00054347826087
Ant 14 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000310732203682
p = 0.000679347826087
Ant 15 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000444558887915
p = 0.000543478206522
p = 0.000603858695652
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 16 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 17 : [0, 4, 7, 3, 2], 73
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 19 : [6, 5, 4, 7, 2], 61
Exploration
avg = 0.000444560900596
p = 0.000543478206522
p = 0.000603864733696
Ant 4 : [6, 5, 4, 7, 3, 2], 81
Exploitation
Ant 5 : [3, 4, 6, 5, 2, 7], 82
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2, 1], 101
Exploration
avg = 0.000444560900795
p = 0.000543478206522
p = 0.000603864734293
Ant 6 : [5, 6, 4, 7, 3, 2], 79
Exploitation

Ant 7 : [4, 7, 2, 3, 5, 6], 89
Exploitation
Ant 8 : [5, 4, 7, 3, 2, 1], 87
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 10 : [1, 5, 4, 6, 7, 2], 97
Exploration
avg = 0.000444560900797
p = 0.000543478206522
p = 0.0006038647343
Ant 11 : [5, 6, 4, 7, 3, 2], 79
Exploitation
Ant 1 : [1, 5, 6, 4, 7, 3, 2], 105
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 2 : [0, 1, 5, 6, 4, 7, 2], 95
Exploration
avg = 0.000444560900797
p = 0.000543478206522
p = 0.0006038647343
Ant 14 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.000358876675077
p = 0.000376254142967
p = 0.00049407114624
Ant 15 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.00040940890168
p = 0.000494066205534
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000474027854743
p = 0.000494071096838
p = 0.000603260869565
Ant 16 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000359008454425
p = 0.000494071096838
p = 0.000424905481655
Ant 17 : [0, 4, 7, 3, 2, 5], 96
Exploration
avg = 0.000444560900797
p = 0.000543478206522
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000474227130105
p = 0.000494071096838
p = 0.000603858695652
Ant 19 : [6, 5, 4, 7, 2, 3], 79

Exploration
avg = 0.000409411347332
p = 0.000494071096838
Ant 4 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.000168756596606
p = 0.000203175225568
Ant 5 : [3, 4, 6, 5, 2, 7, 1], 121
Exploration
avg = 0.000978260869565
Ant 0 : [5, 6, 4, 7, 3, 2, 1, 0], 111
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [5, 6, 4, 7, 3, 2, 1], 101

Exploration
avg = 0.000213022248979
p = 0.000264127997192
Ant 7 : [4, 7, 2, 3, 5, 6, 1], 126
Exploration
avg = 0.000620996034078
p = 0.00108586956522
Ant 8 : [5, 4, 7, 3, 2, 1, 0], 97
Exploration
avg = 0.000409411372033
p = 0.00049407114624
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.00046430813587
p = 0.000603864673913
Ant 10 : [1, 5, 4, 6, 7, 2, 3], 115
Exploration
avg = 0.000409411372036
p = 0.000494071146245
Ant 11 : [5, 6, 4, 7, 3, 2, 1], 101
Exploration
avg = 0.000324751597826
Ant 1 : [1, 5, 6, 4, 7, 3, 2, 0], 135
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000428007157199

p = 0.000494071146245
Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000603864733696
Ant 2 : [0, 1, 5, 6, 4, 7, 2, 3], 113
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000428007157199

p = 0.000494071146245

Ant 14 : [6, 5, 4, 7, 3, 2, 1], 103

Exploitation

Ant 15 : [2, 7, 4, 6, 5, 3, 1], 99

Exploration

avg = 0.00108694565217

Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 3Exploitation

Ant thread 3 terminating.Ant 16 : [6, 5, 4, 7, 2, 3, 1], 97

Exploitation

Ant 17 : [0, 4, 7, 3, 2, 5, 6], 112

Exploration

avg = 0.000428007157199

p = 0.000494071146245

Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation

Ant 19 : [6, 5, 4, 7, 2, 3, 1], 97

Exploration

avg = 0.00108695641304

Ant 4 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00108695652065

Ant 5 : [3, 4, 6, 5, 2, 7, 1, 0], 131

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00108695652173

Ant 6 : [5, 6, 4, 7, 3, 2, 1, 0], 111

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [4, 7, 2, 3, 5, 6, 1, 0], 136

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.000199896898316

Ant 8 : [5, 4, 7, 3, 2, 1, 0, 6], 141

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000186339761571

Ant 10 : [1, 5, 4, 6, 7, 2, 3, 0], 146

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00108695652174

Ant 11 : [5, 6, 4, 7, 3, 2, 1, 0], 111

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00108695652174

Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113

ExploitationUpdate called by 12

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113Ant thread 12 terminating.

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00108695652174

Ant 14 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 7, 4, 6, 5, 3, 1, 0], 109

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00108695652174

Ant 16 : [6, 5, 4, 7, 2, 3, 1, 0], 107

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000293475592545

Ant 17 : [0, 4, 7, 3, 2, 5, 6, 1], 149

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00108695652174

Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [6, 5, 4, 7, 2, 3, 1, 0], 107

Update called by 19

Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 7, 151

Ant thread 19 terminating.iter_counter = 8

starting ant = 0

Explorationstarting ant = 1

avg = 0.000425434957047starting ant = 2

p = 0.000444664031621starting ant = 3

p = 0.000815217391304starting ant = 4

p = 0.000611413043478starting ant = 5

Ant 0 : [5, 6], 16starting ant = 6

Explorationstarting ant = 7

avg = 0.0003548188126starting ant = 8

p = 0.000978260869565starting ant = 9

p = 0.000489117143369starting ant = 10

p = 0.000376254142638starting ant = 11

Ant 1 : [1, 5], 26starting ant = 12

Exploitationstarting ant = 13

Ant 2 : [0, 1], 10starting ant = 14

Explorationstarting ant = 15

avg = 0.000342791190861starting ant = 16

p = 0.000543478260864starting ant = 17

p = 0.000489130434783starting ant = 18

p = 0.000652173913043starting ant = 19

Ant 3 : [7, 4], 15

Exploration

avg = 0.000373456007976

p = 0.000978260869555

p = 0.000611413043478

Ant 4 : [6, 5], 16

Exploration

avg = 0.000437254670302

p = 0.000543478206522

p = 0.00054347826087

p = 0.000651521627133

p = 0.000444219367176

p = 0.000440212988731

Ant 5 : [3, 7], 20

Exploitation

Ant 0 : [5, 6, 4], 26

Exploitation

Ant 6 : [5, 4], 12

Exploitation

Ant 7 : [4, 6], 10

Exploration

avg = 0.000447853435308

p = 0.000904891304348

p = 0.000678668478261

Ant 8 : [5, 6], 16

Exploitation

Ant 9 : [7, 4], 15

Exploitation

Ant 10 : [1, 0], 10
Exploration
avg = 0.0004479495145
p = 0.000904891304348
p = 0.000679341032609
Ant 11 : [5, 6], 16
Exploration
avg = 0.000466170766396
p = 0.000904891304348
p = 0.000679347758152
Ant 1 : [1, 5, 6], 42
Exploration
avg = 0.000353142122538
p = 0.000543478260864
p = 0.000489130434783
p = 0.000724630434783
Ant 12 : [7, 4], 15
Exploitation
Ant 13 : [7, 4], 15
Exploitation
Ant 2 : [0, 1, 3], 28
Exploration
avg = 0.000398436598039
p = 0.00108586956522
p = 0.000678668478261
Ant 14 : [6, 5], 16
Exploration
avg = 0.00037492376219
p = 0.000444664031621
p = 0.000543478260864
p = 0.000424901654061
p = 0.000543472733152
Ant 15 : [2, 7], 18
Exploitation
Ant 16 : [6, 4], 10
Exploration
avg = 0.000384516312913
p = 0.00108585969242
p = 0.000488641260322
Ant 17 : [0, 4], 20
Exploitation
Ant 18 : [7, 4], 15
Exploration
avg = 0.00039868640394
p = 0.00108694565217
p = 0.000679341032609
Ant 19 : [6, 5], 16
Exploitation
Ant 3 : [7, 4, 6], 25
Exploitation
Ant 4 : [6, 5, 4], 28
Exploitation
Ant 5 : [3, 7, 4], 35
Exploitation

Ant 0 : [5, 6, 4, 7], 41
Exploitation
Ant 6 : [5, 4, 6], 22
Exploration
avg = 0.000283977650158
p = 0.000679347758152
p = 0.000315252426017
Ant 7 : [4, 6, 7], 41
Exploration
avg = 0.00035774811965
p = 0.00108694565217
Ant 8 : [5, 6, 4], 26
Exploration
avg = 0.00043273417792
p = 0.000534858733656
p = 0.00108695641304
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000276673854753
p = 0.000292468989129
p = 0.000542929890864
p = 0.000314126524493
Ant 10 : [1, 0, 5], 38
Exploitation
Ant 11 : [5, 6, 4], 26
Exploitation
Ant 1 : [1, 5, 6, 4], 52
Exploration
avg = 0.000432734195855
p = 0.000534858733656
p = 0.00108695652065
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000432734196034
p = 0.000534858733656
p = 0.00108695652173
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 2 : [0, 1, 3, 4], 43
Exploitation
Ant 14 : [6, 5, 4], 28
Exploration
avg = 0.000321420640546
p = 0.000489130434783
p = 0.000724637681159
Ant 15 : [2, 7, 4], 33
Exploitation
Ant 16 : [6, 4, 7], 25
Exploitation
Ant 17 : [0, 4, 6], 30
Exploration
avg = 0.000432734196036
p = 0.000534858733656
p = 0.00108695652174

Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [6, 5, 4], 28
Exploration
avg = 0.000277722694986
p = 0.000679347758152
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 5 : [3, 7, 4, 6], 45
Exploitation
Ant 0 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 6 : [5, 4, 6, 7], 53
Exploration
avg = 0.000324198721975
p = 0.000603260869565
p = 0.000489130434783
Ant 7 : [4, 6, 7, 3], 61
Exploration
avg = 0.000339845505903
p = 0.000384717071739
p = 0.000724637608696
Ant 8 : [5, 6, 4, 7], 41
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploration
avg = 0.00052245123988
p = 0.000905797100543
p = 0.000679347825408
Ant 10 : [1, 0, 5, 6], 54
Exploitation
Ant 11 : [5, 6, 4, 7], 41
Exploitation
Ant 1 : [1, 5, 6, 4, 7], 67
Exploration
avg = 0.000277722708572
p = 0.00067934782608
Ant 12 : [7, 4, 6, 5], 41
Exploitation
Ant 13 : [7, 4, 6, 5], 41
Exploitation
Ant 2 : [0, 1, 3, 4, 6], 53
Exploration
avg = 0.000339845520396
p = 0.000384717071739
p = 0.000724637681159
Ant 14 : [6, 5, 4, 7], 43
Exploitation
Ant 15 : [2, 7, 4, 6], 43
Exploitation
Ant 16 : [6, 4, 7, 2], 43
Exploitation

Ant 17 : [0, 4, 6, 5], 46
Exploration
avg = 0.000277722708573
p = 0.000679347826087
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000339845520396
p = 0.000384717071739
p = 0.000724637681159
Ant 19 : [6, 5, 4, 7], 43
Exploration
avg = 0.000348468116531
p = 0.000424905443411
p = 0.000444664031621
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000379463496342
p = 0.000603858695652
p = 0.000542934782609
Ant 4 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 5 : [3, 7, 4, 6, 5], 61
Exploration
avg = 0.000437963714607
p = 0.000444664031621
p = 0.000543478260864
Ant 0 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000379598007212
p = 0.000603858695652
p = 0.00054347826087
Ant 6 : [5, 4, 6, 7, 3], 73
Exploration
avg = 0.000461316308659
p = 0.000543478206522
p = 0.00054347826087
Ant 7 : [4, 6, 7, 3, 2], 79
Exploitation
Ant 8 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000434183206086
p = 0.00108695652173
Ant 10 : [1, 0, 5, 6, 4], 64
Exploitation
Ant 11 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.000422749037032
p = 0.000603864733696
p = 0.000543478206522
Ant 1 : [1, 5, 6, 4, 7, 3], 87
Exploitation
Ant 12 : [7, 4, 6, 5, 3], 63

Exploitation
Ant 13 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000401780429029
p = 0.000679347826087
Ant 2 : [0, 1, 3, 4, 6, 5], 69
Exploration
avg = 0.000379600875282
p = 0.000603864733696
p = 0.000543478260326
Ant 14 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.00030331192001
p = 0.000679347826087
Ant 15 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000449643851646
p = 0.000603260869565
Ant 16 : [6, 4, 7, 2, 3], 61
Exploitation
Ant 17 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000379600875417
p = 0.000603864733696
p = 0.000543478260864
Ant 19 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000486942825386
p = 0.000543478206522
p = 0.000603260869565
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000487142100748
p = 0.000543478206522
p = 0.000603858695652
Ant 4 : [6, 5, 4, 7, 3, 2], 81
Exploitation
Ant 5 : [3, 7, 4, 6, 5, 2], 84
Exploitation
Ant 0 : [5, 6, 4, 7, 2, 3, 1], 95
Exploitation
Ant 6 : [5, 4, 6, 7, 3, 2], 91
Exploitation
Ant 7 : [4, 6, 7, 3, 2, 1], 101
Exploration
avg = 0.000474394874029
p = 0.000493577075099
p = 0.000603858695652
Ant 8 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000507071667596
p = 0.000603260869022

p = 0.000603864733696
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000436437216964
p = 0.000724637681159
Ant 10 : [1, 0, 5, 6, 4, 7], 79
Exploration
avg = 0.000474396866783
p = 0.000493577075099
p = 0.000603864673913
Ant 11 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000458977067182
p = 0.000603864734293
Ant 1 : [1, 5, 6, 4, 7, 3, 2], 105
Exploration
avg = 0.000507071667797
p = 0.000603260869022
p = 0.000603864734299
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000507071667797
p = 0.000603260869022
p = 0.0006038647343
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 2 : [0, 1, 3, 4, 6, 5, 2], 92
Exploration
avg = 0.000507071667797
p = 0.000603260869022
p = 0.0006038647343
Ant 14 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.000339458045779
p = 0.000494071146245
Ant 15 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000453856545423
p = 0.000603260869022
Ant 16 : [6, 4, 7, 2, 3, 1], 79
Exploitation
Ant 17 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000507270943339
p = 0.000603858695647
p = 0.0006038647343
Ant 19 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.000409662963218
p = 0.000493577075099
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation

Ant 4 : [6, 5, 4, 7, 3, 2, 1], 103

Exploration

avg = 0.000409909974087

p = 0.000494071096838

Ant 5 : [3, 7, 4, 6, 5, 2, 1], 106

Exploration

avg = 0.00108586956522

Ant 0 : [5, 6, 4, 7, 2, 3, 1, 0], 105

Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [5, 4, 6, 7, 3, 2, 1], 113

Exploration

avg = 0.000752293896131

p = 0.00108694565217

Ant 7 : [4, 6, 7, 3, 2, 1, 0], 111

Exploration

avg = 0.000458974047858

p = 0.000603858695647

Ant 8 : [5, 6, 4, 7, 2, 3, 1], 95

Exploitation

Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation

Ant 10 : [1, 0, 5, 6, 4, 7, 2], 97

Exploration

avg = 0.000458977036992

p = 0.000603864673913

Ant 11 : [5, 6, 4, 7, 2, 3, 1], 95

Exploration

avg = 0.000325748851337

Ant 1 : [1, 5, 6, 4, 7, 3, 2, 0], 135

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000428012143466

p = 0.000494071146245

Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation

Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation

Ant 2 : [0, 1, 3, 4, 6, 5, 2, 7], 110

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000428012143466

p = 0.000494071146245

Ant 14 : [6, 5, 4, 7, 3, 2, 1], 103

Exploration

avg = 0.000458977066883

p = 0.000603864733696

Ant 15 : [2, 7, 4, 6, 5, 3, 1], 99

Exploitation

Ant 16 : [6, 4, 7, 2, 3, 1, 0], 89

Exploitation

Ant 17 : [0, 4, 6, 5, 3, 2, 7], 104
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 19 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.00108695652065
Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00108695652173

Ant 4 : [6, 5, 4, 7, 3, 2, 1, 0], 113
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00108695652174

Ant 5 : [3, 7, 4, 6, 5, 2, 1, 0], 116
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00108695652174

Ant 6 : [5, 4, 6, 7, 3, 2, 1, 0], 123
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000387458035431

Ant 7 : [4, 6, 7, 3, 2, 1, 0, 5], 139
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00108695652174

Ant 8 : [5, 6, 4, 7, 2, 3, 1, 0], 105
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00108695652174

Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 5, 6, 4, 7, 2, 3], 115
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 6, 4, 7, 2, 3, 1, 0], 105
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113
ExplorationUpdate called by 12

avg = 0.00108695652174Ant thread 12 terminating.

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [6, 5, 4, 7, 3, 2, 1, 0], 113
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.00108695652174

Ant 15 : [2, 7, 4, 6, 5, 3, 1, 0], 109
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [6, 4, 7, 2, 3, 1, 0, 5], 117
ExploitationUpdate called by 16

Ant 17 : [0, 4, 6, 5, 3, 2, 7, 1], 143Ant thread 16 terminating.
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00108695652174

Ant 19 : [6, 5, 4, 7, 3, 2, 1, 0], 113
Update called by 19
Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 8, 147
Ant thread 19 terminating.iter_counter = 9

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [5, 4], 12starting ant = 2
Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4
Exploitationstarting ant = 5

Ant 0 : [5, 4, 6], 22starting ant = 6
Explorationstarting ant = 7

avg = 0.000362568211731starting ant = 8
p = 0.000977273723176starting ant = 9
p = 0.000488636901778starting ant = 10

Ant 2 : [0, 4], 20starting ant = 11

Exploitationstarting ant = 12

Ant 3 : [7, 4], 15starting ant = 13

Exploitationstarting ant = 14

Ant 1 : [1, 0, 4], 30starting ant = 15

Exploitationstarting ant = 16

Ant 4 : [6, 4], 10starting ant = 17

Exploitationstarting ant = 18

Ant 5 : [3, 4], 15starting ant = 19

Exploration

avg = 0.000190780796692

p = 0.000237952945484

p = 0.000315564838356

Ant 0 : [5, 4, 6, 7], 53

Exploration

avg = 0.000428565030179

p = 0.000444664031621

p = 0.00090489130434

p = 0.000611413043472

Ant 6 : [5, 6], 16

Exploration

avg = 0.000442363895327

p = 0.00048137286029

p = 0.00108586956522

p = 0.000652173913043

Ant 7 : [4, 7], 15

Exploitation

Ant 8 : [5, 4], 12

Exploitation

Ant 9 : [7, 4], 15

Exploitation

Ant 10 : [1, 0], 10

Exploitation

Ant 2 : [0, 4, 6], 30

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000346565392664

p = 0.000543478260864

p = 0.000489130434783

p = 0.000724630434783

Ant 12 : [7, 4], 15

Exploration

avg = 0.000407574906867

p = 0.00048137286029

p = 0.00108694565217

Ant 3 : [7, 4, 6], 25

Exploitation
Ant 13 : [7, 4], 15
Exploitation
Ant 14 : [6, 4], 10
Exploitation
Ant 1 : [1, 0, 4, 6], 40
Exploration
avg = 0.000363967219735
p = 0.000444664031621
p = 0.000543478260864
p = 0.000382411488655
p = 0.000543478206517
Ant 15 : [2, 7], 18
Exploration
avg = 0.000383854044832
p = 0.00108694565217
p = 0.000611413043478
Ant 16 : [6, 5], 16
Exploration
avg = 0.000347069472084
p = 0.00048137286029
p = 0.000723913043478
Ant 4 : [6, 4, 7], 25
Exploitation
Ant 17 : [0, 1], 10
Exploration
avg = 0.000346566427757
p = 0.000543478260864
p = 0.000489130434783
p = 0.000724637680435
Ant 18 : [7, 4], 15
Exploration
avg = 0.00047064089665
p = 0.00048137286029
p = 0.00108695652065
p = 0.000724630434783
Ant 5 : [3, 4, 7], 30
Exploitation
Ant 19 : [6, 4], 10
Exploitation
Ant 0 : [5, 4, 6, 7, 2], 71
Exploitation
Ant 6 : [5, 6, 4], 26
Exploitation
Ant 7 : [4, 7, 2], 33
Exploration
avg = 0.000448120843014
p = 0.00108695652065
p = 0.000724637608696
Ant 8 : [5, 4, 7], 27
Exploitation
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [1, 0, 4], 30

Exploitation
Ant 2 : [0, 4, 6, 5], 46
Exploration
avg = 0.00044812085515
p = 0.00108695652173
p = 0.000724637680435
Ant 11 : [5, 4, 7], 27
Exploration
avg = 0.000407576718459
p = 0.00048137286029
p = 0.00108695652173
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000263536035542
p = 0.000679341032609
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 14 : [6, 4, 7], 25
Exploitation
Ant 1 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.000313747789026
p = 0.000489130434783
p = 0.000724637681152
Ant 15 : [2, 7, 4], 33
Exploitation
Ant 16 : [6, 5, 4], 28
Exploration
avg = 0.000318833933805
p = 0.000603858695652
p = 0.000489130434783
Ant 4 : [6, 4, 7, 3], 45
Exploration
avg = 0.000249068839666
p = 0.000542445532551
p = 0.00037587792608
Ant 17 : [0, 1, 5], 36
Exploration
avg = 0.000407576718461
p = 0.00048137286029
p = 0.00108695652174
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 5 : [3, 4, 7, 2], 48
Exploration
avg = 0.000347190245031
p = 0.00048137286029
p = 0.000724637681159
Ant 19 : [6, 4, 7], 25
Exploration
avg = 0.000437966706368
p = 0.000444664031621

p = 0.000543478260864
Ant 0 : [5, 4, 6, 7, 2, 3], 89
Exploration
avg = 0.000320353721979
p = 0.000346245364565
p = 0.000724637681159
Ant 6 : [5, 6, 4, 7], 41
Exploration
avg = 0.000376822746427
p = 0.000444664031621
p = 0.000603260869565
p = 0.000382411488655
Ant 7 : [4, 7, 2, 5], 56
Exploration
avg = 0.000334746091233
p = 0.000603864673913
p = 0.000542934782609
Ant 8 : [5, 4, 7, 3], 47
Exploration
avg = 0.000263537394102
p = 0.000679347825408
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [1, 0, 4, 6], 40
Exploitation
Ant 2 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 11 : [5, 4, 7, 2], 45
Exploitation
Ant 12 : [7, 4, 6, 5], 41
Exploration
avg = 0.000347694072086
p = 0.000425326521263
p = 0.000493577075099
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000263537394238
p = 0.000679347826087
Ant 13 : [7, 4, 6, 5], 41
Exploitation
Ant 14 : [6, 4, 7, 2], 43
Exploitation
Ant 1 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 15 : [2, 7, 4, 6], 43
Exploitation
Ant 16 : [6, 5, 4, 7], 43
Exploitation
Ant 4 : [6, 4, 7, 3, 2], 63
Exploitation
Ant 17 : [0, 1, 5, 4], 48
Exploration
avg = 0.000263537394238
p = 0.000679347826087

Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000342532345735
p = 0.000444664031621
p = 0.000471688009026
Ant 5 : [3, 4, 7, 2, 5], 71
Exploitation
Ant 19 : [6, 4, 7, 2], 43
Exploitation
Ant 0 : [5, 4, 6, 7, 2, 3, 1], 107
Exploitation
Ant 6 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 7 : [4, 7, 2, 5, 6], 72
Exploitation
Ant 8 : [5, 4, 7, 3, 2], 65
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [1, 0, 4, 6, 5], 56
Exploration
avg = 0.00056510687085
p = 0.000603260869565
p = 0.000603858695652
Ant 2 : [0, 4, 6, 5, 3, 2], 86
Exploitation
Ant 11 : [5, 4, 7, 2, 3], 63
Exploration
avg = 0.000347817589749
p = 0.000425326521263
p = 0.000494071145751
Ant 12 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.00049660200118
p = 0.000603260869565
p = 0.000603864673913
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000347817589872
p = 0.000425326521263
p = 0.00049407114624
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000546032890515
p = 0.000603864733696
Ant 1 : [1, 0, 4, 6, 5, 3, 2], 96
Exploration
avg = 0.000289964423661
p = 0.000679347826087
Ant 15 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.0003766826201

p = 0.0006038647343
p = 0.000543472826087
Ant 16 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 4 : [6, 4, 7, 3, 2, 5], 86
Exploitation
Ant 17 : [0, 1, 5, 4, 6], 58
Exploration
avg = 0.000347817589873
p = 0.000425326521263
p = 0.000494071146245
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000383737908197
p = 0.000679341032609
Ant 5 : [3, 4, 7, 2, 5, 6], 87
Exploitation
Ant 19 : [6, 4, 7, 2, 3], 61
Exploitation
Ant 0 : [5, 4, 6, 7, 2, 3, 1, 0], 117
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000458095530645

p = 0.000603864733696
Ant 6 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000160169956186
p = 0.000237952945484
Ant 7 : [4, 7, 2, 5, 6, 1], 109
Exploitation
Ant 8 : [5, 4, 7, 3, 2, 1], 87
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000353728428695
p = 0.000425326521263
p = 0.000494071146245
Ant 10 : [1, 0, 4, 6, 5, 3], 78
Exploitation
Ant 2 : [0, 4, 6, 5, 3, 2, 7], 104
Exploration
avg = 0.000332448629027
p = 0.000603260869565
Ant 11 : [5, 4, 7, 2, 3, 1], 81
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000409667450859
p = 0.000493577075099
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploitation

Ant 14 : [6, 4, 7, 2, 3, 1], 79
Exploration
avg = 0.000603858695647
Ant 1 : [1, 0, 4, 6, 5, 3, 2, 7], 114
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.00032198127941

p = 0.000494071146245
Ant 15 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 16 : [6, 5, 4, 7, 3, 2], 81
Exploitation
Ant 4 : [6, 4, 7, 3, 2, 5, 1], 112
Exploration
avg = 0.000206504769022
p = 0.000350280473068
Ant 17 : [0, 1, 5, 4, 6, 7], 89
Exploration
avg = 0.000496803289425
p = 0.000603864673913
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000212183103824
p = 0.000293213842028
Ant 5 : [3, 4, 7, 2, 5, 6, 1], 124
Exploration
avg = 0.000428780854812
p = 0.000603864673913
Ant 19 : [6, 4, 7, 2, 3, 1], 79
Exploration
avg = 0.000443272596879
p = 0.000603864733696
Ant 6 : [5, 6, 4, 7, 2, 3, 1], 95
Exploration
avg = 0.000814700972797
p = 0.00108695641304
Ant 7 : [4, 7, 2, 5, 6, 1, 0], 119
Exploitation
Ant 8 : [5, 4, 7, 3, 2, 1, 0], 97
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000546032890816
p = 0.0006038647343
Ant 10 : [1, 0, 4, 6, 5, 3, 2], 96
Exploitation
Ant 2 : [0, 4, 6, 5, 3, 2, 7, 1], 143
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [5, 4, 7, 2, 3, 1, 0], 91

Exploitation

Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.00108695652174
Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 3Exploitation

Ant thread 3 terminating.Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation
Ant 14 : [6, 4, 7, 2, 3, 1, 0], 89
Exploration
avg = 0.000443272597178
p = 0.000603864734293
Ant 15 : [2, 7, 4, 6, 5, 3, 1], 99
Exploitation
Ant 16 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.00108695652174
Ant 4 : [6, 4, 7, 3, 2, 5, 1, 0], 122
Update called by 4Exploitation

Ant thread 4 terminating.Ant 17 : [0, 1, 5, 4, 6, 7, 2], 107

Exploitation
Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.00108695652174
Ant 5 : [3, 4, 7, 2, 5, 6, 1, 0], 134
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000752297449831

p = 0.00108695652174
Ant 19 : [6, 4, 7, 2, 3, 1, 0], 89
Exploration
avg = 0.00108695652174
Ant 6 : [5, 6, 4, 7, 2, 3, 1, 0], 105
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000150935206872

Ant 7 : [4, 7, 2, 5, 6, 1, 0, 3], 150
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.000199716990963

Ant 8 : [5, 4, 7, 3, 2, 1, 0, 6], 141
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000603864673913

Ant 10 : [1, 0, 4, 6, 5, 3, 2, 7], 114
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [5, 4, 7, 2, 3, 1, 0, 6], 135
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.000349378815323

Ant 14 : [6, 4, 7, 2, 3, 1, 0, 5], 117
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 7, 4, 6, 5, 3, 1, 0], 109
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [6, 5, 4, 7, 3, 2, 1, 0], 113
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000603864734293

Ant 17 : [0, 1, 5, 4, 6, 7, 2, 3], 125
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00108695652174

Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00038781055834

Ant 19 : [6, 4, 7, 2, 3, 1, 0, 5], 117
Update called by 19
Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 9, 151
Ant thread 19 terminating.iter_counter = 10

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [5, 4], 12starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [1, 0], 10starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [5, 4, 6], 22starting ant = 6

Exploitationstarting ant = 7

Ant 2 : [0, 1], 10starting ant = 8

Explorationstarting ant = 9

avg = 0.000330241576896starting ant = 10

p = 0.00054347826087starting ant = 11

p = 0.00048913038587starting ant = 12

p = 0.000652173913043starting ant = 13

Ant 3 : [7, 4], 15starting ant = 14

Explorationstarting ant = 15

avg = 0.000284906091573starting ant = 16

p = 0.000313770759078starting ant = 17

p = 0.000489130385425starting ant = 18

p = 0.000349375388193starting ant = 19

Ant 1 : [1, 0, 5], 38

Exploitation

Ant 4 : [6, 4], 10

Exploitation

Ant 5 : [3, 4], 15

Exploration

avg = 0.000188060450405

p = 0.000264389805894

p = 0.000315564866474

Ant 0 : [5, 4, 6, 7], 53

Exploitation

Ant 6 : [5, 4], 12

Exploration

avg = 0.000422956698341

p = 0.000433235574261

p = 0.00108586956522

p = 0.000652173913043

Ant 7 : [4, 7], 15

Exploration

avg = 0.000230426023476

p = 0.000488200979296

p = 0.000375874540131

Ant 2 : [0, 1, 5], 36

Exploitation
Ant 8 : [5, 4], 12
Exploitation
Ant 9 : [7, 4], 15
Exploitation
Ant 10 : [1, 0], 10
Exploitation
Ant 11 : [5, 4], 12
Exploitation
Ant 12 : [7, 4], 15
Exploitation
Ant 13 : [7, 4], 15
Exploitation
Ant 3 : [7, 4, 6], 25
Exploration
avg = 0.000381757209655
p = 0.00108586956521
p = 0.000611413043478
Ant 14 : [6, 5], 16
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [6, 4], 10
Exploration
avg = 0.00040481876844
p = 0.00108585969377
p = 0.000489130385425
Ant 17 : [0, 4], 20
Exploration
avg = 0.000340593543666
p = 0.00054347826087
p = 0.00048913038587
p = 0.000724637680435
Ant 18 : [7, 4], 15
Exploration
avg = 0.000391518855619
p = 0.00108694565217
p = 0.000678668478261
Ant 19 : [6, 5], 16
Exploration
avg = 0.000494455368071
p = 0.000905797100543
p = 0.000611412982337
Ant 1 : [1, 0, 5, 6], 54
Exploration
avg = 0.000324427742267
p = 0.000433235574261
p = 0.000723913043478
Ant 4 : [6, 4, 7], 25
Exploitation
Ant 5 : [3, 4, 6], 25
Exploration
avg = 0.000345280999211
p = 0.00054347826087

p = 0.00048913038587
Ant 0 : [5, 4, 6, 7, 3], 73
Exploitation
Ant 6 : [5, 4, 6], 22
Exploitation
Ant 7 : [4, 7, 2], 33
Exploration
avg = 0.000507906467134
p = 0.000905797100543
p = 0.000678668477649
Ant 2 : [0, 1, 5, 6], 52
Exploitation
Ant 8 : [5, 4, 6], 22
Exploitation
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [1, 0, 4], 30
Exploration
avg = 0.000433500798731
p = 0.00108695652174
p = 0.000724630434783
Ant 11 : [5, 4, 7], 27
Exploration
avg = 0.000384934988644
p = 0.000433235574261
p = 0.00108695652174
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000384934988644
p = 0.000433235574261
p = 0.00108695652174
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 3 : [7, 4, 6, 5], 41
Exploration
avg = 0.000397749090347
p = 0.000444664031621
p = 0.000905797100543
Ant 14 : [6, 5, 4], 28
Exploration
avg = 0.000403543311527
p = 0.00054347826087
p = 0.000723906462515
p = 0.0004393809426
Ant 15 : [2, 3, 7], 38
Exploitation
Ant 16 : [6, 4, 7], 25
Exploitation
Ant 17 : [0, 4, 6], 30
Exploration
avg = 0.000384934988644
p = 0.000433235574261
p = 0.00108695652174
Ant 18 : [7, 4, 6], 25

Exploitation
Ant 19 : [6, 5, 4], 28
Exploitation
Ant 1 : [1, 0, 5, 6, 4], 64
Exploration
avg = 0.000324463971702
p = 0.000603260869565
p = 0.00054293478212
Ant 4 : [6, 4, 7, 3], 45
Exploitation
Ant 5 : [3, 4, 6, 5], 41
Exploitation
Ant 0 : [5, 4, 6, 7, 3, 2], 91
Exploitation
Ant 6 : [5, 4, 6, 7], 53
Exploitation
Ant 7 : [4, 7, 2, 3], 51
Exploitation
Ant 2 : [0, 1, 5, 6, 4], 62
Exploration
avg = 0.000195073002994
p = 0.000264389805894
p = 0.000350627629418
Ant 8 : [5, 4, 6, 7], 53
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [1, 0, 4, 6], 40
Exploration
avg = 0.000329206663484
p = 0.000603260869565
p = 0.000543472826082
Ant 11 : [5, 4, 7, 3], 47
Exploration
avg = 0.000260817042326
p = 0.000264389805894
p = 0.00067934782608
Ant 12 : [7, 4, 6, 5], 41
Exploitation
Ant 13 : [7, 4, 6, 5], 41
Exploration
avg = 0.000338272146204
p = 0.000375234531498
p = 0.000382793869137
p = 0.000444664031621
Ant 3 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 5, 4, 7], 43
Exploitation
Ant 15 : [2, 3, 7, 4], 53
Exploitation
Ant 16 : [6, 4, 7, 2], 43
Exploitation
Ant 17 : [0, 4, 6, 5], 46

Exploration
avg = 0.000260817042327
p = 0.000264389805894
p = 0.000679347826087
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000302811103403
p = 0.000311620828109
p = 0.000724637681152
Ant 19 : [6, 5, 4, 7], 43
Exploration
avg = 0.000399407865548
p = 0.000724637681159
Ant 1 : [1, 0, 5, 6, 4, 7], 79
Exploitation
Ant 4 : [6, 4, 7, 3, 2], 63
Exploration
avg = 0.000259008352479
p = 0.000375234531498
p = 0.000382793869137
Ant 5 : [3, 4, 6, 5, 2], 64
Exploitation
Ant 0 : [5, 4, 6, 7, 3, 2, 1], 113
Exploitation
Ant 6 : [5, 4, 6, 7, 2], 71
Exploration
avg = 0.000314493116012
p = 0.00054347826087
p = 0.000359817687413
Ant 7 : [4, 7, 2, 3, 5], 73
Exploration
avg = 0.000399407865548
p = 0.000724637681159
Ant 2 : [0, 1, 5, 6, 4, 7], 77
Exploitation
Ant 8 : [5, 4, 6, 7, 2], 71
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000318072344416
p = 0.000679347826087
p = 0.000350631100979
Ant 10 : [1, 0, 4, 6, 7], 71
Exploration
avg = 0.000375503368072
p = 0.00054347826087
p = 0.000603858695652
Ant 11 : [5, 4, 7, 3, 2], 65
Exploration
avg = 0.000372847180606
p = 0.000375234531498
p = 0.000471691832831
p = 0.000494066205534
Ant 12 : [7, 4, 6, 5, 3], 63

Exploration
avg = 0.000372848403432
p = 0.000375234531498
p = 0.000471691832831
p = 0.000494071096838
Ant 13 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000467251782946
p = 0.00054347826087
p = 0.000603864673913
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 14 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 15 : [2, 3, 7, 4, 6], 63
Exploration
avg = 0.0004539871366
p = 0.000493577075099
p = 0.000603858695652
Ant 16 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.0003671515917
p = 0.000375234531498
p = 0.000471691832831
p = 0.000494071145751
Ant 17 : [0, 4, 6, 5, 3], 68
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 19 : [6, 5, 4, 7, 2], 61
Exploration
avg = 0.000573671470411
p = 0.000603864734299
Ant 1 : [1, 0, 5, 6, 4, 7, 2], 97
Exploration
avg = 0.00040402995025
p = 0.000493577075099
p = 0.000425330731694
Ant 4 : [6, 4, 7, 3, 2, 5], 86
Exploration
avg = 0.000443412459794
p = 0.000493577075099
p = 0.000543478260326
Ant 5 : [3, 4, 6, 5, 2, 7], 82
Exploration
avg = 0.00108694565217
Ant 0 : [5, 4, 6, 7, 3, 2, 1, 0], 123
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [5, 4, 6, 7, 2, 3], 89

Exploration
avg = 0.000401657238888
p = 0.000679341032603

Ant 7 : [4, 7, 2, 3, 5, 6], 89
Exploitation
Ant 2 : [0, 1, 5, 6, 4, 7, 2], 95
Exploration
avg = 0.00046354128425
p = 0.000493577075099
p = 0.000603864733696
Ant 8 : [5, 4, 6, 7, 2, 3], 89
Exploration
avg = 0.000467251802874
p = 0.00054347826087
p = 0.000603864733696
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000424983932514
p = 0.0006038647343
p = 0.000543478206522
Ant 10 : [1, 0, 4, 6, 7, 3], 91
Exploration
avg = 0.000300658894387
p = 0.000493577075099
Ant 11 : [5, 4, 7, 3, 2, 1], 87
Exploration
avg = 0.000467251803073
p = 0.00054347826087
p = 0.000603864734293
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000393624124745
p = 0.000494066205534
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000463705958363
p = 0.000494071096838
p = 0.000603864734293
Ant 14 : [6, 5, 4, 7, 2, 3], 79
Exploitation
Ant 15 : [2, 3, 7, 4, 6, 5], 79
Exploration
avg = 0.000430206428861
p = 0.00054347826087
p = 0.000492728611657
Ant 16 : [6, 4, 7, 2, 3, 5], 83
Exploitation
Ant 17 : [0, 4, 6, 5, 3, 2], 86
Exploration
avg = 0.000467251803075
p = 0.00054347826087
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 19 : [6, 5, 4, 7, 2, 3], 79

Exploration
avg = 0.0006038647343
Ant 1 : [1, 0, 5, 6, 4, 7, 2, 3], 115
Update called by 1Exploitation

Ant thread 1 terminating.Ant 4 : [6, 4, 7, 3, 2, 5, 1], 112

Exploitation
Ant 5 : [3, 4, 6, 5, 2, 7, 1], 121
Exploitation
Ant 6 : [5, 4, 6, 7, 2, 3, 1], 107
Exploration
avg = 0.000191213467476
p = 0.000264389805894
Ant 7 : [4, 7, 2, 3, 5, 6, 1], 126
Exploration
avg = 0.0006038647343
Ant 2 : [0, 1, 5, 6, 4, 7, 2, 3], 113
Update called by 2Exploitation

Ant thread 2 terminating.Ant 8 : [5, 4, 6, 7, 2, 3, 1], 107

Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000548961227599
p = 0.0006038647343
Ant 10 : [1, 0, 4, 6, 7, 3, 2], 109
Exploitation
Ant 11 : [5, 4, 7, 3, 2, 1, 0], 97
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000429135554854

p = 0.000603858695652
Ant 14 : [6, 5, 4, 7, 2, 3, 1], 97
Exploration
avg = 0.00028401404827
p = 0.000417631943977
Ant 15 : [2, 3, 7, 4, 6, 5, 1], 105
Exploitation
Ant 16 : [6, 4, 7, 2, 3, 5, 1], 109
Exploitation
Ant 17 : [0, 4, 6, 5, 3, 2, 7], 104
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000429138543985

p = 0.000603864673913
Ant 19 : [6, 5, 4, 7, 2, 3, 1], 97
Exploration
avg = 0.00108695652173
Ant 4 : [6, 4, 7, 3, 2, 5, 1, 0], 122
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 6, 5, 2, 7, 1, 0], 131
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.00108695652174

Ant 6 : [5, 4, 6, 7, 2, 3, 1, 0], 117
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00108695652174

Ant 7 : [4, 7, 2, 3, 5, 6, 1, 0], 136
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.00108695652174

Ant 8 : [5, 4, 6, 7, 2, 3, 1, 0], 117
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00108695652174

Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 4, 6, 7, 3, 2, 5], 132
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000222327757138

Ant 11 : [5, 4, 7, 3, 2, 1, 0, 6], 141
ExploitationUpdate called by 11

Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113Ant thread 11 terminating.
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [6, 5, 4, 7, 2, 3, 1, 0], 107
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 7, 4, 6, 5, 1, 0], 115

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.00108695652174

Ant 16 : [6, 4, 7, 2, 3, 5, 1, 0], 119

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000278425562158

Ant 17 : [0, 4, 6, 5, 3, 2, 7, 1], 143

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00108695652174

Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [6, 5, 4, 7, 2, 3, 1, 0], 107

Update called by 19

Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 10, 153

Ant thread 19 terminating.iter_counter = 11

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [5, 4], 12starting ant = 2

Explorationstarting ant = 3

avg = 0.000322878402839starting ant = 4

p = 0.000978260869565starting ant = 5

p = 0.000439380881366starting ant = 6

p = 0.000375874509657starting ant = 7

Ant 1 : [1, 5], 26starting ant = 8

Exploitationstarting ant = 9

Ant 0 : [5, 4, 6], 22starting ant = 10

Exploitationstarting ant = 11

Ant 2 : [0, 1], 10starting ant = 12

Explorationstarting ant = 13

avg = 0.000324901307654starting ant = 14

p = 0.00054347826087starting ant = 15

p = 0.000489130434293starting ant = 16

p = 0.000652173913043starting ant = 17

Ant 3 : [7, 4], 15starting ant = 18

Exploitationstarting ant = 19

Ant 4 : [6, 4], 10

Exploitation

Ant 5 : [3, 4], 15

Exploration

avg = 0.000430278516895

p = 0.000444664031621

p = 0.000904891304348

p = 0.000611412982337

Ant 6 : [5, 6], 16

Exploration

avg = 0.000405490221053

p = 0.00108586956522

p = 0.000652173913043

Ant 7 : [4, 7], 15

Exploration

avg = 0.000450491828587

p = 0.000904891304348

p = 0.000678668477649

Ant 1 : [1, 5, 6], 42

Exploitation

Ant 8 : [5, 4], 12

Exploitation

Ant 9 : [7, 4], 15

Exploration

avg = 0.000180802246677

p = 0.000264130389569

p = 0.000315568022125

Ant 0 : [5, 4, 6, 7], 53

Exploration

avg = 0.000328844664854

p = 0.000978260869565

p = 0.000439380881366

p = 0.000417638343759

Ant 10 : [1, 5], 26

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000220678237126

p = 0.000439380881366

p = 0.0004180559821

Ant 2 : [0, 1, 5], 36

Exploitation

Ant 12 : [7, 4], 15

Exploitation

Ant 13 : [7, 4], 15

Exploration

avg = 0.000376572332122
p = 0.00108586956521
p = 0.000611413043478
Ant 14 : [6, 5], 16
Exploration
avg = 0.000352895700573
p = 0.000444664031621
p = 0.00054347826087
p = 0.000425326559539
p = 0.00054347826087
Ant 15 : [2, 7], 18
Exploitation
Ant 16 : [6, 4], 10
Exploration
avg = 0.000389981010169
p = 0.00108585969377
p = 0.000489125543474
Ant 17 : [0, 4], 20
Exploitation
Ant 3 : [7, 4, 6], 25
Exploitation
Ant 18 : [7, 4], 15
Exploration
avg = 0.000386333978086
p = 0.00108694565217
p = 0.000678668478261
Ant 19 : [6, 5], 16
Exploration
avg = 0.000304050185432
p = 0.000389912016835
p = 0.000723913043478
Ant 4 : [6, 4, 7], 25
Exploitation
Ant 5 : [3, 4, 6], 25
Exploration
avg = 0.00033761156139
p = 0.00108694565217
p = 0.000350280504906
Ant 6 : [5, 6, 7], 47
Exploration
avg = 0.000270355873423
p = 0.00054347826087
p = 0.000489130434293
Ant 7 : [4, 7, 3], 35
Exploration
avg = 0.000352377220719
p = 0.00108694565217
Ant 1 : [1, 5, 6, 4], 52
Exploration
avg = 0.000420343816684
p = 0.00108695641304
p = 0.000724630434783
Ant 8 : [5, 4, 7], 27
Exploitation

Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000356346443325
p = 0.00054347826087
p = 0.000542934782604
Ant 0 : [5, 4, 6, 7, 3], 73
Exploration
avg = 0.000450754872166
p = 0.00090579701087
p = 0.000679341032603
Ant 10 : [1, 5, 6], 42
Exploitation
Ant 11 : [5, 4, 6], 22
Exploration
avg = 0.000513835884248
p = 0.00090579701087
p = 0.000679347758152
Ant 2 : [0, 1, 5, 6], 52
Exploitation
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.000364557431809
p = 0.000389912016835
p = 0.00108695652174
Ant 13 : [7, 4, 6], 25
Exploitation
Ant 14 : [6, 5, 4], 28
Exploration
avg = 0.000309606175436
p = 0.000543472826087
p = 0.000724637681152
Ant 15 : [2, 7, 4], 33
Exploitation
Ant 16 : [6, 4, 7], 25
Exploration
avg = 0.00045374718651
p = 0.00108695652174
p = 0.000724637680435
Ant 17 : [0, 4, 7], 35
Exploitation
Ant 3 : [7, 4, 6, 5], 41
Exploration
avg = 0.000364557431809
p = 0.000389912016835
p = 0.00108695652174
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [6, 5, 4], 28
Exploitation
Ant 4 : [6, 4, 7, 2], 43
Exploration
avg = 0.000305636181521
p = 0.000679347758152
p = 0.000350627629733

Ant 5 : [3, 4, 6, 7], 56
Exploration
avg = 0.000442068821328
p = 0.000603260869565
p = 0.000543472826087
p = 0.000724637681159
Ant 6 : [5, 6, 7, 4], 62
Exploration
avg = 0.000370163466839
p = 0.000543478260326
p = 0.00054347826087
p = 0.000444651948809
Ant 7 : [4, 7, 3, 5], 57
Exploration
avg = 0.000335091039329
p = 0.000724637681152
Ant 1 : [1, 5, 6, 4, 7], 67
Exploration
avg = 0.000324282453996
p = 0.000603260869565
p = 0.000543472826087
Ant 8 : [5, 4, 7, 3], 47
Exploration
avg = 0.000253558193882
p = 0.000264130389569
p = 0.000679347758152
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 0 : [5, 4, 6, 7, 3, 2], 91
Exploitation
Ant 10 : [1, 5, 6, 4], 52
Exploitation
Ant 11 : [5, 4, 6, 7], 53
Exploration
avg = 0.000413916765471
p = 0.00108695652065
Ant 2 : [0, 1, 5, 6, 4], 62
Exploration
avg = 0.000253558207333
p = 0.000264130389569
p = 0.000679347825408
Ant 12 : [7, 4, 6, 5], 41
Exploitation
Ant 13 : [7, 4, 6, 5], 41
Exploitation
Ant 14 : [6, 5, 4, 7], 43
Exploitation
Ant 15 : [2, 7, 4, 6], 43
Exploration
avg = 0.000320111955392
p = 0.000603260869565
p = 0.000543478206522
Ant 16 : [6, 4, 7, 3], 45
Exploration

avg = 0.000329625306939
p = 0.000603260869565
p = 0.000543478260326
Ant 17 : [0, 4, 7, 3], 55
Exploitation
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000253558207469
p = 0.000264130389569
p = 0.000679347826087
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000287022746687
p = 0.000724637681159
Ant 19 : [6, 5, 4, 7], 43
Exploitation
Ant 4 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.00026427039261
p = 0.000603260869565
Ant 5 : [3, 4, 6, 7, 2], 74
Exploitation
Ant 6 : [5, 6, 7, 4, 3], 77
Exploration
avg = 0.00040387028858
p = 0.000424522649548
p = 0.000679347825408
Ant 7 : [4, 7, 3, 5, 6], 73
Exploration
avg = 0.000411825365696
p = 0.000603858695652
p = 0.000543478260864
Ant 1 : [1, 5, 6, 4, 7, 3], 87
Exploitation
Ant 8 : [5, 4, 7, 3, 2], 65
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 0 : [5, 4, 6, 7, 3, 2, 1], 113
Exploration
avg = 0.000445025325956
p = 0.000720195891801
p = 0.000724637681159
Ant 10 : [1, 5, 6, 4, 7], 67
Exploitation
Ant 11 : [5, 4, 6, 7, 2], 71
Exploitation
Ant 2 : [0, 1, 5, 6, 4, 7], 77
Exploration
avg = 0.000357549883612
p = 0.000376254142059
p = 0.000424522649548
p = 0.000494066205534
Ant 12 : [7, 4, 6, 5, 3], 63

Exploration
avg = 0.000357551106438
p = 0.000376254142059
p = 0.000424522649548
p = 0.000494071096838
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 5, 4, 7, 2], 61
Exploration
avg = 0.000284987330836
p = 0.000679347826087
Ant 15 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 16 : [6, 4, 7, 3, 2], 63
Exploitation
Ant 17 : [0, 4, 7, 3, 2], 73
Exploration
avg = 0.000458771388891
p = 0.000543478260326
p = 0.000603864733696
Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000357551118666
p = 0.000376254142059
p = 0.000424522649548
p = 0.000494071145751
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 19 : [6, 5, 4, 7, 2], 61
Exploration
avg = 0.000422008795749
p = 0.000543478260326
p = 0.000493576954271
Ant 4 : [6, 4, 7, 2, 3, 5], 83
Exploitation
Ant 5 : [3, 4, 6, 7, 2, 1], 96
Exploration
avg = 0.00045877138909
p = 0.000543478260326
p = 0.000603864734293
Ant 6 : [5, 6, 7, 4, 3, 2], 95
Exploration
avg = 0.000166068506574
p = 0.000264130389569
Ant 7 : [4, 7, 3, 5, 6, 1], 110
Exploitation
Ant 1 : [1, 5, 6, 4, 7, 3, 2], 105
Exploration
avg = 0.000287208617597
p = 0.000494066205534
Ant 8 : [5, 4, 7, 3, 2, 1], 87
Exploration
avg = 0.000458771389092
p = 0.000543478260326

p = 0.0006038647343
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 0 : [5, 4, 6, 7, 3, 2, 1, 0], 123
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000411827378578

p = 0.000603864734293
p = 0.00054347826087
Ant 10 : [1, 5, 6, 4, 7, 3], 87
Exploitation
Ant 11 : [5, 4, 6, 7, 2, 3], 89
Exploitation
Ant 2 : [0, 1, 5, 6, 4, 7, 2], 95
Exploration
avg = 0.000458771389092
p = 0.000543478260326
p = 0.0006038647343
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000458771389092
p = 0.000543478260326
p = 0.0006038647343
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 14 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000335227275202
p = 0.000376254142059
p = 0.00049407114624
Ant 15 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 16 : [6, 4, 7, 3, 2, 1], 85
Exploration
avg = 0.000341031170995
p = 0.000494071145751
p = 0.000425326559539
Ant 17 : [0, 4, 7, 3, 2, 5], 96
Exploration
avg = 0.000378967492656
p = 0.000494071145751
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000458771389092
p = 0.000543478260326
p = 0.0006038647343
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.000453933219905
p = 0.00049407114624
p = 0.000603864673913
Ant 19 : [6, 5, 4, 7, 2, 3], 79
Exploitation

Ant 4 : [6, 4, 7, 2, 3, 5, 1], 109
Exploration
avg = 0.00075196486185
p = 0.00108586956522
Ant 5 : [3, 4, 6, 7, 2, 1, 0], 106
Exploration
avg = 0.000378967492901
p = 0.00049407114624
Ant 6 : [5, 6, 7, 4, 3, 2, 1], 117
Exploration
avg = 0.000629608804373
p = 0.00108694565217
Ant 7 : [4, 7, 3, 5, 6, 1, 0], 120
Exploration
avg = 0.000263863839561
Ant 1 : [1, 5, 6, 4, 7, 3, 2, 0], 135
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [5, 4, 7, 3, 2, 1, 0], 97

Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000416417953475
p = 0.0006038647343
Ant 10 : [1, 5, 6, 4, 7, 3, 2], 105
Exploration
avg = 0.000386224716489
p = 0.000543478260326
Ant 11 : [5, 4, 6, 7, 2, 3, 1], 107
Exploration
avg = 0.000603864733696
Ant 2 : [0, 1, 5, 6, 4, 7, 2, 3], 113
Update called by 2Exploitation

Ant thread 2 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation
Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000416116021105
p = 0.00060326086956
Ant 14 : [6, 5, 4, 7, 2, 3, 1], 97
Exploitation
Ant 15 : [2, 7, 4, 6, 5, 3, 1], 99
Exploitation
Ant 16 : [6, 4, 7, 3, 2, 1, 0], 95
Exploration
avg = 0.000548494983081
p = 0.00067934782608
Ant 17 : [0, 4, 7, 3, 2, 5, 6], 112
Exploration
avg = 0.00108695652173
Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000427702718407

p = 0.000494071146245

Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103

Exploitation

Ant 19 : [6, 5, 4, 7, 2, 3, 1], 97

Exploration

avg = 0.00108695652174

Ant 4 : [6, 4, 7, 2, 3, 5, 1, 0], 119

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 4, 6, 7, 2, 1, 0, 5], 134

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [5, 6, 7, 4, 3, 2, 1, 0], 127

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000213209893075

Ant 7 : [4, 7, 3, 5, 6, 1, 0, 2], 150

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [5, 4, 7, 3, 2, 1, 0, 6], 141

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00108695652174

Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 5, 6, 4, 7, 3, 2, 0], 135

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.00108695652174

Ant 11 : [5, 4, 6, 7, 2, 3, 1, 0], 117

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00108695652174

Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113

ExplorationUpdate called by 12

avg = 0.00108695652174Ant thread 12 terminating.

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.00108695652174

Ant 14 : [6, 5, 4, 7, 2, 3, 1, 0], 107
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 7, 4, 6, 5, 3, 1, 0], 109
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [6, 4, 7, 3, 2, 1, 0, 5], 123
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [0, 4, 7, 3, 2, 5, 6, 1], 149
ExploitationUpdate called by 17

Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113Ant thread 17 terminating.
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00108695652174

Ant 19 : [6, 5, 4, 7, 2, 3, 1, 0], 107
Update called by 19
Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 11, 152
Ant thread 19 terminating.iter_counter = 12

starting ant = 0
Explorationstarting ant = 1

avg = 0.000407775262083starting ant = 2

p = 0.000444664031621starting ant = 3

p = 0.000815217391296starting ant = 4

p = 0.000611413043478starting ant = 5

Ant 0 : [5, 6], 16starting ant = 6

Explorationstarting ant = 7

avg = 0.00030998958697starting ant = 8

p = 0.000978260869565starting ant = 9

p = 0.00039544279323starting ant = 10

p = 0.000376254142635starting ant = 11

Ant 1 : [1, 5], 26starting ant = 12

Explorationstarting ant = 13

avg = 0.00038508893447starting ant = 14

p = 0.000977273724389starting ant = 15

p = 0.000488641260326starting ant = 16

Ant 2 : [0, 4], 20starting ant = 17

Explorationstarting ant = 18

avg = 0.000316479499933starting ant = 19

p = 0.00054347826087

p = 0.000489130434783

p = 0.000652173913043

Ant 3 : [7, 4], 15

Exploration

avg = 0.000351645090935

p = 0.000978260869555

p = 0.000611413043478

Ant 4 : [6, 5], 16

Exploration

avg = 0.000415684871735

p = 0.000543478260326

p = 0.00054347826087

p = 0.000651515816259

p = 0.000444659583893

p = 0.000439374203026

Ant 5 : [3, 7], 20

Exploitation

Ant 0 : [5, 6, 4], 26

Exploitation

Ant 6 : [5, 4], 12

Exploitation

Ant 7 : [4, 6], 10

Exploitation

Ant 8 : [5, 4], 12

Exploration

avg = 0.000326727947138

p = 0.00054347826087

p = 0.000489130434783

p = 0.000723913043478

Ant 9 : [7, 4], 15

Exploitation

Ant 10 : [1, 0], 10

Exploitation

Ant 11 : [5, 4], 12

Exploration

avg = 0.000439397327144

p = 0.000444664031621

p = 0.00090579701087

p = 0.000678668478261

Ant 1 : [1, 5, 6], 42

Exploitation
Ant 12 : [7, 4], 15
Exploration
avg = 0.000326831456455
p = 0.00054347826087
p = 0.000489130434783
p = 0.000724637608696
Ant 13 : [7, 4], 15
Exploitation
Ant 14 : [6, 4], 10
Exploitation
Ant 15 : [2, 3], 18
Exploitation
Ant 16 : [6, 4], 10
Exploitation
Ant 2 : [0, 4, 6], 30
Exploitation
Ant 17 : [0, 1], 10
Exploitation
Ant 18 : [7, 4], 15
Exploration
avg = 0.000376780944973
p = 0.00108695641304
p = 0.000678668478261
Ant 19 : [6, 5], 16
Exploitation
Ant 3 : [7, 4, 6], 25
Exploration
avg = 0.000388932235113
p = 0.000444664031621
p = 0.00090579701087
Ant 4 : [6, 5, 4], 28
Exploration
avg = 0.00029978163881
p = 0.00054347826087
p = 0.000724637681152
Ant 5 : [3, 7, 4], 35
Exploitation
Ant 0 : [5, 6, 4, 7], 41
Exploration
avg = 0.000474343555904
p = 0.000648176302621
p = 0.00108695641304
p = 0.000723913043478
Ant 6 : [5, 4, 7], 27
Exploitation
Ant 7 : [4, 6, 5], 26
Exploration
avg = 0.000474463121121
p = 0.000648176302621
p = 0.00108695641304
p = 0.000724630434783
Ant 8 : [5, 4, 7], 27
Exploration

avg = 0.000412178184516
p = 0.000648176302621
p = 0.00108695641304
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000295439574573
p = 0.000324744975994
p = 0.000542929890864
p = 0.000349375356752
Ant 10 : [1, 0, 5], 38
Exploration
avg = 0.000474464334708
p = 0.000648176302621
p = 0.00108695652065
p = 0.000724637608696
Ant 11 : [5, 4, 7], 27
Exploration
avg = 0.000338881194938
p = 0.00108695641304
Ant 1 : [1, 5, 6, 4], 52
Exploration
avg = 0.000412178202451
p = 0.000648176302621
p = 0.00108695652065
Ant 12 : [7, 4, 6], 25
Exploration
avg = 0.00041217820263
p = 0.000648176302621
p = 0.00108695652173
Ant 13 : [7, 4, 6], 25
Exploration
avg = 0.000351791729081
p = 0.000648176302621
p = 0.000724637680435
Ant 14 : [6, 4, 7], 25
Exploration
avg = 0.00041156314309
p = 0.000543478260326
p = 0.000651515816259
p = 0.000444659583893
p = 0.000542437220291
Ant 15 : [2, 3, 7], 38
Exploration
avg = 0.000351791729201
p = 0.000648176302621
p = 0.000724637681152
Ant 16 : [6, 4, 7], 25
Exploration
avg = 0.000291115881425
p = 0.000679347758152
p = 0.000315568022125
Ant 2 : [0, 4, 6, 7], 61
Exploitation
Ant 17 : [0, 1, 5], 36

Exploitation
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000388932250058
p = 0.000444664031621
p = 0.000905797100543
Ant 19 : [6, 5, 4], 28
Exploitation
Ant 3 : [7, 4, 6, 5], 41
Exploration
avg = 0.000351965912012
p = 0.000648176302621
p = 0.000724637681159
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 5 : [3, 7, 4, 6], 45
Exploration
avg = 0.000334421038124
p = 0.00054347826087
p = 0.000489130434783
Ant 0 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 6 : [5, 4, 7, 2], 45
Exploitation
Ant 7 : [4, 6, 5, 3], 48
Exploitation
Ant 8 : [5, 4, 7, 2], 45
Exploration
avg = 0.000247124305359
p = 0.000264392161864
p = 0.000679347825408
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [1, 0, 5, 4], 50
Exploitation
Ant 11 : [5, 4, 7, 2], 45
Exploration
avg = 0.00041863873539
p = 0.000648176302621
p = 0.000724637681159
Ant 1 : [1, 5, 6, 4, 7], 67
Exploration
avg = 0.000247124305493
p = 0.000264392161864
p = 0.00067934782608
Ant 12 : [7, 4, 6, 5], 41
Exploitation
Ant 13 : [7, 4, 6, 5], 41
Exploration
avg = 0.000311047617462
p = 0.000603864673913
p = 0.000542934782609
Ant 14 : [6, 4, 7, 3], 45
Exploration

avg = 0.000251042314399
p = 0.000724637681159
Ant 15 : [2, 3, 7, 4], 53
Exploration
avg = 0.000311155226158
p = 0.000603864673913
p = 0.000543472826087
Ant 16 : [6, 4, 7, 3], 45
Exploration
avg = 0.000369114071177
p = 0.000603864673913
p = 0.000543478206522
Ant 2 : [0, 4, 6, 7, 3], 81
Exploitation
Ant 17 : [0, 1, 5, 4], 48
Exploration
avg = 0.000247124305494
p = 0.000264392161864
p = 0.000679347826087
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000351965912012
p = 0.000648176302621
p = 0.000724637681159
Ant 19 : [6, 5, 4, 7], 43
Exploration
avg = 0.000343336567335
p = 0.000375877926075
p = 0.000382070384593
p = 0.000493577075099
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000363104597771
p = 0.000603864673913
p = 0.000543478260326
Ant 4 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 5 : [3, 7, 4, 6, 5], 61
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2], 79
Exploration
avg = 0.000366832305921
p = 0.000444664031621
p = 0.000603260869565
Ant 6 : [5, 4, 7, 2, 3], 63
Exploration
avg = 0.000474070258935
p = 0.000543478260326
p = 0.000603260869565
p = 0.000543467850464
Ant 7 : [4, 6, 5, 3, 7], 68
Exploration
avg = 0.000366981762443
p = 0.000444664031621

p = 0.000603858695652
Ant 8 : [5, 4, 7, 2, 3], 63
Exploration
avg = 0.000343458849944
p = 0.000375877926075
p = 0.000382070384593
p = 0.000494066205534
Ant 9 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000647740556573
p = 0.000648176302621
p = 0.00108695652174
p = 0.000724637681159
Ant 10 : [1, 0, 5, 4, 7], 65
Exploration
avg = 0.000366983257008
p = 0.000444664031621
p = 0.000603864673913
Ant 11 : [5, 4, 7, 2, 3], 63
Exploitation
Ant 1 : [1, 5, 6, 4, 7, 2], 85
Exploration
avg = 0.00034346007277
p = 0.000375877926075
p = 0.000382070384593
p = 0.000494071096838
Ant 12 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 13 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 14 : [6, 4, 7, 3, 2], 63
Exploitation
Ant 15 : [2, 3, 7, 4, 6], 63
Exploration
avg = 0.000449517648814
p = 0.000543478260326
p = 0.000603858695652
Ant 16 : [6, 4, 7, 3, 2], 63
Exploitation
Ant 2 : [0, 4, 6, 7, 3, 2], 99
Exploitation
Ant 17 : [0, 1, 5, 4, 6], 58
Exploration
avg = 0.000343460085121
p = 0.000375877926075
p = 0.000382070384593
p = 0.00049407114624
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000363104612851
p = 0.000603864733696
p = 0.000543478260864
Ant 19 : [6, 5, 4, 7, 3], 63
Exploitation

Ant 3 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.000293256398081
p = 0.000375877926075
p = 0.000382070384593
Ant 5 : [3, 7, 4, 6, 5, 2], 84
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2, 1], 101
Exploration
avg = 0.000276922079365
p = 0.000543478260326
Ant 6 : [5, 4, 7, 2, 3, 1], 81
Exploration
avg = 0.000302980063514
p = 0.000603864733696
Ant 7 : [4, 6, 5, 3, 7, 2], 86
Exploitation
Ant 8 : [5, 4, 7, 2, 3, 1], 81
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 10 : [1, 0, 5, 4, 7, 2], 83
Exploration
avg = 0.000297048891141
p = 0.000603858695652
Ant 11 : [5, 4, 7, 2, 3, 1], 81
Exploitation
Ant 1 : [1, 5, 6, 4, 7, 2, 3], 103
Exploitation
Ant 12 : [7, 4, 6, 5, 3, 2], 81
Exploration
avg = 0.0004712678212
p = 0.000603864673913
p = 0.0006038647343
Ant 13 : [7, 4, 6, 5, 3, 2], 81
Exploitation
Ant 14 : [6, 4, 7, 3, 2, 1], 85
Exploitation
Ant 15 : [2, 3, 7, 4, 6, 5], 79
Exploitation
Ant 16 : [6, 4, 7, 3, 2, 1], 85
Exploration
avg = 0.0004594882703
p = 0.000494071096838
Ant 2 : [0, 4, 6, 7, 3, 2, 1], 121
Exploration
avg = 0.000182183989963
p = 0.000350280504906
Ant 17 : [0, 1, 5, 4, 6, 7], 89
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 2], 81
Exploitation

Ant 19 : [6, 5, 4, 7, 3, 2], 81
Exploration
avg = 0.000410074620661
p = 0.000494071145751
Ant 3 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000410074620906
p = 0.00049407114624
Ant 4 : [6, 5, 4, 7, 3, 2, 1], 103
Exploration
avg = 0.000410074620908
p = 0.000494071146245
Ant 5 : [3, 7, 4, 6, 5, 2, 1], 106
Exploitation
Ant 0 : [5, 6, 4, 7, 3, 2, 1, 0], 111
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [5, 4, 7, 2, 3, 1, 0], 91

Exploitation
Ant 7 : [4, 6, 5, 3, 7, 2, 1], 108
Exploration
avg = 0.000589572594902
p = 0.00108695641304
Ant 8 : [5, 4, 7, 2, 3, 1, 0], 91
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 2, 1], 103
Exploitation
Ant 10 : [1, 0, 5, 4, 7, 2, 3], 101
Exploitation
Ant 11 : [5, 4, 7, 2, 3, 1, 0], 91
Exploration
avg = 0.000206074055386
Ant 1 : [1, 5, 6, 4, 7, 2, 3, 0], 134
Update called by 1Exploitation

Ant thread 1 terminating.Ant 12 : [7, 4, 6, 5, 3, 2, 1], 103

Exploration
avg = 0.000410074620908
p = 0.000494071146245
Ant 13 : [7, 4, 6, 5, 3, 2, 1], 103
Exploration
avg = 0.000752506270896
p = 0.00108695652173
Ant 14 : [6, 4, 7, 3, 2, 1, 0], 95
Exploitation
Ant 15 : [2, 3, 7, 4, 6, 5, 1], 105
Exploration
avg = 0.000752506270901
p = 0.00108695652174
Ant 16 : [6, 4, 7, 3, 2, 1, 0], 95
Exploration
avg = 0.000418056020063

Ant 2 : [0, 4, 6, 7, 3, 2, 1, 5], 147
Update called by 2Exploitation

Ant thread 2 terminating.Ant 17 : [0, 1, 5, 4, 6, 7, 2], 107

Exploitation

Ant 18 : [7, 4, 6, 5, 3, 2, 1], 103

Exploration

avg = 0.000410074620908

p = 0.000494071146245

Ant 19 : [6, 5, 4, 7, 3, 2, 1], 103

Exploitation

Ant 3 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [6, 5, 4, 7, 3, 2, 1, 0], 113

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [3, 7, 4, 6, 5, 2, 1, 0], 116

ExplorationUpdate called by 5

avg = 0.000222107682461Ant thread 5 terminating.

Ant 6 : [5, 4, 7, 2, 3, 1, 0, 6], 135

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.00108695652174

Ant 7 : [4, 6, 5, 3, 7, 2, 1, 0], 118

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.000246786294216

Ant 8 : [5, 4, 7, 2, 3, 1, 0, 6], 135

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.00108695652174

Ant 9 : [7, 4, 6, 5, 3, 2, 1, 0], 113

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [1, 0, 5, 4, 7, 2, 3, 6], 143

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000247033080333

Ant 11 : [5, 4, 7, 2, 3, 1, 0, 6], 135

ExploitationUpdate called by 11

Ant 12 : [7, 4, 6, 5, 3, 2, 1, 0], 113Ant thread 11 terminating.

ExplorationUpdate called by 12

avg = 0.00108695652174Ant thread 12 terminating.

Ant 13 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [6, 4, 7, 3, 2, 1, 0, 5], 123
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [2, 3, 7, 4, 6, 5, 1, 0], 115
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000388194875424

Ant 16 : [6, 4, 7, 3, 2, 1, 0, 5], 123
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000603864734299

Ant 17 : [0, 1, 5, 4, 6, 7, 2, 3], 125
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.00108695652174

Ant 18 : [7, 4, 6, 5, 3, 2, 1, 0], 113
Update called by 18Exploration

Ant thread 18 terminating.avg = 0.00108695652174

Ant 19 : [6, 5, 4, 7, 3, 2, 1, 0], 113
Update called by 19
Best: [5, 6, 4, 7, 2, 3, 1, 0], 133, 12, 152
Ant thread 19 terminating.

Results

Best path = [5, 6, 4, 7, 2, 3, 1, 0]
('F ',)
('G ',)
('E ',)
('H ',)
('C ',)
('D ',)
('B ',)
('A ',)

Best path cost = 133

>>>

```

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
pickled.py
>>>
RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan
Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py
[[0, 10, 30, 31, 20, 28, 44, 43, 10], [10, 0, 22, 18, 40, 26, 37, 39, 19], [30,
22, 0, 18, 26, 23, 50, 18, 41], [31, 18, 18, 0, 15, 22, 42, 20, 12], [20, 40,
26, 15, 0, 12, 10, 15, 47], [28, 26, 23, 22, 12, 0, 16, 33, 28], [44, 37, 50,
42, 10, 16, 0, 31, 37], [43, 39, 18, 20, 15, 33, 31, 0, 34], [10, 19, 41, 12,
47, 28, 37, 34, 0]]
9
Average = 23
Tau0 = 0.00966183574879
iter_counter = 1
starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [7, 4], 15starting ant = 2

Explorationstarting ant = 3

avg = 0.000380856177665starting ant = 4

p = 0.000966183574879starting ant = 5

p = 0.0006038647343starting ant = 6

Ant 1 : [6, 5], 16starting ant = 7

Exploitationstarting ant = 8

Ant 0 : [7, 4, 6], 25starting ant = 9

Explorationstarting ant = 10

avg = 0.000380856177665starting ant = 11

p = 0.000966183574879starting ant = 12

p = 0.0006038647343starting ant = 13

Ant 2 : [6, 5], 16starting ant = 14

Explorationstarting ant = 15

avg = 0.000378130339785starting ant = 16

p = 0.000536768652711starting ant = 17

p = 0.00048309178744starting ant = 18

```

p = 0.000644122383253starting ant = 19

Ant 3 : [7, 4], 15

Exploration

avg = 0.000380856177665

p = 0.000966183574879

p = 0.0006038647343

Ant 4 : [6, 5], 16

Exploration

avg = 0.0004528493718

p = 0.000805152979066

p = 0.0006038647343

Ant 5 : [5, 6], 16

Exploitation

Ant 6 : [6, 4], 10

Exploitation

Ant 1 : [6, 5, 4], 28

Exploitation

Ant 7 : [5, 4], 12

Exploration

avg = 0.000498349329579

p = 0.000536768652711

p = 0.000536768652711

p = 0.000644122383253

p = 0.000805152979066

Ant 8 : [3, 8], 12

Exploitation

Ant 0 : [7, 4, 6, 5], 41

Exploitation

Ant 9 : [8, 0], 10

Exploitation

Ant 10 : [7, 4], 15

Exploration

avg = 0.000479817355368

p = 0.000966183574879

p = 0.00048309178744

p = 0.000966183574879

Ant 11 : [0, 8], 10

Exploitation

Ant 12 : [3, 8], 12

Exploration

avg = 0.000446583660733

p = 0.000966183574879

p = 0.000536768652711

p = 0.000508517670989

Ant 13 : [1, 8], 19

Exploitation

Ant 2 : [6, 5, 4], 28

Exploitation

Ant 14 : [6, 4], 10

Exploitation

Ant 15 : [3, 8], 12

Exploitation

Ant 16 : [7, 4], 15
Exploration
avg = 0.0004528493718
p = 0.000805152979066
p = 0.0006038647343
Ant 17 : [5, 6], 16
Exploitation
Ant 18 : [3, 8], 12
Exploitation
Ant 19 : [5, 4], 12
Exploitation
Ant 3 : [7, 4, 6], 25
Exploitation
Ant 4 : [6, 5, 4], 28
Exploration
avg = 0.000348997812432
p = 0.000966183574879
Ant 5 : [5, 6, 4], 26
Exploitation
Ant 6 : [6, 4, 5], 22
Exploitation
Ant 1 : [6, 5, 4, 3], 43
Exploitation
Ant 7 : [5, 4, 6], 22
Exploitation
Ant 8 : [3, 8, 0], 22
Exploitation
Ant 0 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 9 : [8, 0, 1], 20
Exploration
avg = 0.000531039522714
p = 0.000644122383253
p = 0.000805152979066
p = 0.000966183574879
Ant 10 : [7, 4, 6], 25
Exploration
avg = 0.000377894864562
p = 0.000508517670989
p = 0.000805152979066
Ant 11 : [0, 8, 3], 22
Exploitation
Ant 12 : [3, 8, 0], 22
Exploration
avg = 0.000443275707975
p = 0.000966183574879
p = 0.000805152979066
Ant 13 : [1, 8, 3], 31
Exploitation
Ant 2 : [6, 5, 4, 3], 43
Exploration
avg = 0.000485030781053
p = 0.000644122383253
p = 0.000805152979066

p = 0.000644122383253
Ant 14 : [6, 4, 7], 25
Exploration
avg = 0.000400899235392
p = 0.000966183574879
p = 0.000508517670989
Ant 15 : [3, 8, 1], 31
Exploration
avg = 0.000531039522714
p = 0.000644122383253
p = 0.000805152979066
p = 0.000966183574879
Ant 16 : [7, 4, 6], 25
Exploitation
Ant 17 : [5, 6, 4], 26
Exploitation
Ant 18 : [3, 8, 0], 22
Exploration
avg = 0.000508035151883
p = 0.000644122383253
p = 0.000966183574879
p = 0.000644122383253
Ant 19 : [5, 4, 7], 27
Exploration
avg = 0.000294832287586
p = 0.0006038647343
Ant 3 : [7, 4, 6, 5], 41
Exploration
avg = 0.000431677081384
p = 0.00048309178744
p = 0.000644122383253
p = 0.000644122383253
Ant 4 : [6, 5, 4, 7], 43
Exploration
avg = 0.000431677081384
p = 0.00048309178744
p = 0.000644122383253
p = 0.000644122383253
Ant 5 : [5, 6, 4, 7], 41
Exploitation
Ant 6 : [6, 4, 5, 3], 44
Exploration
avg = 0.000534690838571
p = 0.000536768652711
p = 0.000536768652711
p = 0.000805152979066
Ant 1 : [6, 5, 4, 3, 8], 55
Exploitation
Ant 7 : [5, 4, 6, 7], 53
Exploration
avg = 0.000426780524522
p = 0.000966183574879
p = 0.00048309178744
Ant 8 : [3, 8, 0, 4], 42

Exploitation
Ant 0 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.00034966134
p = 0.000439174352218
p = 0.000536768652711
p = 0.000371609067261
Ant 9 : [8, 0, 1, 5], 46
Exploitation
Ant 10 : [7, 4, 6, 5], 41
Exploitation
Ant 11 : [0, 8, 3, 4], 37
Exploitation
Ant 12 : [3, 8, 0, 1], 32
Exploitation
Ant 13 : [1, 8, 3, 4], 46
Exploitation
Ant 2 : [6, 5, 4, 3, 8], 55
Exploitation
Ant 14 : [6, 4, 7, 2], 43
Exploitation
Ant 15 : [3, 8, 1, 0], 41
Exploitation
Ant 16 : [7, 4, 6, 5], 41
Exploitation
Ant 17 : [5, 6, 4, 3], 41
Exploration
avg = 0.000426780524522
p = 0.000966183574879
p = 0.00048309178744
Ant 18 : [3, 8, 0, 4], 42
Exploitation
Ant 19 : [5, 4, 7, 2], 45
Exploration
avg = 0.000384198871912
p = 0.000420079815165
p = 0.000439174352218
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000355293062524
p = 0.000536768652711
p = 0.00048309178744
Ant 4 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 5 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 6 : [6, 4, 5, 3, 8], 56
Exploration
avg = 0.000498631853999
p = 0.000966183574879
p = 0.000508517670989
Ant 1 : [6, 5, 4, 3, 8, 1], 74
Exploration
avg = 0.000355293062524

p = 0.000536768652711
p = 0.00048309178744
Ant 7 : [5, 4, 6, 7, 3], 73
Exploration
avg = 0.000605722779636
p = 0.000805152979066
p = 0.000966183574879
p = 0.000644122383253
Ant 8 : [3, 8, 0, 4, 7], 57
Exploration
avg = 0.000570118592109
p = 0.000966183574879
Ant 0 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000512210956445
p = 0.000805152979066
p = 0.0006038647343
Ant 9 : [8, 0, 1, 5, 6], 62
Exploration
avg = 0.000384198871912
p = 0.000420079815165
p = 0.000439174352218
Ant 10 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000605722779636
p = 0.000805152979066
p = 0.000966183574879
p = 0.000644122383253
Ant 11 : [0, 8, 3, 4, 7], 52
Exploration
avg = 0.000312239877457
p = 0.000439174352218
p = 0.000371609067261
Ant 12 : [3, 8, 0, 1, 5], 58
Exploration
avg = 0.00065403195838
p = 0.000805152979066
p = 0.000966183574879
Ant 13 : [1, 8, 3, 4, 6], 56
Exploration
avg = 0.000498631853999
p = 0.000966183574879
p = 0.000508517670989
Ant 2 : [6, 5, 4, 3, 8, 1], 74
Exploitation
Ant 14 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000318899914451
p = 0.000322061191626
p = 0.00048309178744
p = 0.000345065562457
Ant 15 : [3, 8, 1, 0, 5], 69
Exploration
avg = 0.000384198871912

p = 0.000420079815165
p = 0.000439174352218
Ant 16 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 17 : [5, 6, 4, 3, 8], 53
Exploitation
Ant 18 : [3, 8, 0, 4, 6], 52
Exploration
avg = 0.000345379088398
p = 0.000439174352218
p = 0.000536768652711
Ant 19 : [5, 4, 7, 2, 3], 63
Exploration
avg = 0.000547590601354
p = 0.000805152979066
Ant 3 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 8], 75
Exploration
avg = 0.000383414681753
p = 0.000439174352218
p = 0.000536768652711
Ant 5 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000498631853999
p = 0.000966183574879
p = 0.000508517670989
Ant 6 : [6, 4, 5, 3, 8, 1], 75
Exploration
avg = 0.00055103243509
p = 0.000966183574879
Ant 1 : [6, 5, 4, 3, 8, 1, 0], 84
Exploration
avg = 0.000547590601354
p = 0.000805152979066
Ant 7 : [5, 4, 6, 7, 3, 8], 85
Exploitation
Ant 8 : [3, 8, 0, 4, 7, 2], 75
Exploration
avg = 0.000644122383253
p = 0.000966183574879
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 9 : [8, 0, 1, 5, 6, 4], 72
Exploitation
Ant 10 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000347240763323
p = 0.000536768652711
Ant 11 : [0, 8, 3, 4, 7, 2], 70
Exploitation
Ant 12 : [3, 8, 0, 1, 5, 4], 70
Exploitation
Ant 13 : [1, 8, 3, 4, 6, 5], 72

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Exploitation
Ant 2 : [6, 5, 4, 3, 8, 1, 0], 84
Exploration
avg = 0.000523192026231
p = 0.000536768652711
p = 0.000805152979066
Ant 14 : [6, 4, 7, 2, 3, 8], 73
Exploration
avg = 0.000530470107502
p = 0.000805152979066
p = 0.0006038647343
Ant 15 : [3, 8, 1, 0, 5, 6], 85
Exploitation
Ant 16 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 17 : [5, 6, 4, 3, 8, 0], 63
Exploration
avg = 0.000342476066529
p = 0.0006038647343
Ant 18 : [3, 8, 0, 4, 6, 5], 68
Exploration
avg = 0.000470909365253
p = 0.000536768652711
p = 0.000805152979066
Ant 19 : [5, 4, 7, 2, 3, 8], 75
Exploration
avg = 0.000570118592109
p = 0.000966183574879
Ant 3 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 8, 0], 85
Exploitation
Ant 5 : [5, 6, 4, 7, 2, 3, 8], 89
Exploitation
Ant 6 : [6, 4, 5, 3, 8, 1, 0], 85
Exploration
avg = 0.000273377523125
p = 0.000322061191626
Ant 1 : [6, 5, 4, 3, 8, 1, 0, 2], 114
Exploration
avg = 0.000570118592109
p = 0.000966183574879
Ant 7 : [5, 4, 6, 7, 3, 8, 0], 95
Exploitation
Ant 8 : [3, 8, 0, 4, 7, 2, 1], 97
Exploration
avg = 0.000439174352218
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000553284611256

p = 0.000644122383253
p = 0.000644122383253
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Ant 9 : [8, 0, 1, 5, 6, 4, 7], 87
Exploitation
Ant 10 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 11 : [0, 8, 3, 4, 7, 2, 1], 92
Exploration
avg = 0.000660638341798
p = 0.000966183574879
Ant 12 : [3, 8, 0, 1, 5, 4, 6], 80
Exploration
avg = 0.0003526427597
p = 0.000420079815165
Ant 13 : [1, 8, 3, 4, 6, 5, 2], 95
Exploration
avg = 0.000273377523125
p = 0.000322061191626
Ant 2 : [6, 5, 4, 3, 8, 1, 0, 2], 114
Exploration
avg = 0.000606588936108
p = 0.000966183574879
Ant 14 : [6, 4, 7, 2, 3, 8, 0], 83
Exploration
avg = 0.000490364136928
p = 0.000966183574879
Ant 15 : [3, 8, 1, 0, 5, 6, 4], 95
Exploitation
Ant 16 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.00050431287371
p = 0.000966183574879
Ant 17 : [5, 6, 4, 3, 8, 0, 1], 73
Exploitation
Ant 18 : [3, 8, 0, 4, 6, 5, 2], 91
Exploration
avg = 0.000578610647261
p = 0.000966183574879
Ant 19 : [5, 4, 7, 2, 3, 8, 0], 85
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploitation
Ant 5 : [5, 6, 4, 7, 2, 3, 8, 0], 99
Exploitation
Ant 6 : [6, 4, 5, 3, 8, 1, 0, 2], 115
Exploration
avg = 0.000536768652711
Ant 1 : [6, 5, 4, 3, 8, 1, 0, 2, 7], 132
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000644122383253

p = 0.000966183574879

Ant 7 : [5, 4, 6, 7, 3, 8, 0, 1], 105

Exploration
avg = 0.000316369881587
p = 0.000371609067261
Ant 8 : [3, 8, 0, 4, 7, 2, 1, 5], 123
Exploration
avg = 0.000509930220075
p = 0.000536768652711
Ant 9 : [8, 0, 1, 5, 6, 4, 7, 2], 105
Exploration
avg = 0.000644122383253
p = 0.000966183574879
Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 11 : [0, 8, 3, 4, 7, 2, 1, 5], 118
Exploration
avg = 0.000252454417952
p = 0.000311672120929
Ant 12 : [3, 8, 0, 1, 5, 4, 6, 7], 111
Exploitation
Ant 13 : [1, 8, 3, 4, 6, 5, 2, 7], 113
Exploration
avg = 0.000536768652711
Ant 2 : [6, 5, 4, 3, 8, 1, 0, 2, 7], 132
Update called by 2Exploitation

Ant thread 2 terminating.Ant 14 : [6, 4, 7, 2, 3, 8, 0, 1], 93

Exploration
avg = 0.000507865725257
p = 0.000644122383253
Ant 15 : [3, 8, 1, 0, 5, 6, 4, 7], 110
Exploration
avg = 0.000644122383253
p = 0.000966183574879
Ant 16 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 17 : [5, 6, 4, 3, 8, 0, 1, 2], 95
Exploitation
Ant 18 : [3, 8, 0, 4, 6, 5, 2, 7], 109
Exploration
avg = 0.000592885375494
p = 0.000966183574879
Ant 19 : [5, 4, 7, 2, 3, 8, 0, 1], 95
Exploration
avg = 0.000439174352218
Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000439174352218

Ant 4 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000966183574879

Ant 5 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 4, 5, 3, 8, 1, 0, 2, 7], 133
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000439174352218

Ant 7 : [5, 4, 6, 7, 3, 8, 0, 1, 2], 127
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 4, 7, 2, 1, 5, 6], 139
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [8, 0, 1, 5, 6, 4, 7, 2, 3], 123
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 8, 3, 4, 7, 2, 1, 5, 6], 134
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000536768652711

Ant 12 : [3, 8, 0, 1, 5, 4, 6, 7, 2], 129
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000224693854623

Ant 13 : [1, 8, 3, 4, 6, 5, 2, 7, 0], 156
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [6, 4, 7, 2, 3, 8, 0, 1, 5], 119
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000536768652711

Ant 15 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000439174352218

Ant 16 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000536768652711

Ant 17 : [5, 6, 4, 3, 8, 0, 1, 2, 7], 113
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 8, 0, 4, 6, 5, 2, 7, 1], 148

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 4, 7, 2, 3, 8, 0, 1, 6], 132

Update called by 19
Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 1, 151
Ant thread 19 terminating.iter_counter = 2

starting ant = 0
starting ant = 1Exploration

starting ant = 2avg = 0.000340317305806

starting ant = 3p = 0.00048309178744

starting ant = 4p = 0.000434782608696

starting ant = 5p = 0.000579710144928

starting ant = 6Ant 0 : [7, 4], 15

starting ant = 7Exploitation

starting ant = 8Ant 1 : [6, 4], 10

starting ant = 9Exploitation

starting ant = 10Ant 2 : [6, 4], 10

starting ant = 11Exploration

starting ant = 12avg = 0.000348288320299

starting ant = 13p = 0.00048309178744

starting ant = 14p = 0.000434782608696

starting ant = 15p = 0.00064347826087

starting ant = 16Ant 3 : [7, 4], 15

starting ant = 17Exploration

starting ant = 18avg = 0.000354846646855

starting ant = 19p = 0.000966173913043

p = 0.00054347826087

Ant 4 : [6, 5], 16
Exploitation
Ant 5 : [5, 4], 12
Exploitation
Ant 6 : [6, 4], 10
Exploitation
Ant 0 : [7, 4, 6], 25
Exploitation
Ant 7 : [5, 4], 12
Exploration
avg = 0.000448514396621
p = 0.00048309178744
p = 0.00048309178744
p = 0.000579710144928
p = 0.000724637681159
Ant 8 : [3, 8], 12
Exploitation
Ant 1 : [6, 4, 5], 22
Exploitation
Ant 9 : [8, 0], 10
Exploration
avg = 0.000348368030444
p = 0.00048309178744
p = 0.000434782608696
p = 0.000644115942029
Ant 10 : [7, 4], 15
Exploitation
Ant 2 : [6, 4, 5], 22
Exploitation
Ant 11 : [0, 1], 10
Exploration
avg = 0.000458478164737
p = 0.00048309178744
p = 0.00048309178744
p = 0.000579710144928
p = 0.000804347826087
Ant 12 : [3, 8], 12
Exploitation
Ant 13 : [1, 0], 10
Exploration
avg = 0.000362320668595
p = 0.000966183478261
p = 0.000603260869565
Ant 14 : [6, 5], 16
Exploitation
Ant 15 : [3, 8], 12
Exploitation
Ant 16 : [7, 4], 15
Exploration
avg = 0.000503101201912
p = 0.000579710144928
p = 0.000805144927536
p = 0.000965217391304
Ant 3 : [7, 4, 6], 25

Exploration
avg = 0.000417627840417
p = 0.000805144927536
p = 0.00054347826087
Ant 17 : [5, 6], 16
Exploitation
Ant 18 : [3, 8], 12
Exploration
avg = 0.000425100666504
p = 0.000805144927536
p = 0.000603260869565
Ant 19 : [5, 6], 16
Exploitation
Ant 4 : [6, 5, 4], 28
Exploitation
Ant 5 : [5, 4, 6], 22
Exploitation
Ant 6 : [6, 4, 5], 22
Exploration
avg = 0.000275412464624
p = 0.000603858695652
Ant 0 : [7, 4, 6, 5], 41
Exploitation
Ant 7 : [5, 4, 6], 22
Exploitation
Ant 8 : [3, 8, 0], 22
Exploitation
Ant 1 : [6, 4, 5, 3], 44
Exploration
avg = 0.000382967416453
p = 0.000965217391304
p = 0.000434782608696
Ant 9 : [8, 0, 4], 30
Exploration
avg = 0.000503240366716
p = 0.000579710144928
p = 0.000805152898551
p = 0.000966183573913
Ant 10 : [7, 4, 6], 25
Exploitation
Ant 2 : [6, 4, 5, 3], 44
Exploitation
Ant 11 : [0, 1, 3], 28
Exploitation
Ant 12 : [3, 8, 0], 22
Exploitation
Ant 13 : [1, 0, 8], 20
Exploitation
Ant 14 : [6, 5, 4], 28
Exploitation
Ant 15 : [3, 8, 0], 22
Exploration
avg = 0.000503240366852
p = 0.000579710144928

p = 0.000805152898551
p = 0.00096618357487
Ant 16 : [7, 4, 6], 25
Exploration
avg = 0.000275413461001
p = 0.000603864673913
Ant 3 : [7, 4, 6, 5], 41
Exploration
avg = 0.000327900639884
p = 0.000966183478261
Ant 17 : [5, 6, 4], 26
Exploration
avg = 0.000374611934213
p = 0.000966183573913
p = 0.00045766590389
Ant 18 : [3, 8, 1], 31
Exploration
avg = 0.000327900653549
p = 0.000966183573913
Ant 19 : [5, 6, 4], 26
Exploration
avg = 0.000388509373246
p = 0.000434782608696
p = 0.000579710144928
p = 0.000579710144928
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 5 : [5, 4, 6, 7], 53
Exploitation
Ant 6 : [6, 4, 5, 3], 44
Exploration
avg = 0.000354562462981
p = 0.000378071833648
p = 0.0004391743083
Ant 0 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000226662756817
p = 0.000235017626322
p = 0.000311360448808
p = 0.000235017626322
Ant 7 : [5, 4, 6, 8], 59
Exploration
avg = 0.000408015515548
p = 0.000965217391304
p = 0.000482608695652
Ant 8 : [3, 8, 0, 4], 42
Exploration
avg = 0.000497324814134
p = 0.000805152978261
Ant 1 : [6, 4, 5, 3, 8], 56
Exploitation
Ant 9 : [8, 0, 4, 6], 40
Exploration
avg = 0.000279722127448

p = 0.000603864733696
Ant 10 : [7, 4, 6, 5], 41
Exploration
avg = 0.000497324814294
p = 0.000805152979058
Ant 2 : [6, 4, 5, 3, 8], 56
Exploration
avg = 0.000484172295766
p = 0.000579710144928
p = 0.000805152979066
Ant 11 : [0, 1, 3, 8], 40
Exploitation
Ant 12 : [3, 8, 0, 1], 32
Exploitation
Ant 13 : [1, 0, 8, 3], 32
Exploitation
Ant 14 : [6, 5, 4, 7], 43
Exploration
avg = 0.000408254645983
p = 0.000966173913043
p = 0.000483086956522
Ant 15 : [3, 8, 0, 4], 42
Exploitation
Ant 16 : [7, 4, 6, 5], 41
Exploration
avg = 0.000354562471677
p = 0.000378071833648
p = 0.000439174351779
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000399243672763
p = 0.000434782608696
p = 0.000579710144928
p = 0.000644115942029
Ant 17 : [5, 6, 4, 7], 41
Exploration
avg = 0.00039504947331
p = 0.000965217391304
p = 0.000395256916996
Ant 18 : [3, 8, 1, 2], 53
Exploitation
Ant 19 : [5, 6, 4, 7], 41
Exploitation
Ant 4 : [6, 5, 4, 7, 2], 61
Exploration
avg = 0.000330391775595
p = 0.000536231884058
p = 0.000434782608696
Ant 5 : [5, 4, 6, 7, 3], 73
Exploration
avg = 0.000497324814295
p = 0.000805152979066
Ant 6 : [6, 4, 5, 3, 8], 56
Exploitation

Ant 0 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 7 : [5, 4, 6, 8, 0], 69
Exploration
avg = 0.000593459664184
p = 0.000805152898551
p = 0.000966183574879
p = 0.000644122382609
Ant 8 : [3, 8, 0, 4, 7], 57
Exploitation
Ant 1 : [6, 4, 5, 3, 8, 0], 66
Exploration
avg = 0.000306239038076
p = 0.000603864734299
p = 0.000311360448808
Ant 9 : [8, 0, 4, 6, 7], 71
Exploration
avg = 0.000354562471764
p = 0.000378071833648
p = 0.000439174352213
Ant 10 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000485509070328
p = 0.000966183574879
p = 0.000508009153318
Ant 2 : [6, 4, 5, 3, 8, 1], 75
Exploration
avg = 0.000239686812338
p = 0.000310559006211
p = 0.000255754475703
Ant 11 : [0, 1, 3, 8, 7], 74
Exploration
avg = 0.000289711541885
p = 0.000438735177866
p = 0.000334448160535
Ant 12 : [3, 8, 0, 1, 5], 58
Exploration
avg = 0.000419976159107
p = 0.00048309178744
p = 0.000579710144928
p = 0.000434782608696
Ant 13 : [1, 0, 8, 3, 7], 52
Exploitation
Ant 14 : [6, 5, 4, 7, 2], 61
Exploration
avg = 0.000593459664312
p = 0.000805152898551
p = 0.000966183574879
p = 0.000644122383246
Ant 15 : [3, 8, 0, 4, 7], 57
Exploitation
Ant 16 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000512960365695

p = 0.000805152979066
Ant 3 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000340063273179
p = 0.000536763285024
p = 0.000482608695652
Ant 17 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 18 : [3, 8, 1, 2, 7], 71
Exploitation
Ant 19 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.000345073213578
p = 0.000395256916996
p = 0.00048309178744
Ant 4 : [6, 5, 4, 7, 2, 3], 79
Exploitation
Ant 5 : [5, 4, 6, 7, 3, 8], 85
Exploitation
Ant 6 : [6, 4, 5, 3, 8, 0], 66
Exploitation
Ant 0 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000434689590876
p = 0.000966173913043
Ant 7 : [5, 4, 6, 8, 0, 1], 79
Exploration
avg = 0.000325935889889
p = 0.000536768599034
Ant 8 : [3, 8, 0, 4, 7, 2], 75
Exploitation
Ant 1 : [6, 4, 5, 3, 8, 0, 1], 76
Exploitation
Ant 9 : [8, 0, 4, 6, 7, 2], 89
Exploitation
Ant 10 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 2 : [6, 4, 5, 3, 8, 1, 0], 85
Exploration
avg = 0.00043122513887
p = 0.000536768652705
p = 0.000644122382609
Ant 11 : [0, 1, 3, 8, 7, 4], 89
Exploration
avg = 0.000512647029723
p = 0.000805152978261
p = 0.000603858695652
Ant 12 : [3, 8, 0, 1, 5, 6], 74
Exploitation
Ant 13 : [1, 0, 8, 3, 7, 4], 67
Exploration
avg = 0.000358358237733
p = 0.000395256916996
p = 0.000536231884058

Ant 14 : [6, 5, 4, 7, 2, 3], 79
Exploitation
Ant 15 : [3, 8, 0, 4, 7, 2], 75
Exploration
avg = 0.000512960365695
p = 0.000805152979066
Ant 16 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 17 : [5, 6, 4, 7, 3, 8], 73
Exploitation
Ant 18 : [3, 8, 1, 2, 7, 4], 86
Exploration
avg = 0.000358491087974
p = 0.000395256916996
p = 0.000536763285024
Ant 19 : [5, 6, 4, 7, 2, 3], 77
Exploitation
Ant 4 : [6, 5, 4, 7, 2, 3, 8], 91
Exploration
avg = 0.000562261746035
p = 0.000966183574879
Ant 5 : [5, 4, 6, 7, 3, 8, 0], 95
Exploration
avg = 0.000486087705179
p = 0.000966183573913
Ant 6 : [6, 4, 5, 3, 8, 0, 1], 76
Exploration
avg = 0.000628019323667
p = 0.00096618357487
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 7 : [5, 4, 6, 8, 0, 1, 3], 97
Exploration
avg = 0.000315747264708
p = 0.000395256916996
p = 0.000378071833648
Ant 8 : [3, 8, 0, 4, 7, 2, 5], 98
Exploration
avg = 0.000330850309111
p = 0.000438735177866
Ant 1 : [6, 4, 5, 3, 8, 0, 1, 2], 98
Exploitation
Ant 9 : [8, 0, 4, 6, 7, 2, 3], 107
Exploration
avg = 0.000562261746035
p = 0.000966183574879
Ant 10 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 2 : [6, 4, 5, 3, 8, 1, 0, 2], 115
Exploration
avg = 0.000701928211322
p = 0.000805152898551

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p = 0.000966183574879
Ant 11 : [0, 1, 3, 8, 7, 4, 6], 99
Exploration
avg = 0.000483921874185
p = 0.00096618357487
Ant 12 : [3, 8, 0, 1, 5, 6, 4], 84
Exploitation
Ant 13 : [1, 0, 8, 3, 7, 4, 6], 77
Exploration
avg = 0.000522916558447
p = 0.000805152979066
Ant 14 : [6, 5, 4, 7, 2, 3, 8], 91
Exploitation
Ant 15 : [3, 8, 0, 4, 7, 2, 5], 98
Exploration
avg = 0.000562261746035
p = 0.000966183574879
Ant 16 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000643961352657
p = 0.000966183574879
Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 17 : [5, 6, 4, 7, 3, 8, 0], 83
Exploration
avg = 0.000735373027375
p = 0.000805152898551
p = 0.000966183574879
Ant 18 : [3, 8, 1, 2, 7, 4, 6], 96
Exploitation
Ant 19 : [5, 6, 4, 7, 2, 3, 8], 89
Exploitation
Ant 4 : [6, 5, 4, 7, 2, 3, 8, 0], 101
Exploration
avg = 0.000643961352657
p = 0.000966183574879
Ant 5 : [5, 4, 6, 7, 3, 8, 0, 1], 105
Exploration
avg = 0.000331067700416
p = 0.000439169960474
Ant 6 : [6, 4, 5, 3, 8, 0, 1, 2], 98
Exploitation
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000482850241546

p = 0.00048309178744
Ant 7 : [5, 4, 6, 8, 0, 1, 3, 2], 115
Exploitation
Ant 8 : [3, 8, 0, 4, 7, 2, 5, 6], 114
Exploration
avg = 0.000536231884058
Ant 1 : [6, 4, 5, 3, 8, 0, 1, 2, 7], 116
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Update called by 1Exploitation

Ant thread 1 terminating.Ant 9 : [8, 0, 4, 6, 7, 2, 3, 1], 125

Exploitation

Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration

avg = 0.000536763285024

Ant 2 : [6, 4, 5, 3, 8, 1, 0, 2, 7], 133

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.0003888888888889

p = 0.000603864734299

Ant 11 : [0, 1, 3, 8, 7, 4, 6, 5], 115

Exploration

avg = 0.000489285271894

p = 0.000644122383253

Ant 12 : [3, 8, 0, 1, 5, 6, 4, 7], 99

Exploitation

Ant 13 : [1, 0, 8, 3, 7, 4, 6, 5], 93

Exploitation

Ant 14 : [6, 5, 4, 7, 2, 3, 8, 0], 101

Exploration

avg = 0.000469156447115

p = 0.000603864733696

Ant 15 : [3, 8, 0, 4, 7, 2, 5, 6], 114

Exploration

avg = 0.000643961352657

p = 0.000966183574879

Ant 16 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration

avg = 0.000439174351779

Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000643961352657

p = 0.000966183574879

Ant 17 : [5, 6, 4, 7, 3, 8, 0, 1], 93

Exploration

avg = 0.000400746596399

p = 0.0006038647343

Ant 18 : [3, 8, 1, 2, 7, 4, 6, 5], 112

Exploitation

Ant 19 : [5, 6, 4, 7, 2, 3, 8, 0], 99

Exploitation

Ant 4 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [5, 4, 6, 7, 3, 8, 0, 1, 2], 127

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 4, 5, 3, 8, 0, 1, 2, 7], 116
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [5, 4, 6, 8, 0, 1, 3, 2, 7], 133
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 4, 7, 2, 5, 6, 1], 151
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [8, 0, 4, 6, 7, 2, 3, 1, 5], 151
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000378071833648

Ant 11 : [0, 1, 3, 8, 7, 4, 6, 5, 2], 138
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [3, 8, 0, 1, 5, 6, 4, 7, 2], 117
Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.000966183574879

Ant 14 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000260869565217

Ant 15 : [3, 8, 0, 4, 7, 2, 5, 6, 1], 151
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000439174352218

Ant 16 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [5, 6, 4, 7, 3, 8, 0, 1, 2], 115
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 2, 150

Ant thread 19 terminating.iter_counter = 3

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [7, 4], 15starting ant = 2

Explorationstarting ant = 3

avg = 0.000335508277799starting ant = 4

p = 0.000869565217391starting ant = 5

p = 0.00054347826087starting ant = 6

Ant 1 : [6, 5], 16starting ant = 7

Explorationstarting ant = 8

avg = 0.000452916330168starting ant = 9

p = 0.000521739130435starting ant = 10

p = 0.000724637608696starting ant = 11

p = 0.000869565217391starting ant = 12

Ant 0 : [7, 4, 6], 25starting ant = 13

Explorationstarting ant = 14

avg = 0.000342981103886starting ant = 15

p = 0.000869565217391starting ant = 16

p = 0.000603260869565starting ant = 17

Ant 2 : [6, 5], 16starting ant = 18

Explorationstarting ant = 19

avg = 0.000332975853003

p = 0.00048309178744

p = 0.00043477826087

p = 0.00064347826087

Ant 3 : [7, 4], 15

Exploration

avg = 0.000343055832147

p = 0.000869565217391
p = 0.000603858695652
Ant 4 : [6, 5], 16
Exploitation
Ant 5 : [5, 4], 12
Exploitation
Ant 6 : [6, 4], 10
Exploration
avg = 0.000386511691926
p = 0.000395256916996
p = 0.00080434782608
Ant 1 : [6, 5, 4], 28
Exploration
avg = 0.000406232150725
p = 0.000805144927536
p = 0.000543478260864
Ant 7 : [5, 6], 16
Exploitation
Ant 8 : [3, 8], 12
Exploitation
Ant 9 : [8, 0], 10
Exploitation
Ant 10 : [7, 4], 15
Exploitation
Ant 11 : [0, 1], 10
Exploitation
Ant 12 : [3, 8], 12
Exploration
avg = 0.00026573088571
p = 0.000603864673913
Ant 0 : [7, 4, 6, 5], 41
Exploration
avg = 0.000387760182342
p = 0.00086956521739
p = 0.000395256916996
p = 0.000483086956522
p = 0.000411899313501
Ant 13 : [1, 8], 19
Exploration
avg = 0.000355013108642
p = 0.000965217391304
p = 0.000603864733696
Ant 14 : [6, 5], 16
Exploitation
Ant 15 : [3, 8], 12
Exploitation
Ant 16 : [7, 4], 15
Exploration
avg = 0.000413704976813
p = 0.000805144927536
p = 0.000603260869565
Ant 17 : [5, 6], 16
Exploration
avg = 0.000386625563562

p = 0.000395256916996
p = 0.000805144927536
Ant 2 : [6, 5, 4], 28
Exploitation
Ant 18 : [3, 8], 12
Exploitation
Ant 19 : [5, 4], 12
Exploitation
Ant 3 : [7, 4, 6], 25
Exploration
avg = 0.000386626713666
p = 0.000395256916996
p = 0.000805152978261
Ant 4 : [6, 5, 4], 28
Exploration
avg = 0.000446013649009
p = 0.000521739130435
p = 0.000966173913043
p = 0.000579710144928
Ant 5 : [5, 4, 7], 27
Exploration
avg = 0.000420618193522
p = 0.000521739130435
p = 0.000724637608696
p = 0.00064347826087
Ant 6 : [6, 4, 7], 25
Exploration
avg = 0.000370054571187
p = 0.000391304347826
p = 0.000521739130435
p = 0.000644115942029
Ant 1 : [6, 5, 4, 7], 43
Exploitation
Ant 7 : [5, 6, 4], 26
Exploitation
Ant 8 : [3, 8, 0], 22
Exploration
avg = 0.000368770047478
p = 0.000965217391304
p = 0.000434782565217
Ant 9 : [8, 0, 4], 30
Exploration
avg = 0.000466717572404
p = 0.000521739130435
p = 0.000724637608696
p = 0.000966173913043
Ant 10 : [7, 4, 6], 25
Exploration
avg = 0.00033259673013
p = 0.000395256916996
p = 0.000483086956522
p = 0.000334444816054
p = 0.000507551487414
Ant 11 : [0, 1, 8], 29

Exploration
avg = 0.000361106512699
p = 0.000966173913043
p = 0.000457661327231
Ant 12 : [3, 8, 1], 31
Exploitation
Ant 0 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 13 : [1, 8, 0], 29
Exploitation
Ant 14 : [6, 5, 4], 28
Exploitation
Ant 15 : [3, 8, 0], 22
Exploration
avg = 0.000466718938864
p = 0.000521739130435
p = 0.000724637608696
p = 0.000966183478261
Ant 16 : [7, 4, 6], 25
Exploration
avg = 0.000319599522454
p = 0.000966173913043
Ant 17 : [5, 6, 4], 26
Exploration
avg = 0.000370055633989
p = 0.000391304347826
p = 0.000521739130435
p = 0.000644122318841
Ant 2 : [6, 5, 4, 7], 43
Exploitation
Ant 18 : [3, 8, 0], 22
Exploration
avg = 0.000455216777373
p = 0.000521739130435
p = 0.000966183573913
p = 0.000644122382609
Ant 19 : [5, 4, 7], 27
Exploration
avg = 0.000265730895773
p = 0.000603864734293
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 4 : [6, 5, 4, 7], 43
Exploitation
Ant 5 : [5, 4, 7, 2], 45
Exploitation
Ant 6 : [6, 4, 7, 2], 43
Exploration
avg = 0.000316878298518
p = 0.000536763285024
p = 0.00043477826087
Ant 1 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 7 : [5, 6, 4, 7], 41

Exploration
avg = 0.000396127007399
p = 0.000965217391304
p = 0.000482608695217
Ant 8 : [3, 8, 0, 4], 42
Exploitation
Ant 9 : [8, 0, 4, 6], 40
Exploration
avg = 0.000265730895774
p = 0.000603864734299
Ant 10 : [7, 4, 6, 5], 41
Exploitation
Ant 11 : [0, 1, 8, 3], 41
Exploitation
Ant 12 : [3, 8, 1, 0], 41
Exploitation
Ant 0 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000277412888724
p = 0.000289565217391
p = 0.000483086956517
p = 0.00027950310559
Ant 13 : [1, 8, 0, 5], 57
Exploitation
Ant 14 : [6, 5, 4, 7], 43
Exploitation
Ant 15 : [3, 8, 0, 1], 32
Exploitation
Ant 16 : [7, 4, 6, 5], 41
Exploitation
Ant 17 : [5, 6, 4, 7], 41
Exploration
avg = 0.000326444376779
p = 0.000536763285024
p = 0.000482608652174
Ant 2 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 18 : [3, 8, 0, 1], 32
Exploitation
Ant 19 : [5, 4, 7, 2], 45
Exploration
avg = 0.000341511625614
p = 0.00037806805293
p = 0.000438735177866
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000326541100364
p = 0.000536768599034
p = 0.000483086956087
Ant 4 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000289418897254
p = 0.000355731225296
p = 0.000483091786957

Ant 5 : [5, 4, 7, 2, 3], 63
Exploitation
Ant 6 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000505706197079
p = 0.000805152979058
Ant 1 : [6, 5, 4, 7, 3, 8], 75
Exploration
avg = 0.000326542056972
p = 0.000536768599034
p = 0.000483091739126
Ant 7 : [5, 6, 4, 7, 3], 61
Exploration
avg = 0.000566319817043
p = 0.000724637608696
p = 0.00096618357487
p = 0.000644122383253
Ant 8 : [3, 8, 0, 4, 7], 57
Exploration
avg = 0.000292447851418
p = 0.0006038647343
Ant 9 : [8, 0, 4, 6, 5], 56
Exploitation
Ant 10 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 11 : [0, 1, 8, 3, 4], 56
Exploration
avg = 0.000295385949338
p = 0.000483086956517
p = 0.000344409937888
Ant 12 : [3, 8, 1, 0, 5], 69
Exploration
avg = 0.000555024284031
p = 0.00096618357487
Ant 0 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000492681637229
p = 0.000805152979066
p = 0.000603858695652
Ant 13 : [1, 8, 0, 5, 6], 73
Exploration
avg = 0.000326542066538
p = 0.000536768599034
p = 0.000483091786956
Ant 14 : [6, 5, 4, 7, 3], 63
Exploration
avg = 0.000267507733395
p = 0.000395256916996
p = 0.000334444816054
Ant 15 : [3, 8, 0, 1, 5], 58
Exploration
avg = 0.000341599451701
p = 0.00037806805293
p = 0.0004391743083

Ant 16 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 17 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 2 : [6, 5, 4, 7, 3, 8], 75
Exploration
avg = 0.000274866255134
p = 0.000395256916996
p = 0.000371237424749
Ant 18 : [3, 8, 0, 1, 5], 58
Exploration
avg = 0.000300153196868
p = 0.000355731225296
p = 0.000536763285024
Ant 19 : [5, 4, 7, 2, 3], 63
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000505706197081
p = 0.000805152979066
Ant 4 : [6, 5, 4, 7, 3, 8], 75
Exploitation
Ant 5 : [5, 4, 7, 2, 3, 8], 75
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8], 73
Exploitation
Ant 1 : [6, 5, 4, 7, 3, 8, 0], 85
Exploitation
Ant 7 : [5, 6, 4, 7, 3, 8], 73
Exploitation
Ant 8 : [3, 8, 0, 4, 7, 2], 75
Exploration
avg = 0.000338849974847
p = 0.00037806805293
p = 0.000439174351779
Ant 9 : [8, 0, 4, 6, 5, 3], 78
Exploitation
Ant 10 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000658986727825
p = 0.000724637608696
p = 0.00096618357487
Ant 11 : [0, 1, 8, 3, 4, 6], 66
Exploitation
Ant 12 : [3, 8, 1, 0, 5, 4], 81
Exploitation
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 13 : [1, 8, 0, 5, 6, 4], 83
Exploitation
Ant 14 : [6, 5, 4, 7, 3, 8], 75
Exploration
avg = 0.000506059964027
p = 0.000805152979066

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p = 0.000603864673913
Ant 15 : [3, 8, 0, 1, 5, 6], 74
Exploration
avg = 0.000505706197081
p = 0.000805152979066
Ant 16 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 17 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000555024284034
p = 0.000966183574879
Ant 2 : [6, 5, 4, 7, 3, 8, 0], 85
Exploration
avg = 0.000506059978972
p = 0.000805152979066
p = 0.000603864733696
Ant 18 : [3, 8, 0, 1, 5, 6], 74
Exploration
avg = 0.000431637874099
p = 0.000482608695652
p = 0.000805152979066
Ant 19 : [5, 4, 7, 2, 3, 8], 75
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000555024284034
p = 0.000966183574879
Ant 4 : [6, 5, 4, 7, 3, 8, 0], 85
Exploitation
Ant 5 : [5, 4, 7, 2, 3, 8, 0], 85
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8, 0], 83
Exploitation
Ant 1 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploitation
Ant 7 : [5, 6, 4, 7, 3, 8, 0], 83
Exploitation
Ant 8 : [3, 8, 0, 4, 7, 2, 5], 98
Exploitation
Ant 9 : [8, 0, 4, 6, 5, 3, 1], 96
Exploration
avg = 0.000555024284034
p = 0.000966183574879
Ant 10 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 11 : [0, 1, 8, 3, 4, 6, 5], 82
Exploitation
Ant 12 : [3, 8, 1, 0, 5, 4, 6], 91
Exploration
avg = 0.000395256916996
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000488954952723
```

p = 0.000521739130435
p = 0.000644122383253
Ant 13 : [1, 8, 0, 5, 6, 4, 7], 98
Exploration
avg = 0.000555024284034
p = 0.000966183574879
Ant 14 : [6, 5, 4, 7, 3, 8, 0], 85
Exploitation
Ant 15 : [3, 8, 0, 1, 5, 6, 4], 84
Exploration
avg = 0.000555024284034
p = 0.000966183574879
Ant 16 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 17 : [5, 6, 4, 7, 2, 3, 8], 89
Exploration
avg = 0.00062787439613
p = 0.00096618357487
Ant 2 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploitation
Ant 18 : [3, 8, 0, 1, 5, 6, 4], 84
Exploitation
Ant 19 : [5, 4, 7, 2, 3, 8, 0], 85
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 4 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploitation
Ant 5 : [5, 4, 7, 2, 3, 8, 0, 1], 95
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1], 93
Exploration
avg = 0.000438735177866
Ant 1 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000627874396135

p = 0.000966183574879
Ant 7 : [5, 6, 4, 7, 3, 8, 0, 1], 93
Exploration
avg = 0.000452434039388
p = 0.000603864734293
Ant 8 : [3, 8, 0, 4, 7, 2, 5, 6], 114
Exploration
avg = 0.000319919428398
p = 0.000439169960474
Ant 9 : [8, 0, 4, 6, 5, 3, 1, 2], 118
Exploitation
Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 11 : [0, 1, 8, 3, 4, 6, 5, 2], 105
Exploration

avg = 0.000218511921459
p = 0.000280502103787
Ant 12 : [3, 8, 1, 0, 5, 4, 6, 7], 122
Exploration
avg = 0.00050993022007
p = 0.000536768652705
Ant 13 : [1, 8, 0, 5, 6, 4, 7, 2], 116
Exploration
avg = 0.000627874396135
p = 0.000966183574879
Ant 14 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploitation
Ant 15 : [3, 8, 0, 1, 5, 6, 4, 7], 99
Exploitation
Ant 16 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 17 : [5, 6, 4, 7, 2, 3, 8, 0], 99
Exploration
avg = 0.0004391743083
Ant 2 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000472562863867

p = 0.000644122383253
Ant 18 : [3, 8, 0, 1, 5, 6, 4, 7], 99
Exploitation
Ant 19 : [5, 4, 7, 2, 3, 8, 0, 1], 95
Exploration
avg = 0.000439174351779
Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.00021151586369

Ant 5 : [5, 4, 7, 2, 3, 8, 0, 1, 6], 132
Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000371605350836

Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1, 5], 119
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [5, 6, 4, 7, 3, 8, 0, 1, 2], 115

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 4, 7, 2, 5, 6, 1], 151

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [8, 0, 4, 6, 5, 3, 1, 2, 7], 136
Update called by 9Exploitation
Ant thread 9 terminating.Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 10Exploitation
Ant thread 10 terminating.Ant 11 : [0, 1, 8, 3, 4, 6, 5, 2, 7], 123
Update called by 11Exploitation
Ant thread 11 terminating.Ant 12 : [3, 8, 1, 0, 5, 4, 6, 7, 2], 140
Update called by 12Exploitation
Ant thread 12 terminating.Ant 13 : [1, 8, 0, 5, 6, 4, 7, 2, 3], 134
Update called by 13Exploration
Ant thread 13 terminating.avg = 0.000439174352218
Ant 14 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117
Update called by 14Exploitation
Ant thread 14 terminating.Ant 15 : [3, 8, 0, 1, 5, 6, 4, 7, 2], 117
Update called by 15Exploitation
Ant thread 15 terminating.Ant 16 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 16Exploration
Ant thread 16 terminating.avg = 0.000966183574879
Ant 17 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109
Update called by 17Exploration
Ant thread 17 terminating.avg = 0.000536768652711
Ant 18 : [3, 8, 0, 1, 5, 6, 4, 7, 2], 117
Update called by 18Exploration
Ant thread 18 terminating.avg = 0.000260634547591
Ant 19 : [5, 4, 7, 2, 3, 8, 0, 1, 6], 132
Update called by 19
Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 3, 149
Ant thread 19 terminating.iter_counter = 4

starting ant = 0
Explorationstarting ant = 1

avg = 0.00031122465048starting ant = 2
p = 0.00048309178744starting ant = 3
p = 0.000434782608691starting ant = 4
p = 0.000579710144348starting ant = 5
Ant 0 : [7, 4], 15starting ant = 6
Explorationstarting ant = 7
avg = 0.000326000659033starting ant = 8
p = 0.000869565217391starting ant = 9
p = 0.00054347826087starting ant = 10
Ant 1 : [6, 5], 16starting ant = 11
Exploitationstarting ant = 12
Ant 2 : [6, 4], 10starting ant = 13
Exploitationstarting ant = 14
Ant 3 : [7, 4], 15starting ant = 15
Exploitationstarting ant = 16
Ant 4 : [6, 4], 10starting ant = 17
Explorationstarting ant = 18
avg = 0.000382023091192starting ant = 19
p = 0.000395256916992
p = 0.000724637681159
p = 0.00054347826087
Ant 5 : [5, 6], 16
Exploration
avg = 0.0004200470574
p = 0.000469565217391
p = 0.000652173847826
p = 0.000869565217391
Ant 0 : [7, 4, 6], 25
Exploration
avg = 0.000345549572077
p = 0.000966173913043
p = 0.000603260869565
Ant 6 : [6, 5], 16
Exploitation
Ant 7 : [5, 4], 12
Exploitation

Ant 8 : [3, 8], 12
Exploitation
Ant 9 : [8, 0], 10
Exploration
avg = 0.00031927537519
p = 0.00048309178744
p = 0.000434782608691
p = 0.000644115942029
Ant 10 : [7, 4], 15
Exploitation
Ant 1 : [6, 5, 4], 28
Exploration
avg = 0.000401052651752
p = 0.000869565217391
p = 0.000434778260866
p = 0.000781826086957
Ant 11 : [0, 8], 10
Exploration
avg = 0.000425736335176
p = 0.000482604347826
p = 0.000434347826087
p = 0.000578608695652
p = 0.000804347826087
Ant 12 : [3, 8], 12
Exploitation
Ant 2 : [6, 4, 5], 22
Exploration
avg = 0.000385317276413
p = 0.000868695573913
p = 0.000395256916996
p = 0.00043477826087
p = 0.000457657208238
Ant 13 : [1, 8], 19
Exploration
avg = 0.000345624300338
p = 0.000966173913043
p = 0.000603858695652
Ant 14 : [6, 5], 16
Exploitation
Ant 3 : [7, 4, 6], 25
Exploitation
Ant 15 : [3, 8], 12
Exploration
avg = 0.000319276172292
p = 0.00048309178744
p = 0.000434782608691
p = 0.000644122318841
Ant 16 : [7, 4], 15
Exploitation
Ant 4 : [6, 4, 5], 22
Exploration
avg = 0.000399559323076
p = 0.000805144927536
p = 0.000603260869565

Ant 17 : [5, 6], 16
Exploration
avg = 0.000425836969234
p = 0.000482604347826
p = 0.000434347826087
p = 0.000578608695652
p = 0.000805152898551
Ant 18 : [3, 8], 12
Exploration
avg = 0.000399634051337
p = 0.000805144927536
p = 0.000603858695652
Ant 19 : [5, 6], 16
Exploration
avg = 0.000308733672436
p = 0.000966173913043
Ant 5 : [5, 6, 4], 26
Exploration
avg = 0.000253100348206
p = 0.000603864673913
Ant 0 : [7, 4, 6, 5], 41
Exploitation
Ant 6 : [6, 5, 4], 28
Exploration
avg = 0.000423496342079
p = 0.000469565217391
p = 0.000966173913043
p = 0.000579710144928
Ant 7 : [5, 4, 7], 27
Exploitation
Ant 8 : [3, 8, 0], 22
Exploration
avg = 0.000346656446723
p = 0.000869565217391
p = 0.000434778260866
Ant 9 : [8, 0, 4], 30
Exploration
avg = 0.000455700275826
p = 0.000469565217391
p = 0.000805137681153
p = 0.000966173913043
Ant 10 : [7, 4, 6], 25
Exploration
avg = 0.000343678099575
p = 0.000352173913043
p = 0.000469565217391
p = 0.00064347826087
Ant 1 : [6, 5, 4, 7], 43
Exploitation
Ant 11 : [0, 8, 3], 22
Exploration
avg = 0.000345271631942
p = 0.000966173913043
p = 0.000457208196796

Ant 12 : [3, 8, 1], 31
Exploitation
Ant 2 : [6, 4, 5, 3], 44
Exploration
avg = 0.000394861963041
p = 0.000966173913043
p = 0.000804340514493
Ant 13 : [1, 8, 3], 31
Exploration
avg = 0.00037667142099
p = 0.000377693727788
p = 0.000438735177866
p = 0.000805152898551
Ant 14 : [6, 5, 4], 28
Exploitation
Ant 3 : [7, 4, 6, 5], 41
Exploitation
Ant 15 : [3, 8, 0], 22
Exploitation
Ant 16 : [7, 4, 6], 25
Exploitation
Ant 4 : [6, 4, 5, 3], 44
Exploitation
Ant 17 : [5, 6, 4], 26
Exploration
avg = 0.000352529624037
p = 0.000966183478261
p = 0.000508004576247
Ant 18 : [3, 8, 1], 31
Exploration
avg = 0.00030873505256
p = 0.000966183573913
Ant 19 : [5, 6, 4], 26
Exploitation
Ant 5 : [5, 6, 4, 7], 41
Exploration
avg = 0.000323708619162
p = 0.000377693727788
p = 0.000439169960474
Ant 0 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000343785442571
p = 0.000352173913043
p = 0.000469565217391
p = 0.000644122318841
Ant 6 : [6, 5, 4, 7], 43
Exploitation
Ant 7 : [5, 4, 7, 2], 45
Exploitation
Ant 8 : [3, 8, 0, 1], 32
Exploration
avg = 0.000555333136937
p = 0.000805137681153
p = 0.000966183573913

p = 0.000644122382609
Ant 9 : [8, 0, 4, 7], 45
Exploration
avg = 0.00025310035827
p = 0.000603864734293
Ant 10 : [7, 4, 6, 5], 41
Exploration
avg = 0.000304515888956
p = 0.000536231884058
p = 0.000434782608691
Ant 1 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 11 : [0, 8, 3, 4], 37
Exploration
avg = 0.000365017123699
p = 0.000868695573913
p = 0.000395256916996
Ant 12 : [3, 8, 1, 2], 53
Exploration
avg = 0.000468045434362
p = 0.000482604347826
p = 0.000805152978261
Ant 2 : [6, 4, 5, 3, 8], 56
Exploitation
Ant 13 : [1, 8, 3, 4], 46
Exploration
avg = 0.000343785453305
p = 0.000352173913043
p = 0.000469565217391
p = 0.000644122383246
Ant 14 : [6, 5, 4, 7], 43
Exploration
avg = 0.000323709488728
p = 0.000377693727788
p = 0.0004391743083
Ant 3 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000390478119354
p = 0.000965217391304
p = 0.000482608652174
Ant 15 : [3, 8, 0, 4], 42
Exploitation
Ant 16 : [7, 4, 6, 5], 41
Exploration
avg = 0.000468045434521
p = 0.000482604347826
p = 0.000805152979058
Ant 4 : [6, 4, 5, 3, 8], 56
Exploration
avg = 0.000343785453306
p = 0.000352173913043
p = 0.000469565217391
p = 0.000644122383253
Ant 17 : [5, 6, 4, 7], 41

Exploitation
Ant 18 : [3, 8, 1, 0], 41
Exploitation
Ant 19 : [5, 6, 4, 7], 41
Exploration
avg = 0.000314081106348
p = 0.000536231884058
p = 0.000482608695652
Ant 5 : [5, 6, 4, 7, 3], 61
Exploration
avg = 0.000487328532284
p = 0.000805152979066
Ant 0 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 6 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 7 : [5, 4, 7, 2, 3], 63
Exploration
avg = 0.00027297708583
p = 0.000438735177866
p = 0.000334448127087
Ant 8 : [3, 8, 0, 1, 5], 58
Exploration
avg = 0.000328219991914
p = 0.000536763285024
p = 0.000483086956522
Ant 9 : [8, 0, 4, 7, 3], 65
Exploitation
Ant 10 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 1 : [6, 5, 4, 7, 3, 8], 75
Exploration
avg = 0.000572486720975
p = 0.000805137681153
p = 0.000966183573913
p = 0.000644122383253
Ant 11 : [0, 8, 3, 4, 7], 52
Exploitation
Ant 12 : [3, 8, 1, 2, 7], 71
Exploitation
Ant 2 : [6, 4, 5, 3, 8, 0], 66
Exploration
avg = 0.000607704112279
p = 0.000805137681153
p = 0.000966183573913
p = 0.000644122383253
Ant 13 : [1, 8, 3, 4, 7], 61
Exploitation
Ant 14 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000572486720975
p = 0.000805137681153

p = 0.000966183573913
p = 0.000644122383253
Ant 15 : [3, 8, 0, 4, 7], 57
Exploration
avg = 0.00032370949751
p = 0.000377693727788
p = 0.000439174352213
Ant 16 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 4 : [6, 4, 5, 3, 8, 0], 66
Exploitation
Ant 17 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 18 : [3, 8, 1, 0, 4], 61
Exploration
avg = 0.000314285068667
p = 0.000536768652174
p = 0.00048309173913
Ant 19 : [5, 6, 4, 7, 3], 61
Exploration
avg = 0.000487328532284
p = 0.000805152979066
Ant 5 : [5, 6, 4, 7, 3, 8], 73
Exploration
avg = 0.000548829422538
p = 0.00096618357487
Ant 0 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000315741187056
p = 0.000320158102767
p = 0.000536231884058
Ant 6 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000420667041601
p = 0.000482604347826
p = 0.000805152979066
Ant 7 : [5, 4, 7, 2, 3, 8], 75
Exploration
avg = 0.000500037528785
p = 0.000805152978261
p = 0.000603864673913
Ant 8 : [3, 8, 0, 1, 5, 6], 74
Exploitation
Ant 9 : [8, 0, 4, 7, 3, 1], 83
Exploration
avg = 0.000500734197743
p = 0.000536227009662
p = 0.000805152979066
Ant 10 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000548829422542
p = 0.000966183574879
Ant 1 : [6, 5, 4, 7, 3, 8, 0], 85
Exploration

avg = 0.000289504592549
p = 0.000536768652174
Ant 11 : [0, 8, 3, 4, 7, 2], 70
Exploration
avg = 0.000312142978491
p = 0.000644122382609
Ant 12 : [3, 8, 1, 2, 7, 4], 86
Exploitation
Ant 2 : [6, 4, 5, 3, 8, 0, 1], 76
Exploitation
Ant 13 : [1, 8, 3, 4, 7, 2], 79
Exploitation
Ant 14 : [6, 5, 4, 7, 2, 3], 79
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 15 : [3, 8, 0, 4, 7, 2], 75
Exploration
avg = 0.000500734197743
p = 0.000536227009662
p = 0.000805152979066
Ant 16 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 4 : [6, 4, 5, 3, 8, 0, 1], 76
Exploitation
Ant 17 : [5, 6, 4, 7, 2, 3], 77
Exploitation
Ant 18 : [3, 8, 1, 0, 4, 6], 71
Exploitation
Ant 19 : [5, 6, 4, 7, 3, 8], 73
Exploration
avg = 0.000548829422542
p = 0.000966183574879
Ant 5 : [5, 6, 4, 7, 3, 8, 0], 83
Exploration
avg = 0.000613396086957
p = 0.000966183478261
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000522862988295
p = 0.000536227009662
p = 0.000805152979066
Ant 6 : [6, 5, 4, 7, 2, 3, 8], 91
Exploitation
Ant 7 : [5, 4, 7, 2, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 0, 1, 5, 6, 4], 84
Exploration
avg = 0.000348328598904
p = 0.000438735177866
p = 0.00037123745786
Ant 9 : [8, 0, 4, 7, 3, 1, 5], 109
Exploitation
Ant 10 : [7, 4, 6, 5, 3, 8, 0], 85

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Exploitation
Ant 1 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploitation
Ant 11 : [0, 8, 3, 4, 7, 2, 5], 93
Exploration
avg = 0.000707831723022
p = 0.000805137681153
p = 0.00096618357487
Ant 12 : [3, 8, 1, 2, 7, 4, 6], 96
Exploration
avg = 0.000309668592277
p = 0.000438735177866
Ant 2 : [6, 4, 5, 3, 8, 0, 1, 2], 98
Exploration
avg = 0.000265102709401
p = 0.000419655954291
Ant 13 : [1, 8, 3, 4, 7, 2, 5], 102
Exploitation
Ant 14 : [6, 5, 4, 7, 2, 3, 8], 91
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000293701081513
p = 0.000320158102767
p = 0.000420075576556
Ant 15 : [3, 8, 0, 4, 7, 2, 5], 98
Exploitation
Ant 16 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 4 : [6, 4, 5, 3, 8, 0, 1, 2], 98
Exploitation
Ant 17 : [5, 6, 4, 7, 2, 3, 8], 89
Exploration
avg = 0.000341652892733
p = 0.0006038647343
Ant 18 : [3, 8, 1, 0, 4, 6, 5], 87
Exploration
avg = 0.000548829422542
p = 0.000966183574879
Ant 19 : [5, 6, 4, 7, 3, 8, 0], 83
Exploitation
Ant 5 : [5, 6, 4, 7, 3, 8, 0, 1], 93
Exploitation
Ant 0 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 0Exploitation

Ant thread 0 terminating.Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0], 101

Exploration
avg = 0.000563131313131
p = 0.000966183574879
Ant 7 : [5, 4, 7, 2, 3, 8, 0, 1], 95
Exploration
avg = 0.000457512696643

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p = 0.000644122383253
Ant 8 : [3, 8, 0, 1, 5, 6, 4, 7], 99
Exploitation
Ant 9 : [8, 0, 4, 7, 3, 1, 5, 6], 125
Exploitation
Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 1 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117
Update called by 1Exploitation

Ant thread 1 terminating.Ant 11 : [0, 8, 3, 4, 7, 2, 5, 6], 109

Exploitation
Ant 12 : [3, 8, 1, 2, 7, 4, 6, 5], 112
Exploration
avg = 0.000536231835749
Ant 2 : [6, 4, 5, 3, 8, 0, 1, 2, 7], 116
Update called by 2Exploitation

Ant thread 2 terminating.Ant 13 : [1, 8, 3, 4, 7, 2, 5, 6], 118

Exploration
avg = 0.00073734805746
p = 0.000966183574879
Ant 14 : [6, 5, 4, 7, 2, 3, 8, 0], 101
Exploitation
Ant 3 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000437383872166

p = 0.0006038647343
Ant 15 : [3, 8, 0, 4, 7, 2, 5, 6], 114
Exploration
avg = 0.000613396135266
p = 0.000966183574879
Ant 16 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000536763284541
Ant 4 : [6, 4, 5, 3, 8, 0, 1, 2, 7], 116
Update called by 4Exploitation

Ant thread 4 terminating.Ant 17 : [5, 6, 4, 7, 2, 3, 8, 0], 99

Exploration
avg = 0.000295566231483
p = 0.000377693727788
Ant 18 : [3, 8, 1, 0, 4, 6, 5, 2], 110
Exploration
avg = 0.000613396135266
p = 0.000966183574879
Ant 19 : [5, 6, 4, 7, 3, 8, 0, 1], 93
Exploitation
Ant 5 : [5, 6, 4, 7, 3, 8, 0, 1, 2], 115

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Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000966183574879

Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [5, 4, 7, 2, 3, 8, 0, 1, 6], 132

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 1, 5, 6, 4, 7, 2], 117

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [8, 0, 4, 7, 3, 1, 5, 6, 2], 175

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000439174352218

Ant 10 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [0, 8, 3, 4, 7, 2, 5, 6, 1], 146

ExploitationUpdate called by 11

Ant 12 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140Ant thread 11 terminating.

ExploitationUpdate called by 12

Ant thread 12 terminating.

RESTART: C:\Users\teleuser\Documents\Kantor\Kuliah\Master\Semester
3\Perencanaan

Jaringan\Tugas\program\Python\tsp-atncolony\Python-Ant-Colony-TSP-Solver-master\
anttsp.py

[[0, 10, 30, 31, 20, 28, 44, 43, 10], [10, 0, 22, 18, 40, 26, 37, 39, 19], [30,
22, 0, 18, 26, 23, 50, 18, 41], [31, 18, 18, 0, 15, 22, 42, 20, 12], [20, 40,
26, 15, 0, 12, 10, 15, 47], [28, 26, 23, 22, 12, 0, 16, 33, 28], [44, 37, 50,
42, 10, 16, 0, 31, 37], [43, 39, 18, 20, 15, 33, 31, 0, 34], [10, 19, 41, 12,
47, 28, 37, 34, 0]]

9

Average = 23

Tau0 = 0.00966183574879

iter_counter = 1

starting ant = 0

Explorationstarting ant = 1

avg = 0.000545174880281starting ant = 2

p = 0.000644122383253starting ant = 3

p = 0.000805152979066starting ant = 4

p = 0.000966183574879starting ant = 5

p = 0.000644122383253starting ant = 6

Ant 0 : [4, 7], 15starting ant = 7

Explorationstarting ant = 8

avg = 0.000498349329579starting ant = 9

p = 0.000536768652711starting ant = 10

p = 0.000536768652711starting ant = 11

p = 0.000644122383253starting ant = 12

p = 0.000805152979066starting ant = 13

Ant 1 : [3, 8], 12starting ant = 14

Explorationstarting ant = 15

avg = 0.000378130339785starting ant = 16

p = 0.000536768652711starting ant = 17

p = 0.00048309178744starting ant = 18

p = 0.000644122383253starting ant = 19

Ant 2 : [7, 4], 15

Exploration

avg = 0.000545174880281

p = 0.000644122383253

p = 0.000805152979066

p = 0.000966183574879

p = 0.000644122383253

Ant 3 : [4, 7], 15

Exploitation

Ant 4 : [2, 3], 18

Exploitation

Ant 5 : [7, 4], 15

Exploration

avg = 0.000380856177665

p = 0.000966183574879

p = 0.0006038647343

Ant 6 : [6, 5], 16

Exploration

avg = 0.000340131476432

p = 0.000536768652711

p = 0.00048309178744

Ant 0 : [4, 7, 3], 35

Exploitation

Ant 7 : [7, 4], 15
Exploitation
Ant 8 : [3, 8], 12
Exploration
avg = 0.000378130339785
p = 0.000536768652711
p = 0.00048309178744
p = 0.000644122383253
Ant 9 : [7, 4], 15
Exploration
avg = 0.000381919122141
p = 0.000439174352218
p = 0.000536768652711
p = 0.000420079815165
p = 0.000536768652711
Ant 10 : [2, 7], 18
Exploration
avg = 0.000498349329579
p = 0.000536768652711
p = 0.000536768652711
p = 0.000644122383253
p = 0.000805152979066
Ant 11 : [3, 8], 12
Exploration
avg = 0.000446583660733
p = 0.000966183574879
p = 0.000536768652711
p = 0.000508517670989
Ant 12 : [1, 8], 19
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.000400899235392
p = 0.000966183574879
p = 0.000508517670989
Ant 1 : [3, 8, 1], 31
Exploration
avg = 0.0004528493718
p = 0.000805152979066
p = 0.0006038647343
Ant 14 : [5, 6], 16
Exploration
avg = 0.0004528493718
p = 0.000805152979066
p = 0.0006038647343
Ant 15 : [5, 6], 16
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [8, 0], 10
Exploration
avg = 0.000378130339785
p = 0.000536768652711
p = 0.00048309178744

p = 0.000644122383253
Ant 18 : [7, 4], 15
Exploration
avg = 0.000446583660733
p = 0.000966183574879
p = 0.000536768652711
p = 0.000508517670989
Ant 19 : [1, 8], 19
Exploration
avg = 0.000531039522714
p = 0.000644122383253
p = 0.000805152979066
p = 0.000966183574879
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000340131476432
p = 0.000536768652711
p = 0.00048309178744
Ant 3 : [4, 7, 3], 35
Exploration
avg = 0.000492860854846
p = 0.000536768652711
p = 0.000644122383253
p = 0.000805152979066
Ant 4 : [2, 3, 8], 30
Exploitation
Ant 5 : [7, 4, 6], 25
Exploitation
Ant 6 : [6, 5, 4], 28
Exploration
avg = 0.000476596744323
p = 0.000536768652711
p = 0.000536768652711
p = 0.000805152979066
Ant 0 : [4, 7, 3, 8], 47
Exploration
avg = 0.000531039522714
p = 0.000644122383253
p = 0.000805152979066
p = 0.000966183574879
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploration
avg = 0.000531039522714
p = 0.000644122383253
p = 0.000805152979066
p = 0.000966183574879
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [2, 7, 4], 33
Exploitation
Ant 11 : [3, 8, 0], 22
Exploitation

Ant 12 : [1, 8, 0], 29
Exploitation
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 1 : [3, 8, 1, 0], 41
Exploitation
Ant 14 : [5, 6, 4], 26
Exploration
avg = 0.000348997812432
p = 0.000966183574879
Ant 15 : [5, 6, 4], 26
Exploitation
Ant 16 : [1, 0, 8], 20
Exploration
avg = 0.000410336466866
p = 0.000966183574879
p = 0.00048309178744
Ant 17 : [8, 0, 4], 30
Exploration
avg = 0.000531039522714
p = 0.000644122383253
p = 0.000805152979066
p = 0.000966183574879
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [1, 8, 0], 29
Exploitation
Ant 2 : [7, 4, 6, 5], 41
Exploitation
Ant 3 : [4, 7, 3, 8], 47
Exploration
avg = 0.000428440019548
p = 0.000966183574879
p = 0.000508517670989
Ant 4 : [2, 3, 8, 1], 49
Exploitation
Ant 5 : [7, 4, 6, 5], 41
Exploration
avg = 0.000431677081384
p = 0.00048309178744
p = 0.000644122383253
p = 0.000644122383253
Ant 6 : [6, 5, 4, 7], 43
Exploitation
Ant 0 : [4, 7, 3, 8, 0], 57
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploration
avg = 0.000426780524522
p = 0.000966183574879
p = 0.00048309178744
Ant 8 : [3, 8, 0, 4], 42
Exploitation
Ant 9 : [7, 4, 6, 5], 41

Exploitation
Ant 10 : [2, 7, 4, 6], 43
Exploration
avg = 0.000426780524522
p = 0.000966183574879
p = 0.00048309178744
Ant 11 : [3, 8, 0, 4], 42
Exploitation
Ant 12 : [1, 8, 0, 4], 49
Exploration
avg = 0.000368962876839
p = 0.000371609067261
p = 0.000420079815165
p = 0.000439174352218
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000318899914451
p = 0.000322061191626
p = 0.00048309178744
p = 0.000345065562457
Ant 1 : [3, 8, 1, 0, 5], 69
Exploration
avg = 0.000431677081384
p = 0.00048309178744
p = 0.000644122383253
p = 0.000644122383253
Ant 14 : [5, 6, 4, 7], 41
Exploration
avg = 0.000431677081384
p = 0.00048309178744
p = 0.000644122383253
p = 0.000644122383253
Ant 15 : [5, 6, 4, 7], 41
Exploitation
Ant 16 : [1, 0, 8, 3], 32
Exploitation
Ant 17 : [8, 0, 4, 6], 40
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000317695282197
p = 0.000322061191626
p = 0.00048309178744
p = 0.000345065562457
Ant 19 : [1, 8, 0, 5], 57
Exploration
avg = 0.000384198871912
p = 0.000420079815165
p = 0.000439174352218
Ant 2 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000463310406939
p = 0.000966183574879
p = 0.000508517670989

Ant 3 : [4, 7, 3, 8, 1], 66
Exploitation
Ant 4 : [2, 3, 8, 1, 0], 59
Exploration
avg = 0.000384198871912
p = 0.000420079815165
p = 0.000439174352218
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 6 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 0 : [4, 7, 3, 8, 0, 1], 67
Exploration
avg = 0.000384198871912
p = 0.000420079815165
p = 0.000439174352218
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 8 : [3, 8, 0, 4, 6], 52
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000605722779636
p = 0.000805152979066
p = 0.000966183574879
p = 0.000644122383253
Ant 11 : [3, 8, 0, 4, 7], 57
Exploration
avg = 0.000686238077542
p = 0.000805152979066
p = 0.000966183574879
Ant 12 : [1, 8, 0, 4, 6], 59
Exploitation
Ant 13 : [4, 6, 5, 3, 8], 60
Exploration
avg = 0.000530470107502
p = 0.000805152979066
p = 0.0006038647343
Ant 1 : [3, 8, 1, 0, 5, 6], 85
Exploitation
Ant 14 : [5, 6, 4, 7, 2], 59
Exploitation
Ant 15 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.000466640176785
p = 0.000536768652711
p = 0.000644122383253
p = 0.00048309178744
Ant 16 : [1, 0, 8, 3, 7], 52
Exploration
avg = 0.000319989594884
p = 0.0006038647343

Ant 17 : [8, 0, 4, 6, 5], 56
Exploration
avg = 0.000384198871912
p = 0.000420079815165
p = 0.000439174352218
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 19 : [1, 8, 0, 5, 4], 69
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000509524422568
p = 0.000966183574879
Ant 3 : [4, 7, 3, 8, 1, 0], 76
Exploration
avg = 0.000318109595157
p = 0.00048309178744
p = 0.000345065562457
Ant 4 : [2, 3, 8, 1, 0, 5], 87
Exploration
avg = 0.000547590601354
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 6 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000357304705131
p = 0.000439174352218
p = 0.000371609067261
Ant 0 : [4, 7, 3, 8, 0, 1, 5], 93
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 8 : [3, 8, 0, 4, 6, 5], 68
Exploration
avg = 0.000547590601354
p = 0.000805152979066
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 11 : [3, 8, 0, 4, 7, 2], 75
Exploration
avg = 0.000334704319627
p = 0.0006038647343
Ant 12 : [1, 8, 0, 4, 6, 5], 75
Exploration
avg = 0.000498631853999
p = 0.000966183574879
p = 0.000508517670989
Ant 13 : [4, 6, 5, 3, 8, 1], 79
Exploration
avg = 0.000490364136928
p = 0.000966183574879

Ant 1 : [3, 8, 1, 0, 5, 6, 4], 95
Exploitation
Ant 14 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000383414681753
p = 0.000439174352218
p = 0.000536768652711
Ant 15 : [5, 6, 4, 7, 2, 3], 77
Exploitation
Ant 16 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 17 : [8, 0, 4, 6, 5, 3], 78
Exploration
avg = 0.000547590601354
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000656509352162
p = 0.000966183574879
Ant 19 : [1, 8, 0, 5, 4, 6], 79
Exploration
avg = 0.000570118592109
p = 0.000966183574879
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000295571310064
p = 0.000322061191626
p = 0.000345065562457
Ant 3 : [4, 7, 3, 8, 1, 0, 5], 104
Exploration
avg = 0.000567266871615
p = 0.000805152979066
p = 0.0006038647343
Ant 4 : [2, 3, 8, 1, 0, 5, 6], 103
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000551197917568
p = 0.000805152979066
Ant 6 : [6, 5, 4, 7, 2, 3, 8], 91
Exploitation
Ant 0 : [4, 7, 3, 8, 0, 1, 5, 6], 109
Exploration
avg = 0.000570118592109
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 0, 4, 6, 5, 2], 91
Exploration
avg = 0.000570118592109
p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93

Exploration
avg = 0.00035083029412
p = 0.000439174352218
p = 0.000420079815165
Ant 11 : [3, 8, 0, 4, 7, 2, 5], 98
Exploitation
Ant 12 : [1, 8, 0, 4, 6, 5, 3], 97
Exploration
avg = 0.00055103243509
p = 0.000966183574879
Ant 13 : [4, 6, 5, 3, 8, 1, 0], 89
Exploitation
Ant 1 : [3, 8, 1, 0, 5, 6, 4, 7], 110
Exploitation
Ant 14 : [5, 6, 4, 7, 2, 3, 8], 89
Exploration
avg = 0.000551197917568
p = 0.000805152979066
Ant 15 : [5, 6, 4, 7, 2, 3, 8], 89
Exploration
avg = 0.000714315207069
p = 0.000805152979066
p = 0.000966183574879
Ant 16 : [1, 0, 8, 3, 7, 4, 6], 77
Exploitation
Ant 17 : [8, 0, 4, 6, 5, 3, 1], 96
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000244984181403
p = 0.000311672120929
Ant 19 : [1, 8, 0, 5, 4, 6, 7], 110
Exploration
avg = 0.000644122383253
p = 0.000966183574879
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000511972274732
p = 0.0006038647343
Ant 3 : [4, 7, 3, 8, 1, 0, 5, 6], 120
Exploration
avg = 0.000638927847904
p = 0.000966183574879
Ant 4 : [2, 3, 8, 1, 0, 5, 6, 4], 113
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000737350622934
p = 0.000966183574879
Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0], 101
Exploration
avg = 0.000193236714976
Ant 0 : [4, 7, 3, 8, 0, 1, 5, 6, 2], 159
Update called by 0Exploitation

Ant thread 0 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration

avg = 0.000487971502464

p = 0.000536768652711

Ant 8 : [3, 8, 0, 4, 6, 5, 2, 7], 109

Exploration

avg = 0.000644122383253

p = 0.000966183574879

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration

avg = 0.000737350622934

p = 0.000966183574879

Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103

Exploitation

Ant 11 : [3, 8, 0, 4, 7, 2, 5, 6], 114

Exploration

avg = 0.000509930220075

p = 0.000536768652711

Ant 12 : [1, 8, 0, 4, 6, 5, 3, 2], 115

Exploration

avg = 0.000273377523125

p = 0.000322061191626

Ant 13 : [4, 6, 5, 3, 8, 1, 0, 2], 119

Exploration

avg = 0.000536768652711

Ant 1 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000737350622934

p = 0.000966183574879

Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0], 99

Exploitation

Ant 15 : [5, 6, 4, 7, 2, 3, 8, 0], 99

Exploration

avg = 0.000398550724638

p = 0.0006038647343

Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5], 93

Exploration

avg = 0.000343456865196

p = 0.000439174352218

Ant 17 : [8, 0, 4, 6, 5, 3, 1, 2], 118

Exploration

avg = 0.000644122383253

p = 0.000966183574879

Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration

avg = 0.000509930220075

p = 0.000536768652711

Ant 19 : [1, 8, 0, 5, 4, 6, 7, 2], 128

Exploration

avg = 0.000439174352218

Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000193236714976

Ant 3 : [4, 7, 3, 8, 1, 0, 5, 6, 2], 170
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000644122383253

Ant 4 : [2, 3, 8, 1, 0, 5, 6, 4, 7], 128
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000439174352218

Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000439174352218

Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 4, 6, 5, 2, 7, 1], 148

ExplorationUpdate called by 8

avg = 0.000439174352218Ant thread 8 terminating.

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000261130695913

Ant 11 : [3, 8, 0, 4, 7, 2, 5, 6, 1], 151
ExploitationUpdate called by 11

Ant 12 : [1, 8, 0, 4, 6, 5, 3, 2, 7], 133Ant thread 11 terminating.

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [4, 6, 5, 3, 8, 1, 0, 2, 7], 137

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000536768652711

Ant 17 : [8, 0, 4, 6, 5, 3, 1, 2, 7], 136

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 8, 0, 5, 4, 6, 7, 2, 3], 146

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 1, 151

Ant thread 19 terminating.iter_counter = 2

starting ant = 0

Explorationstarting ant = 1

avg = 0.000490657392253starting ant = 2

p = 0.000579710144928starting ant = 3

p = 0.000724637681159starting ant = 4

p = 0.000869565217391starting ant = 5

p = 0.000579710144928starting ant = 6

Ant 0 : [4, 7], 15starting ant = 7

Exploitationstarting ant = 8

Ant 1 : [3, 8], 12starting ant = 9

Explorationstarting ant = 10

avg = 0.000340317305806starting ant = 11

p = 0.00048309178744starting ant = 12

p = 0.000434782608696starting ant = 13

p = 0.000579710144928starting ant = 14

Ant 2 : [7, 4], 15starting ant = 15

Exploitationstarting ant = 16

Ant 3 : [4, 6], 10starting ant = 17

Explorationstarting ant = 18

avg = 0.000343727209927starting ant = 19

p = 0.000395256916996

p = 0.00048309178744

p = 0.000378071833648

p = 0.00048309178744

Ant 4 : [2, 7], 18

Exploitation

Ant 5 : [7, 4], 15

Exploration

avg = 0.000342770559899

p = 0.000869565217391

p = 0.00054347826087

Ant 6 : [6, 5], 16

Exploitation

Ant 0 : [4, 7, 2], 33

Exploration

avg = 0.000355010542521

p = 0.000536231884058

p = 0.000434782608696

p = 0.000644115942029

Ant 7 : [7, 4], 15

Exploitation

Ant 8 : [3, 8], 12

Exploration

avg = 0.000360809311853

p = 0.000869565217391

p = 0.00045766590389

Ant 1 : [3, 8, 1], 31

Exploitation

Ant 9 : [7, 4], 15

Exploration

avg = 0.000350369722004

p = 0.000395256916996

p = 0.00048309178744

p = 0.000378071833648

p = 0.000536231884058

Ant 10 : [2, 7], 18

Exploration

avg = 0.000458577802418

p = 0.00048309178744

p = 0.00048309178744

p = 0.000579710144928

p = 0.000805144927536

Ant 11 : [3, 8], 12

Exploitation
Ant 12 : [1, 0], 10
Exploration
avg = 0.000510584928485
p = 0.000579710144928
p = 0.000724637681159
p = 0.000965217391304
p = 0.00064347826087
Ant 13 : [4, 7], 15
Exploitation
Ant 14 : [5, 4], 12
Exploitation
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000417528202736
p = 0.000804347826087
p = 0.00054347826087
Ant 15 : [5, 6], 16
Exploration
avg = 0.000413881816399
p = 0.000965217391304
p = 0.00048309178744
p = 0.00045766590389
Ant 16 : [1, 8], 19
Exploration
avg = 0.000276054552928
p = 0.000603260869565
p = 0.000280504908836
Ant 3 : [4, 6, 7], 41
Exploration
avg = 0.000412580764195
p = 0.000869565217391
p = 0.000508009153318
p = 0.000724637681159
Ant 17 : [8, 3], 12
Exploration
avg = 0.000355011347594
p = 0.000536231884058
p = 0.000434782608696
p = 0.000644122382609
Ant 18 : [7, 4], 15
Exploitation
Ant 19 : [1, 0], 10
Exploitation
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000491736812679
p = 0.000579710144928
p = 0.000724637681159
p = 0.000966173913043
Ant 5 : [7, 4, 6], 25
Exploitation
Ant 6 : [6, 5, 4], 28
Exploration

avg = 0.000322046288573
p = 0.000395256916996
p = 0.00048309178744
p = 0.000378071833648
Ant 0 : [4, 7, 2, 5], 56
Exploration
avg = 0.000491738179138
p = 0.000579710144928
p = 0.000724637681159
p = 0.000966183478261
Ant 7 : [7, 4, 6], 25
Exploration
avg = 0.000368001204628
p = 0.000869565217391
p = 0.000508009153318
Ant 8 : [3, 8, 1], 31
Exploration
avg = 0.0003952088936
p = 0.000966173913043
p = 0.000395256916996
Ant 1 : [3, 8, 1, 2], 53
Exploration
avg = 0.000491738192803
p = 0.000579710144928
p = 0.000724637681159
p = 0.000966183573913
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [2, 7, 4], 33
Exploitation
Ant 11 : [3, 8, 0], 22
Exploration
avg = 0.00036930282018
p = 0.000434782608696
p = 0.000869565217391
Ant 12 : [1, 0, 8], 20
Exploitation
Ant 13 : [4, 7, 2], 33
Exploitation
Ant 14 : [5, 4, 6], 22
Exploration
avg = 0.000275312826943
p = 0.000603260869565
Ant 2 : [7, 4, 6, 5], 41
Exploitation
Ant 15 : [5, 6, 4], 26
Exploration
avg = 0.000423999897012
p = 0.000965217391304
p = 0.000804347826087
Ant 16 : [1, 8, 3], 31
Exploitation
Ant 3 : [4, 6, 7, 2], 59
Exploration

avg = 0.000409068213115
p = 0.00048309178744
p = 0.00048309178744
p = 0.000579710144928
p = 0.000434782608696
Ant 17 : [8, 3, 7], 32
Exploration
avg = 0.000491738192941
p = 0.000579710144928
p = 0.000724637681159
p = 0.000966183574879
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [1, 0, 8], 20
Exploration
avg = 0.000517953198342
p = 0.000579710144928
p = 0.000724637681159
p = 0.000966183574879
Ant 4 : [2, 7, 4, 6], 43
Exploration
avg = 0.000275412464624
p = 0.000603858695652
Ant 5 : [7, 4, 6, 5], 41
Exploration
avg = 0.000399243672763
p = 0.000434782608696
p = 0.000579710144928
p = 0.000644115942029
Ant 6 : [6, 5, 4, 7], 43
Exploration
avg = 0.000390816791904
p = 0.000395256916996
p = 0.000603260869565
Ant 0 : [4, 7, 2, 5, 6], 72
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 1, 0], 41
Exploitation
Ant 1 : [3, 8, 1, 2, 7], 71
Exploration
avg = 0.000275413470965
p = 0.000603864733696
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [2, 7, 4, 6], 43
Exploitation
Ant 11 : [3, 8, 0, 1], 32
Exploration
avg = 0.000333929831538
p = 0.000805144927536
Ant 12 : [1, 0, 8, 3], 32
Exploration

avg = 0.000328977605523
p = 0.000395256916996
p = 0.00048309178744
p = 0.00041965973535
Ant 13 : [4, 7, 2, 5], 56
Exploration
avg = 0.000226662756817
p = 0.000235017626322
p = 0.000311360448808
p = 0.000235017626322
Ant 14 : [5, 4, 6, 8], 59
Exploitation
Ant 2 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000399244735565
p = 0.000434782608696
p = 0.000579710144928
p = 0.000644122318841
Ant 15 : [5, 6, 4, 7], 41
Exploitation
Ant 16 : [1, 8, 3, 4], 46
Exploitation
Ant 3 : [4, 6, 7, 2, 3], 77
Exploration
avg = 0.000358348401995
p = 0.000536768599034
p = 0.000644122383253
Ant 17 : [8, 3, 7, 4], 47
Exploration
avg = 0.000279722127547
p = 0.000603864734293
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.00033393116004
p = 0.000805152898551
Ant 19 : [1, 0, 8, 3], 32
Exploitation
Ant 4 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 5 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.00033049911859
p = 0.000536768599034
p = 0.000434782608696
Ant 6 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 0 : [4, 7, 2, 5, 6, 8], 109
Exploitation
Ant 7 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000287009923006
p = 0.000289855072464
p = 0.000434782608696
p = 0.000310559006211

Ant 8 : [3, 8, 1, 0, 5], 69
Exploration
avg = 0.000347589093145
p = 0.000644122383253
Ant 1 : [3, 8, 1, 2, 7, 4], 86
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 11 : [3, 8, 0, 1, 2], 54
Exploration
avg = 0.000442294999686
p = 0.00048309178744
p = 0.00064347826087
p = 0.000482608695652
Ant 12 : [1, 0, 8, 3, 7], 52
Exploration
avg = 0.000399719844078
p = 0.000439174351779
p = 0.000603858695652
Ant 13 : [4, 7, 2, 5, 6], 72
Exploration
avg = 0.000549345301699
p = 0.000965217391304
p = 0.000805152978261
Ant 14 : [5, 4, 6, 8, 3], 71
Exploration
avg = 0.000512960345566
p = 0.000805152898551
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000340064335981
p = 0.000536768599034
p = 0.000482608695652
Ant 15 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 16 : [1, 8, 3, 4, 6], 56
Exploitation
Ant 3 : [4, 6, 7, 2, 3, 8], 89
Exploitation
Ant 17 : [8, 3, 7, 4, 6], 57
Exploration
avg = 0.000354562471677
p = 0.000378071833648
p = 0.000439174351779
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.00044239065186
p = 0.00048309178744
p = 0.00064347826087
p = 0.000483086956522
Ant 19 : [1, 0, 8, 3, 7], 52
Exploitation

Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 6 : [6, 5, 4, 7, 3, 8], 75
Exploitation
Ant 0 : [4, 7, 2, 5, 6, 8, 0], 119
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000512646511607
p = 0.000805144927536
p = 0.000603864673913
Ant 8 : [3, 8, 1, 0, 5, 6], 85
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6], 96
Exploration
avg = 0.000512960365695
p = 0.000805152979066
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 11 : [3, 8, 0, 1, 2, 7], 72
Exploitation
Ant 12 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 13 : [4, 7, 2, 5, 6, 8], 109
Exploitation
Ant 14 : [5, 4, 6, 8, 3, 1], 89
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 15 : [5, 6, 4, 7, 3, 8], 73
Exploration
avg = 0.000321691671271
p = 0.0006038647343
Ant 16 : [1, 8, 3, 4, 6, 5], 72
Exploitation
Ant 3 : [4, 6, 7, 2, 3, 8, 0], 99
Exploitation
Ant 17 : [8, 3, 7, 4, 6, 5], 73
Exploration
avg = 0.00052624538985
p = 0.000536231884058
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 19 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration

avg = 0.000562261746031
p = 0.00096618357487
Ant 6 : [6, 5, 4, 7, 3, 8, 0], 85
Exploration
avg = 0.00062286115007
p = 0.000965217391304
Ant 0 : [4, 7, 2, 5, 6, 8, 0, 1], 129
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000483496961197
p = 0.000965217391304
Ant 8 : [3, 8, 1, 0, 5, 6, 4], 95
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5], 112
Exploration
avg = 0.000562261746035
p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000540629923987
p = 0.000805152979066
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 11 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000675089805525
p = 0.000724637681159
p = 0.000966183574879
Ant 12 : [1, 0, 8, 3, 7, 4, 6], 77
Exploration
avg = 0.00075994971325
p = 0.000966183574879
p = 0.000805152979058
Ant 13 : [4, 7, 2, 5, 6, 8, 3], 121
Exploration
avg = 0.000542772959697
p = 0.000966183478261
Ant 14 : [5, 4, 6, 8, 3, 1, 0], 99
Exploration
avg = 0.000628014492754
p = 0.000966173913043
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000562261746035
p = 0.000966183574879
Ant 15 : [5, 6, 4, 7, 3, 8, 0], 83
Exploration
avg = 0.00031737848373
p = 0.000378071833648
Ant 16 : [1, 8, 3, 4, 6, 5, 2], 95
Exploration
avg = 0.000655451987578
p = 0.000966183478261

Ant 3 : [4, 6, 7, 2, 3, 8, 0, 1], 109
Exploitation
Ant 17 : [8, 3, 7, 4, 6, 5, 2], 96
Exploration
avg = 0.000562261746035
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000675089805525
p = 0.000724637681159
p = 0.000966183574879
Ant 19 : [1, 0, 8, 3, 7, 4, 6], 77
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000628019323667
p = 0.00096618357487
Ant 6 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploration
avg = 0.00048309178744
Ant 0 : [4, 7, 2, 5, 6, 8, 0, 1, 3], 147
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000628019323671

p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 8 : [3, 8, 1, 0, 5, 6, 4, 7], 110
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000628019323671

p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000737348080346
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploitation
Ant 11 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploration
avg = 0.000388888888889
p = 0.0006038647343
Ant 12 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 13 : [4, 7, 2, 5, 6, 8, 3, 1], 139
Exploitation
Ant 14 : [5, 4, 6, 8, 3, 1, 0, 2], 129
Exploitation

Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploitation

Ant thread 2 terminating.Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1], 93

Exploitation
Ant 16 : [1, 8, 3, 4, 6, 5, 2, 7], 113
Exploration
avg = 0.000334448160535
Ant 3 : [4, 6, 7, 2, 3, 8, 0, 1, 5], 135
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.00034255599473

p = 0.000395256916996
Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1], 118
Exploration
avg = 0.000643961352657
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000388888888889
p = 0.0006038647343
Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000439174351779

Ant 6 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117
ExploitationUpdate called by 6

Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117Ant thread 6 terminating.

Update called by 7Exploration

Ant thread 7 terminating.avg = 0.000536768599034

Ant 8 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000966183574879

Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000966183573913

Ant 13 : [4, 7, 2, 5, 6, 8, 3, 1, 0], 149

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.000536768652705

Ant 14 : [5, 4, 6, 8, 3, 1, 0, 2, 7], 147

ExplorationUpdate called by 14

avg = 0.000439174352218Ant thread 14 terminating.

Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1, 2], 115

ExploitationUpdate called by 15

Ant 16 : [1, 8, 3, 4, 6, 5, 2, 7, 0], 156Ant thread 15 terminating.

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1, 0], 128

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 2, 147

Ant thread 19 terminating.iter_counter = 3

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [4, 6], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000431367661669starting ant = 4

p = 0.000483086956522starting ant = 5

p = 0.000434782608696starting ant = 6

p = 0.000579130434783starting ant = 7

p = 0.000434782565217starting ant = 8

p = 0.000724637681159starting ant = 9

Ant 1 : [3, 8], 12starting ant = 10

Exploitationstarting ant = 11

Ant 0 : [4, 6, 5], 26starting ant = 12

Explorationstarting ant = 13

avg = 0.000327507366256starting ant = 14

p = 0.000483091786957starting ant = 15

p = 0.00043477826087starting ant = 16

p = 0.000579710144928starting ant = 17

Ant 2 : [7, 4], 15starting ant = 18

Exploitationstarting ant = 19

Ant 3 : [4, 6], 10
Exploitation

Ant 4 : [2, 7], 18
Exploitation

Ant 5 : [7, 4], 15
Exploration

avg = 0.000340037252156

p = 0.000869556521739

p = 0.000603260869565

Ant 6 : [6, 5], 16
Exploration

avg = 0.000335558090894

p = 0.000483091786957

p = 0.00043477826087

p = 0.000644115942029

Ant 7 : [7, 4], 15
Exploration

avg = 0.000441331429785

p = 0.000483086956522

p = 0.000579130434783

p = 0.000804347826087

Ant 8 : [3, 8], 12
Exploitation

Ant 9 : [7, 4], 15
Exploitation

Ant 1 : [3, 8, 0], 22
Exploitation

Ant 10 : [2, 7], 18
Exploration
avg = 0.000441431067466
p = 0.000483086956522
p = 0.000579130434783
p = 0.000805144927536
Ant 11 : [3, 8], 12
Exploitation
Ant 0 : [4, 6, 5, 3], 48
Exploitation
Ant 12 : [1, 0], 10
Exploration
avg = 0.000471783682013
p = 0.000521739130435
p = 0.000652173913043
p = 0.000966173913043
p = 0.000579710144922
Ant 13 : [4, 7], 15
Exploitation
Ant 14 : [5, 4], 12
Exploration
avg = 0.00041156775907
p = 0.000438735177866
p = 0.000804347753623
p = 0.000543478260326
Ant 15 : [5, 6], 16
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [8, 0], 10
Exploitation
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000335558895966
p = 0.000483091786957
p = 0.00043477826087
p = 0.000644122382609
Ant 18 : [7, 4], 15
Exploration
avg = 0.000405399801247
p = 0.000966173913043
p = 0.000482608695652
p = 0.000457208237986
Ant 19 : [1, 8], 19
Exploration
avg = 0.000264477045942
p = 0.000603858695652
p = 0.000280224403927
Ant 3 : [4, 6, 7], 41
Exploitation
Ant 4 : [2, 7, 4], 33
Exploitation
Ant 5 : [7, 4, 6], 25
Exploitation

Ant 6 : [6, 5, 4], 28
Exploration
avg = 0.000456366996007
p = 0.000521739130435
p = 0.000652173913043
p = 0.000966183573913
Ant 7 : [7, 4, 6], 25
Exploration
avg = 0.000357489413685
p = 0.000966173913043
p = 0.000457661327231
Ant 8 : [3, 8, 1], 31
Exploration
avg = 0.000456366996144
p = 0.000521739130435
p = 0.000652173913043
p = 0.00096618357487
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000370091810784
p = 0.000869565217391
p = 0.000391304347826
Ant 1 : [3, 8, 0, 4], 42
Exploitation
Ant 10 : [2, 7, 4], 33
Exploration
avg = 0.000364681953731
p = 0.000966173913043
p = 0.000508009107551
Ant 11 : [3, 8, 1], 31
Exploration
avg = 0.000482051889388
p = 0.000483086956522
p = 0.000805152898551
Ant 0 : [4, 6, 5, 3, 8], 60
Exploration
avg = 0.000366266593175
p = 0.000482173913043
p = 0.000869556521739
Ant 12 : [1, 0, 8], 20
Exploration
avg = 0.000291478397875
p = 0.000483091786957
p = 0.00043477826087
Ant 13 : [4, 7, 3], 35
Exploration
avg = 0.00045512476012
p = 0.000521739130435
p = 0.000966183574879
p = 0.00064347826087
Ant 14 : [5, 4, 7], 27
Exploration
avg = 0.00030688148393
p = 0.000869556521739

p = 0.000311357643759
Ant 15 : [5, 6, 7], 47
Exploitation
Ant 16 : [1, 0, 8], 20
Exploitation
Ant 17 : [8, 0, 1], 20
Exploration
avg = 0.000261852486278
p = 0.000603858695652
Ant 2 : [7, 4, 6, 5], 41
Exploitation
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [1, 8, 0], 29
Exploitation
Ant 3 : [4, 6, 7, 2], 59
Exploration
avg = 0.000482260938089
p = 0.000521739130435
p = 0.000652173913043
p = 0.000966183574879
Ant 4 : [2, 7, 4, 6], 43
Exploration
avg = 0.000261853482655
p = 0.000603864673913
Ant 5 : [7, 4, 6, 5], 41
Exploration
avg = 0.000370054571187
p = 0.000391304347826
p = 0.000521739130435
p = 0.000644115942029
Ant 6 : [6, 5, 4, 7], 43
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 1, 0], 41
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploration
avg = 0.000551827065032
p = 0.000652173913043
p = 0.000966183574879
p = 0.000644122318841
Ant 1 : [3, 8, 0, 4, 7], 57
Exploration
avg = 0.000482260938089
p = 0.000521739130435
p = 0.000652173913043
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6], 43
Exploitation
Ant 11 : [3, 8, 1, 0], 41
Exploration
avg = 0.000473938815355

p = 0.000966183478261
p = 0.000508512585355
Ant 0 : [4, 6, 5, 3, 8, 1], 79
Exploration
avg = 0.000300538056113
p = 0.000724637681159
Ant 12 : [1, 0, 8, 3], 32
Exploitation
Ant 13 : [4, 7, 3, 8], 47
Exploration
avg = 0.000317360853888
p = 0.000536231884053
p = 0.000482608652174
Ant 14 : [5, 4, 7, 3], 47
Exploitation
Ant 15 : [5, 6, 7, 4], 62
Exploitation
Ant 16 : [1, 0, 8, 3], 32
Exploitation
Ant 17 : [8, 0, 1, 3], 38
Exploration
avg = 0.000341512381683
p = 0.00037807183327
p = 0.000438735177866
Ant 2 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000282384938414
p = 0.000289565217391
p = 0.000482173913043
p = 0.000310248447205
Ant 19 : [1, 8, 0, 5], 57
Exploration
avg = 0.00034145762871
p = 0.000394861660079
p = 0.000482608695652
p = 0.00037806805293
Ant 3 : [4, 6, 7, 2, 5], 82
Exploration
avg = 0.000282919843437
p = 0.0006038647343
Ant 4 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 6 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 7 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000295264831326
p = 0.000482173913043
p = 0.000344717391304
Ant 8 : [3, 8, 1, 0, 5], 69

Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 1 : [3, 8, 0, 4, 7, 2], 75
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 11 : [3, 8, 1, 0, 4], 61
Exploitation
Ant 0 : [4, 6, 5, 3, 8, 1, 0], 89
Exploration
avg = 0.000398152447544
p = 0.000434782608696
p = 0.000579130434783
p = 0.000434782565217
Ant 12 : [1, 0, 8, 3, 7], 52
Exploitation
Ant 13 : [4, 7, 3, 8, 0], 57
Exploitation
Ant 14 : [5, 4, 7, 3, 8], 59
Exploration
avg = 0.000315242297018
p = 0.000391304347826
p = 0.000521739130435
Ant 15 : [5, 6, 7, 4, 3], 77
Exploration
avg = 0.000407717673544
p = 0.000434782608696
p = 0.000579130434783
p = 0.000482608695217
Ant 16 : [1, 0, 8, 3, 7], 52
Exploration
avg = 0.000407813325804
p = 0.000434782608696
p = 0.000579130434783
p = 0.000483086956517
Ant 17 : [8, 0, 1, 3, 7], 58
Exploration
avg = 0.000493869240559
p = 0.000805152979066
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000492561226411
p = 0.000805144926812
p = 0.00060326086956
Ant 19 : [1, 8, 0, 5, 6], 73
Exploitation
Ant 3 : [4, 6, 7, 2, 5, 3], 104
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8], 75

Exploitation
Ant 6 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000493869240559
p = 0.000805152979066
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000506057401483
p = 0.000805144926812
p = 0.000603858695652
Ant 8 : [3, 8, 1, 0, 5, 6], 85
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000323681032251
p = 0.000394861660079
p = 0.000419659697543
Ant 1 : [3, 8, 0, 4, 7, 2, 5], 98
Exploration
avg = 0.000332482312374
p = 0.000439174352218
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 11 : [3, 8, 1, 0, 4, 6], 71
Exploration
avg = 0.000235783619818
p = 0.000289565217391
Ant 0 : [4, 6, 5, 3, 8, 1, 0, 2], 119
Exploration
avg = 0.000417624887609
p = 0.000536768599034
p = 0.000644122383253
Ant 12 : [1, 0, 8, 3, 7, 4], 67
Exploration
avg = 0.000452470329145
p = 0.000965217391304
Ant 13 : [4, 7, 3, 8, 0, 1], 67
Exploitation
Ant 14 : [5, 4, 7, 3, 8, 0], 69
Exploitation
Ant 15 : [5, 6, 7, 4, 3, 8], 89
Exploration
avg = 0.000417624887609
p = 0.000536768599034
p = 0.000644122383253
Ant 16 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 17 : [8, 0, 1, 3, 7, 4], 73
Exploration
avg = 0.000555193788225
p = 0.00096618357487
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000493869240559

p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000381020660188
p = 0.000869556521739
Ant 19 : [1, 8, 0, 5, 6, 4], 83
Exploitation
Ant 3 : [4, 6, 7, 2, 5, 3, 8], 116
Exploration
avg = 0.000513564784513
p = 0.000805152979066
Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000555193788228
p = 0.000966183574879
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000513564784513
p = 0.000805152979066
Ant 6 : [6, 5, 4, 7, 2, 3, 8], 91
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 1, 0, 5, 6, 4], 95
Exploration
avg = 0.000555193788228
p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 1 : [3, 8, 0, 4, 7, 2, 5, 6], 114
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 11 : [3, 8, 1, 0, 4, 6, 5], 87
Exploration
avg = 0.000536763285024
Ant 0 : [4, 6, 5, 3, 8, 1, 0, 2, 7], 137
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000639786944135

p = 0.000652173913043
p = 0.000966183574879
Ant 12 : [1, 0, 8, 3, 7, 4, 6], 77
Exploitation
Ant 13 : [4, 7, 3, 8, 0, 1, 2], 89
Exploration
avg = 0.000488591919192
p = 0.000966173913043
Ant 14 : [5, 4, 7, 3, 8, 0, 1], 79
Exploration
avg = 0.000555193788228
p = 0.000966183574879
Ant 15 : [5, 6, 7, 4, 3, 8, 0], 99

```
Exploration
avg = 0.000639786944135
p = 0.000652173913043
p = 0.000966183574879
Ant 16 : [1, 0, 8, 3, 7, 4, 6], 77
Exploitation
Ant 17 : [8, 0, 1, 3, 7, 4, 6], 83
Exploration
avg = 0.000643959855072
p = 0.000966183478261
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000529341425938
p = 0.000642898550725
p = 0.000644122382609
Ant 19 : [1, 8, 0, 5, 6, 4, 7], 98
Exploitation
Ant 3 : [4, 6, 7, 2, 5, 3, 8, 0], 126
Exploration
avg = 0.000737350597506
p = 0.000966183574879
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000737350597506
p = 0.000966183574879
Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0], 101
Exploration
avg = 0.000643959903377
p = 0.00096618357487
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000472562863864
p = 0.000644122383246
Ant 8 : [3, 8, 1, 0, 5, 6, 4, 7], 110
Exploration
avg = 0.000643959903382
p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 1 : [3, 8, 0, 4, 7, 2, 5, 6, 1], 151
Update called by 1Exploitation

Ant thread 1 terminating.Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103

Exploration
avg = 0.000307612991734
p = 0.00037807183327
Ant 11 : [3, 8, 1, 0, 4, 6, 5, 2], 110
Exploration
avg = 0.000380193236715
```


p = 0.0006038647343
Ant 12 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploration
avg = 0.00028829867656
p = 0.000420075613989
Ant 13 : [4, 7, 3, 8, 0, 1, 2, 5], 112
Exploration
avg = 0.000325125520778
p = 0.000438735177866
Ant 14 : [5, 4, 7, 3, 8, 0, 1, 2], 101
Exploitation
Ant 15 : [5, 6, 7, 4, 3, 8, 0, 1], 109
Exploitation
Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 17 : [8, 0, 1, 3, 7, 4, 6, 5], 99
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000643959903382

p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.00050992777756
p = 0.000536768599034
Ant 19 : [1, 8, 0, 5, 6, 4, 7, 2], 116
Exploration
avg = 0.000966183574879
Ant 3 : [4, 6, 7, 2, 5, 3, 8, 0, 1], 136
Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000439174351779

Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128

ExplorationUpdate called by 8

avg = 0.000439174352213Ant thread 8 terminating.

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [3, 8, 1, 0, 4, 6, 5, 2, 7], 128

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000419659735346

Ant 12 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 12Exploitation

Ant thread 12 terminating.Ant 13 : [4, 7, 3, 8, 0, 1, 2, 5, 6], 128

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [5, 4, 7, 3, 8, 0, 1, 2, 6], 151

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000439174352218

Ant 15 : [5, 6, 7, 4, 3, 8, 0, 1, 2], 131

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000420079773157

Ant 17 : [8, 0, 1, 3, 7, 4, 6, 5, 2], 122

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000439174352218

Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 8, 0, 5, 6, 4, 7, 2, 3], 134

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 3, 146

Ant thread 19 terminating.iter_counter = 4

starting ant = 0

Explorationstarting ant = 1

avg = 0.000445483212363starting ant = 2

p = 0.000578608695652starting ant = 3

p = 0.000586956521739starting ant = 4

p = 0.000869565217391starting ant = 5

p = 0.000579710144927starting ant = 6

Ant 0 : [4, 7], 15starting ant = 7

Exploitationstarting ant = 8

Ant 1 : [3, 8], 12starting ant = 9

Explorationstarting ant = 10

avg = 0.000313476382051starting ant = 11

p = 0.000483091787435starting ant = 12

p = 0.000434778260478starting ant = 13

p = 0.000579710144928starting ant = 14

Ant 2 : [7, 4], 15starting ant = 15

Explorationstarting ant = 16

avg = 0.000453454226855starting ant = 17

p = 0.000578608695652starting ant = 18

p = 0.000586956521739starting ant = 19

p = 0.000869565217391

p = 0.00064347826087

Ant 3 : [4, 7], 15

Exploration

avg = 0.000318835796255

p = 0.000355375494071

p = 0.000483086913043

p = 0.000378071795838

p = 0.000483091786957

Ant 4 : [2, 7], 18

Exploitation

Ant 5 : [7, 4], 15

Exploitation

Ant 6 : [6, 4], 10

Exploration

avg = 0.000275442987354

p = 0.000483091787435

p = 0.000434778260478

Ant 0 : [4, 7, 3], 35
Exploration
avg = 0.00032750590565
p = 0.000483091787435
p = 0.00048260865217
p = 0.000644115942029
Ant 7 : [7, 4], 15
Exploitation
Ant 8 : [3, 8], 12
Exploration
avg = 0.000328280380783
p = 0.000869565217391
p = 0.000457665858119
Ant 1 : [3, 8, 1], 31
Exploitation
Ant 9 : [7, 4], 15
Exploration
avg = 0.000325478308392
p = 0.000355375494071
p = 0.000483086913043
p = 0.000378071795838
p = 0.000536231884053
Ant 10 : [2, 7], 18
Exploitation
Ant 11 : [3, 8], 12
Exploitation
Ant 12 : [1, 0], 10
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.000382069448498
p = 0.000395256916996
p = 0.00072463043413
p = 0.000543478260864
Ant 14 : [5, 6], 16
Exploitation
Ant 2 : [7, 4, 6], 25
Exploitation
Ant 15 : [5, 4], 12
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.000384117049375
p = 0.000869565217391
p = 0.00050800915286
p = 0.000724630434783
Ant 17 : [8, 3], 12
Exploitation
Ant 18 : [7, 4], 15
Exploitation
Ant 19 : [1, 0], 10
Exploration
avg = 0.000282275900453
p = 0.000483091787435

p = 0.00048260865217
Ant 3 : [4, 7, 3], 35
Exploitation
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000440109178518
p = 0.000578608695652
p = 0.000586956521739
p = 0.000966173913043
Ant 5 : [7, 4, 6], 25
Exploitation
Ant 6 : [6, 4, 7], 25
Exploitation
Ant 0 : [4, 7, 3, 8], 47
Exploration
avg = 0.000440110544978
p = 0.000578608695652
p = 0.000586956521739
p = 0.000966183478261
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploitation
Ant 1 : [3, 8, 1, 0], 41
Exploitation
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [2, 7, 4], 33
Exploitation
Ant 11 : [3, 8, 0], 22
Exploration
avg = 0.000350791313959
p = 0.000434774347826
p = 0.000869556520957
Ant 12 : [1, 0, 8], 20
Exploration
avg = 0.000248388250677
p = 0.00054347826087
p = 0.000280502078541
Ant 13 : [4, 6, 7], 41
Exploitation
Ant 14 : [5, 6, 4], 26
Exploitation
Ant 2 : [7, 4, 6, 5], 41
Exploitation
Ant 15 : [5, 4, 6], 22
Exploitation
Ant 16 : [1, 0, 8], 20
Exploration
avg = 0.000356735929642
p = 0.00043477826087
p = 0.000391304347826
p = 0.000521217391304
p = 0.000434782565217

Ant 17 : [8, 3, 7], 32
Exploitation
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [1, 0, 8], 20
Exploitation
Ant 3 : [4, 7, 3, 8], 47
Exploitation
Ant 4 : [2, 7, 4, 6], 43
Exploitation
Ant 5 : [7, 4, 6, 5], 41
Exploration
avg = 0.000291533438488
p = 0.000483091787435
p = 0.000483086956087
Ant 6 : [6, 4, 7, 3], 45
Exploration
avg = 0.000417578458192
p = 0.000966173913043
p = 0.00050800915286
Ant 0 : [4, 7, 3, 8, 1], 66
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 0, 1], 32
Exploitation
Ant 1 : [3, 8, 1, 0, 4], 61
Exploration
avg = 0.000253100348206
p = 0.000603864673913
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [2, 7, 4, 6], 43
Exploration
avg = 0.000395304226186
p = 0.000965217391304
p = 0.000482608613043
Ant 11 : [3, 8, 0, 4], 42
Exploration
avg = 0.000295846557265
p = 0.000804347753623
Ant 12 : [1, 0, 8, 3], 32
Exploitation
Ant 13 : [4, 6, 7, 2], 59
Exploration
avg = 0.000361959355614
p = 0.000578608695652
p = 0.000644122318841
Ant 14 : [5, 6, 4, 7], 41
Exploration
avg = 0.000315001631563
p = 0.00037807183327
p = 0.000395256916996
Ant 2 : [7, 4, 6, 5, 3], 63

Exploitation
Ant 15 : [5, 4, 6, 7], 53
Exploitation
Ant 16 : [1, 0, 8, 3], 32
Exploration
avg = 0.000330570667593
p = 0.000536231884058
p = 0.000644122383253
Ant 17 : [8, 3, 7, 4], 47
Exploration
avg = 0.00025310035817
p = 0.000603864733696
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000295980748085
p = 0.000805152898543
Ant 19 : [1, 0, 8, 3], 32
Exploitation
Ant 3 : [4, 7, 3, 8, 0], 57
Exploitation
Ant 4 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000323697283737
p = 0.00037807183327
p = 0.000438735177866
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 6 : [6, 4, 7, 3, 8], 57
Exploration
avg = 0.000463126777342
p = 0.000966183573913
Ant 0 : [4, 7, 3, 8, 1, 0], 76
Exploration
avg = 0.000323784240259
p = 0.00037807183327
p = 0.000439169960474
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 8 : [3, 8, 0, 1, 2], 54
Exploration
avg = 0.000617041372315
p = 0.000966183574879
p = 0.000644122382609
Ant 1 : [3, 8, 1, 0, 4, 7], 76
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 11 : [3, 8, 0, 4, 6], 52
Exploitation
Ant 12 : [1, 0, 8, 3, 4], 47
Exploitation
Ant 13 : [4, 6, 7, 2, 3], 77

Exploitation
Ant 14 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.00046461114098
p = 0.000805152979066
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000317887635276
p = 0.000536763285024
p = 0.000483091739126
Ant 15 : [5, 4, 6, 7, 3], 73
Exploration
avg = 0.0004009332685
p = 0.000642893333333
p = 0.000482608695217
Ant 16 : [1, 0, 8, 3, 7], 52
Exploitation
Ant 17 : [8, 3, 7, 4, 6], 57
Exploration
avg = 0.00032378511852
p = 0.00037807183327
p = 0.000439174351779
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.00040102892076
p = 0.000642893333333
p = 0.000483086956517
Ant 19 : [1, 0, 8, 3, 7], 52
Exploitation
Ant 3 : [4, 7, 3, 8, 0, 1], 67
Exploration
avg = 0.000310213439941
p = 0.000439174352213
Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.00046461114098
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000474510252951
p = 0.000966183478261
p = 0.000508512585808
Ant 6 : [6, 4, 7, 3, 8, 1], 76
Exploration
avg = 0.000253399177583
p = 0.000289562608696
p = 0.000310555872671
Ant 0 : [4, 7, 3, 8, 1, 0, 5], 104
Exploration
avg = 0.00046461114098
p = 0.000805152979066
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000339830174898

p = 0.000378071795838
p = 0.000536763285024
Ant 8 : [3, 8, 0, 1, 2, 7], 72
Exploration
avg = 0.000325803665453
p = 0.000536763285024
Ant 1 : [3, 8, 1, 0, 4, 7, 2], 94
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 11 : [3, 8, 0, 4, 6, 5], 68
Exploration
avg = 0.000617041372475
p = 0.000966183574879
p = 0.000644122383246
Ant 12 : [1, 0, 8, 3, 4, 7], 62
Exploitation
Ant 13 : [4, 6, 7, 2, 3, 8], 89
Exploitation
Ant 14 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000548831083701
p = 0.000966183478261
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.00046461114098
p = 0.000805152979066
Ant 15 : [5, 4, 6, 7, 3, 8], 85
Exploitation
Ant 16 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 17 : [8, 3, 7, 4, 6, 5], 73
Exploration
avg = 0.00046461114098
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000405384673405
p = 0.000536768599034
p = 0.000644122383253
Ant 19 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 3 : [4, 7, 3, 8, 0, 1, 2], 89
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000548831115585
p = 0.000966183573913
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 6 : [6, 4, 7, 3, 8, 1, 0], 86
Exploration

avg = 0.000490666351418
p = 0.000603260869565
Ant 0 : [4, 7, 3, 8, 1, 0, 5, 6], 120
Exploration
avg = 0.000548831115904
p = 0.00096618357487
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000275827202267
p = 0.000378071795838
Ant 1 : [3, 8, 1, 0, 4, 7, 2, 5], 117
Exploration
avg = 0.000548831115907
p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000489046738698
p = 0.000805152979066
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000287471192827
p = 0.00037807183327
Ant 11 : [3, 8, 0, 4, 6, 5, 2], 91
Exploitation
Ant 12 : [1, 0, 8, 3, 4, 7, 2], 80
Exploitation
Ant 13 : [4, 6, 7, 2, 3, 8, 0], 99
Exploitation
Ant 14 : [5, 6, 4, 7, 2, 3, 8], 89
Exploration
avg = 0.00062786826087
p = 0.000966173913043
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000548831115907
p = 0.000966183574879
Ant 15 : [5, 4, 6, 7, 3, 8, 0], 95
Exploitation
Ant 16 : [1, 0, 8, 3, 7, 4, 6], 77
Exploitation
Ant 17 : [8, 3, 7, 4, 6, 5, 2], 96
Exploration
avg = 0.000548831115907
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000608014368884
p = 0.000966183574879
Ant 19 : [1, 0, 8, 3, 7, 4, 6], 77
Exploration
avg = 0.000296621171834
p = 0.000419659734972

Ant 3 : [4, 7, 3, 8, 0, 1, 2, 5], 112

Exploration

avg = 0.000737350597508

p = 0.000966183574879

Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103

Exploitation

Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploitation

Ant 6 : [6, 4, 7, 3, 8, 1, 0, 5], 114

Exploitation

Ant 0 : [4, 7, 3, 8, 1, 0, 5, 6, 2], 170

Update called by 0Exploitation

Ant thread 0 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploitation

Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6], 97

Exploration

avg = 0.000603858695652

Ant 1 : [3, 8, 1, 0, 4, 7, 2, 5, 6], 133

Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000627873091783

p = 0.00096618357487

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration

avg = 0.000737350597508

p = 0.000966183574879

Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103

Exploitation

Ant 11 : [3, 8, 0, 4, 6, 5, 2, 7], 109

Exploration

avg = 0.000296829111529

p = 0.000420075614363

Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5], 103

Exploitation

Ant 13 : [4, 6, 7, 2, 3, 8, 0, 1], 109

Exploitation

Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0], 99

Exploitation

Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000627873091787

p = 0.000966183574879

Ant 15 : [5, 4, 6, 7, 3, 8, 0, 1], 105

Exploitation

Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5], 93

Exploration

avg = 0.000295079051383

p = 0.000355375494071

Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1], 118

Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploration
avg = 0.000603864673913
Ant 3 : [4, 7, 3, 8, 0, 1, 2, 5, 6], 128
Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000966183574879

Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 4Exploration

Ant thread 4 terminating.avg = 0.0004391743083

Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 4, 7, 3, 8, 1, 0, 5, 2], 137
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0006038647343

Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000439174352213

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000180602006689

Ant 11 : [3, 8, 0, 4, 6, 5, 2, 7, 1], 148
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000603864733696

Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5, 6], 119
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000300702341137

Ant 13 : [4, 6, 7, 2, 3, 8, 0, 1, 5], 135

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000439174352218

Ant 15 : [5, 4, 6, 7, 3, 8, 0, 1, 2], 127

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000420079773157

Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000966183574879

Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1, 0], 128

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.000420079814745

Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 4, 147

Ant thread 19 terminating.iter_counter = 5

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [4, 6], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000390632580282starting ant = 4

p = 0.000391300434783starting ant = 5

p = 0.000578604starting ant = 6

p = 0.000434782565217starting ant = 7

p = 0.000724637681159starting ant = 8

Ant 1 : [3, 8], 12starting ant = 9

Exploitationstarting ant = 10

Ant 0 : [4, 6, 5], 26starting ant = 11

Explorationstarting ant = 12

avg = 0.000308326464418starting ant = 13

p = 0.000483091786957starting ant = 14

p = 0.000434782608261starting ant = 15

p = 0.000579710144928starting ant = 16

Ant 2 : [7, 4], 15starting ant = 17

Explorationstarting ant = 18

avg = 0.000431007354895starting ant = 19

p = 0.000520747826087

p = 0.000528260869565

p = 0.000965217391304

p = 0.000579710144927

Ant 3 : [4, 7], 15

Exploration

avg = 0.000313088451034

p = 0.000394502727273

p = 0.000483086956083

p = 0.000378071795841

p = 0.000483091786957

Ant 4 : [2, 7], 18

Exploitation

Ant 5 : [7, 4], 15

Exploitation

Ant 6 : [6, 4], 10

Exploration

avg = 0.000316377189056

p = 0.000483091786957

p = 0.000434782608261

p = 0.000644115942029

Ant 7 : [7, 4], 15

Exploration

avg = 0.000400596348398

p = 0.000578604

p = 0.000434782565217

p = 0.000804347826087

Ant 8 : [3, 8], 12

Exploration

avg = 0.000314412786641

p = 0.000869565217391

p = 0.000457665858124

Ant 1 : [3, 8, 1], 31

Exploitation

Ant 9 : [7, 4], 15

Exploration

avg = 0.000319730963171

p = 0.000394502727273
p = 0.000483086956083
p = 0.000378071795841
p = 0.000536231884053
Ant 10 : [2, 7], 18
Exploitation
Ant 0 : [4, 6, 5, 3], 48
Exploitation
Ant 11 : [3, 8], 12
Exploration
avg = 0.000367100958875
p = 0.000869565217391
p = 0.000395256916996
p = 0.000434343913043
p = 0.000411483707094
Ant 12 : [1, 8], 19
Exploitation
Ant 13 : [4, 6], 10
Exploitation
Ant 14 : [5, 4], 12
Exploration
avg = 0.000384779022486
p = 0.000438735177866
p = 0.000804340579058
p = 0.000543478260864
Ant 15 : [5, 6], 16
Exploration
avg = 0.000379108911907
p = 0.000869565217391
p = 0.000395256916996
p = 0.000434343913043
p = 0.00050754733135
Ant 16 : [1, 8], 19
Exploitation
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000371983810207
p = 0.000869565217391
p = 0.00050800915286
p = 0.000724637680435
Ant 17 : [8, 3], 12
Exploration
avg = 0.000316377994129
p = 0.000483091786957
p = 0.000434782608261
p = 0.000644122382609
Ant 18 : [7, 4], 15
Exploitation
Ant 19 : [1, 0], 10
Exploration
avg = 0.000269557367203
p = 0.000483091786957
p = 0.000434782608261
Ant 3 : [4, 7, 3], 35

Exploration
avg = 0.0002993940363
p = 0.000482608695648
p = 0.000644122383246
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000409902111598
p = 0.000520747826087
p = 0.000528260869565
p = 0.000966183478261
Ant 5 : [7, 4, 6], 25
Exploitation
Ant 6 : [6, 4, 7], 25
Exploitation
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploration
avg = 0.00036443870413
p = 0.000965217391304
p = 0.000395256916996
Ant 1 : [3, 8, 1, 2], 53
Exploration
avg = 0.000409902125399
p = 0.000520747826087
p = 0.000528260869565
p = 0.00096618357487
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [2, 7, 4], 33
Exploitation
Ant 0 : [4, 6, 5, 3, 8], 60
Exploration
avg = 0.000335269282162
p = 0.000965217391304
p = 0.00050800915286
Ant 11 : [3, 8, 1], 31
Exploitation
Ant 12 : [1, 8, 0], 29
Exploitation
Ant 13 : [4, 6, 5], 26
Exploitation
Ant 14 : [5, 4, 6], 22
Exploitation
Ant 15 : [5, 6, 4], 26
Exploitation
Ant 16 : [1, 8, 0], 29
Exploitation
Ant 2 : [7, 4, 6, 5], 41
Exploitation
Ant 17 : [8, 3, 4], 27
Exploitation
Ant 18 : [7, 4, 6], 25
Exploitation

Ant 19 : [1, 0, 8], 20
Exploitation
Ant 3 : [4, 7, 3, 8], 47
Exploitation
Ant 4 : [2, 7, 4, 6], 43
Exploration
avg = 0.000245631246357
p = 0.000603864673913
Ant 5 : [7, 4, 6, 5], 41
Exploitation
Ant 6 : [6, 4, 7, 2], 43
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 0, 1], 32
Exploitation
Ant 1 : [3, 8, 1, 2, 7], 71
Exploration
avg = 0.00024563125642
p = 0.000603864734293
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 10 : [2, 7, 4, 6], 43
Exploitation
Ant 0 : [4, 6, 5, 3, 8, 0], 70
Exploitation
Ant 11 : [3, 8, 1, 0], 41
Exploitation
Ant 12 : [1, 8, 0, 4], 49
Exploitation
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000191737484627
p = 0.000211113983549
p = 0.000280502103532
Ant 14 : [5, 4, 6, 7], 53
Exploitation
Ant 15 : [5, 6, 4, 7], 41
Exploitation
Ant 16 : [1, 8, 0, 4], 49
Exploration
avg = 0.000307750652183
p = 0.000378071833645
p = 0.000439169960474
Ant 2 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 17 : [8, 3, 4, 6], 37
Exploration
avg = 0.000245631256421
p = 0.000603864734299
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000279667709509
p = 0.00080434782608

Ant 19 : [1, 0, 8, 3], 32
Exploitation
Ant 3 : [4, 7, 3, 8, 0], 57
Exploration
avg = 0.000260069159879
p = 0.0006038647343
Ant 4 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 6 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000307751530443
p = 0.000378071833645
p = 0.000439174351779
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 8 : [3, 8, 0, 1, 2], 54
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4], 86
Exploration
avg = 0.00030775153053
p = 0.000378071833645
p = 0.000439174352213
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 0 : [4, 6, 5, 3, 8, 0, 1], 80
Exploration
avg = 0.000269148397703
p = 0.000483086956087
p = 0.000310555900339
Ant 11 : [3, 8, 1, 0, 5], 69
Exploitation
Ant 12 : [1, 8, 0, 4, 6], 59
Exploitation
Ant 13 : [4, 6, 5, 3, 8], 60
Exploration
avg = 0.00031825696294
p = 0.000536231884053
p = 0.000482608695648
Ant 14 : [5, 4, 6, 7, 3], 73
Exploitation
Ant 15 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.00058062545968
p = 0.000966183574879
p = 0.000644122318841
Ant 16 : [1, 8, 0, 4, 7], 64
Exploration
avg = 0.000438278851358
p = 0.000805152979066
Ant 2 : [7, 4, 6, 5, 3, 8], 75

Exploration
avg = 0.000288770404796
p = 0.0006038647343
p = 0.000311360420755
Ant 17 : [8, 3, 4, 6, 7], 68
Exploration
avg = 0.000307751530531
p = 0.000378071833645
p = 0.000439174352218
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 19 : [1, 0, 8, 3, 4], 47
Exploration
avg = 0.000428892968238
p = 0.000966173913043
Ant 3 : [4, 7, 3, 8, 0, 1], 67
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000438278851358
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8], 73
Exploration
avg = 0.000438278851358
p = 0.000805152979066
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000328719362933
p = 0.000378071795841
p = 0.000536768599034
Ant 8 : [3, 8, 0, 1, 2, 7], 72
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6], 96
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000300855883247
p = 0.000439169960474
Ant 0 : [4, 6, 5, 3, 8, 0, 1, 2], 102
Exploration
avg = 0.000494442035982
p = 0.000804340579058
p = 0.000603260869565
Ant 11 : [3, 8, 1, 0, 5, 6], 85
Exploitation
Ant 12 : [1, 8, 0, 4, 6, 5], 75
Exploration
avg = 0.000453938527725
p = 0.00096618357487
p = 0.000508512585808

Ant 13 : [4, 6, 5, 3, 8, 1], 79
Exploration
avg = 0.000438278851358
p = 0.000805152979066
Ant 14 : [5, 4, 6, 7, 3, 8], 85
Exploration
avg = 0.000324162962069
p = 0.000394502727273
p = 0.000536231835744
Ant 15 : [5, 6, 4, 7, 2, 3], 77
Exploitation
Ant 16 : [1, 8, 0, 4, 7, 2], 82
Exploration
avg = 0.000543104710814
p = 0.00096618357487
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000278715670727
p = 0.000536768599034
Ant 17 : [8, 3, 4, 6, 7, 2], 86
Exploration
avg = 0.000438278851358
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 19 : [1, 0, 8, 3, 4, 6], 57
Exploitation
Ant 3 : [4, 7, 3, 8, 0, 1, 2], 89
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000567032903515
p = 0.000966183574879
Ant 6 : [6, 4, 7, 2, 3, 8, 0], 83
Exploration
avg = 0.000543104710817
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000346901774485
p = 0.000644122383253
Ant 8 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000373967940272
p = 0.0006038647343
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5], 112
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000536768652174

Ant 0 : [4, 6, 5, 3, 8, 0, 1, 2, 7], 120
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000483761551744

p = 0.000966173912174
Ant 11 : [3, 8, 1, 0, 5, 6, 4], 95
Exploration
avg = 0.000336447015841
p = 0.000378071833645
p = 0.000439174352218
Ant 12 : [1, 8, 0, 4, 6, 5, 3], 97
Exploration
avg = 0.000522630023614
p = 0.000966173913043
Ant 13 : [4, 6, 5, 3, 8, 1, 0], 89
Exploration
avg = 0.000543104710817
p = 0.000966183574879
Ant 14 : [5, 4, 6, 7, 3, 8, 0], 95
Exploitation
Ant 15 : [5, 6, 4, 7, 2, 3, 8], 89
Exploitation
Ant 16 : [1, 8, 0, 4, 7, 2, 3], 100
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000327959623647
p = 0.000394502727273
p = 0.000378071795841
Ant 17 : [8, 3, 4, 6, 7, 2, 5], 109
Exploration
avg = 0.000543104710817
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 19 : [1, 0, 8, 3, 4, 6, 5], 73
Exploration
avg = 0.000287942041399
p = 0.000419659734972
Ant 3 : [4, 7, 3, 8, 0, 1, 2, 5], 112
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1], 93
Exploration
avg = 0.000613394961353
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000747222222222
p = 0.000966183574879

Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6], 97

Exploration

avg = 0.000251301242236

Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140

Update called by 1Exploitation

Ant thread 1 terminating.Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration

avg = 0.000737350597508

p = 0.000966183574879

Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103

Exploitation

Ant 11 : [3, 8, 1, 0, 5, 6, 4, 7], 110

Exploitation

Ant 12 : [1, 8, 0, 4, 6, 5, 3, 7], 117

Exploitation

Ant 13 : [4, 6, 5, 3, 8, 1, 0, 2], 119

Exploitation

Ant 14 : [5, 4, 6, 7, 3, 8, 0, 1], 105

Exploitation

Ant 15 : [5, 6, 4, 7, 2, 3, 8, 0], 99

Exploitation

Ant 16 : [1, 8, 0, 4, 7, 2, 3, 5], 122

Exploration

avg = 0.000439174351779

Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 2Exploitation

Ant thread 2 terminating.Ant 17 : [8, 3, 4, 6, 7, 2, 5, 0], 137

Exploitation

Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploitation

Ant 19 : [1, 0, 8, 3, 4, 6, 5, 2], 96

Exploration

avg = 0.000603858695652

Ant 3 : [4, 7, 3, 8, 0, 1, 2, 5, 6], 128

Update called by 3Exploration

Ant thread 3 terminating.avg = 0.000966183574879

Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000439174352213

Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1, 5], 119

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000439174352218

Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 7Exploration

Ant thread 7 terminating.avg = 0.0006038647343

Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000439174352218

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000536768652174

Ant 11 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128
Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 8, 0, 4, 6, 5, 3, 7, 2], 135
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000536768652705

Ant 13 : [4, 6, 5, 3, 8, 1, 0, 2, 7], 137
Update called by 13Exploration

Ant thread 13 terminating.avg = 0.000439174352218

Ant 14 : [5, 4, 6, 7, 3, 8, 0, 1, 2], 127
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000966183574879

Ant 15 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000603864673913

Ant 16 : [1, 8, 0, 4, 7, 2, 3, 5, 6], 138
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [8, 3, 4, 6, 7, 2, 5, 0, 1], 147
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

ExplorationUpdate called by 18

avg = 0.000536768652711Ant thread 18 terminating.

Ant 19 : [1, 0, 8, 3, 4, 6, 5, 2, 7], 114

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 5, 144

Ant thread 19 terminating.iter_counter = 6

starting ant = 0

Exploitationstarting ant = 1

Ant 0 : [4, 6], 10starting ant = 2

Exploitationstarting ant = 3

Ant 1 : [3, 8], 12starting ant = 4

Exploitationstarting ant = 5

Ant 0 : [4, 6, 5], 26starting ant = 6

Explorationstarting ant = 7

avg = 0.000296213081365starting ant = 8

p = 0.00048309178744starting ant = 9

p = 0.00043477826087starting ant = 10

p = 0.000579710144928starting ant = 11

Ant 2 : [7, 4], 15starting ant = 12

Explorationstarting ant = 13

avg = 0.000407218213607starting ant = 14

p = 0.000468673043478starting ant = 15

p = 0.000475434782609starting ant = 16

p = 0.000965217391304starting ant = 17

p = 0.000579710144922starting ant = 18

Ant 3 : [4, 7], 15starting ant = 19

Exploitation

Ant 1 : [3, 8, 0], 22

Exploration

avg = 0.000298582867743

p = 0.000355052454545

p = 0.000483091739126

p = 0.000378068052927
p = 0.00048309178744
Ant 4 : [2, 7], 18
Exploration
avg = 0.000304184095858
p = 0.00048309178744
p = 0.00043477826087
p = 0.00064347826087
Ant 5 : [7, 4], 15
Exploitation
Ant 0 : [4, 6, 5, 3], 48
Exploitation
Ant 6 : [6, 4], 10
Exploration
avg = 0.000304263806003
p = 0.00048309178744
p = 0.00043477826087
p = 0.000644115942029
Ant 7 : [7, 4], 15
Exploitation
Ant 8 : [3, 8], 12
Exploration
avg = 0.000304264603104
p = 0.00048309178744
p = 0.00043477826087
p = 0.000644122318841
Ant 9 : [7, 4], 15
Exploitation
Ant 10 : [2, 7], 18
Exploitation
Ant 11 : [3, 8], 12
Exploitation
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.00036132622922
p = 0.000869565130435
p = 0.000395256916996
p = 0.000390909521739
p = 0.000457657170833
Ant 12 : [1, 8], 19
Exploration
avg = 0.000415308793318
p = 0.000468673043478
p = 0.000475434782609
p = 0.000966173913043
p = 0.00064347826087
Ant 13 : [4, 7], 15
Exploration
avg = 0.000373804858272
p = 0.000377693761815
p = 0.000438735177866
p = 0.000723906521152
p = 0.000543478260326
Ant 14 : [5, 6], 16

Exploration
avg = 0.000381277684426
p = 0.000438735177866
p = 0.000723906521152
p = 0.00060326086956
Ant 15 : [5, 6], 16
Exploration
avg = 0.000367620216115
p = 0.000869565130435
p = 0.000395256916996
p = 0.000390909521739
p = 0.000508009065988
Ant 16 : [1, 8], 19
Exploration
avg = 0.000366725784011
p = 0.000965217391304
p = 0.000457665858124
p = 0.000724630434783
Ant 17 : [8, 3], 12
Exploration
avg = 0.000304264611075
p = 0.00048309178744
p = 0.00043477826087
p = 0.000644122382609
Ant 18 : [7, 4], 15
Exploitation
Ant 3 : [4, 7, 2], 33
Exploration
avg = 0.000367683155984
p = 0.000869565130435
p = 0.000395256916996
p = 0.000390909521739
p = 0.000508512584939
Ant 19 : [1, 8], 19
Exploration
avg = 0.000361039563638
p = 0.000869565217391
p = 0.000434778260478
Ant 1 : [3, 8, 0, 4], 42
Exploration
avg = 0.000278717871685
p = 0.00043477826087
p = 0.000644122383246
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000382713155097
p = 0.000468673043478
p = 0.000475434782609
p = 0.000966173913043
Ant 5 : [7, 4, 6], 25
Exploration
avg = 0.000418533381595
p = 0.000434347825696
p = 0.000805152898551

Ant 0 : [4, 6, 5, 3, 8], 60
Exploitation
Ant 6 : [6, 4, 7], 25
Exploration
avg = 0.000382714521556
p = 0.000468673043478
p = 0.000475434782609
p = 0.000966183478261
Ant 7 : [7, 4, 6], 25
Exploration
avg = 0.000315596548186
p = 0.000965217391304
p = 0.000457665858124
Ant 8 : [3, 8, 1], 31
Exploration
avg = 0.000382714535221
p = 0.000468673043478
p = 0.000475434782609
p = 0.000966183573913
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [2, 7, 4], 33
Exploitation
Ant 11 : [3, 8, 0], 22
Exploration
avg = 0.000231031898895
p = 0.000603260869565
Ant 2 : [7, 4, 6, 5], 41
Exploration
avg = 0.00036525917922
p = 0.000966173913043
p = 0.000804347753623
Ant 12 : [1, 8, 3], 31
Exploitation
Ant 13 : [4, 7, 2], 33
Exploitation
Ant 14 : [5, 6, 4], 26
Exploitation
Ant 15 : [5, 6, 4], 26
Exploration
avg = 0.000365373061104
p = 0.000966173913043
p = 0.000805144926812
Ant 16 : [1, 8, 3], 31
Exploitation
Ant 17 : [8, 3, 4], 27
Exploration
avg = 0.000382714535357
p = 0.000468673043478
p = 0.000475434782609
p = 0.00096618357487
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 3 : [4, 7, 2, 3], 51

Exploitation
Ant 19 : [1, 8, 0], 29
Exploitation
Ant 1 : [3, 8, 0, 4, 6], 52
Exploitation
Ant 4 : [2, 7, 4, 6], 43
Exploration
avg = 0.000231131536576
p = 0.000603858695652
Ant 5 : [7, 4, 6, 5], 41
Exploration
avg = 0.00044528619658
p = 0.000966183478261
p = 0.00050800915286
Ant 0 : [4, 6, 5, 3, 8, 1], 79
Exploration
avg = 0.000276604455481
p = 0.000536763285024
p = 0.00043477826087
Ant 6 : [6, 4, 7, 3], 45
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 1, 0], 41
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploration
avg = 0.000409928384897
p = 0.000468673043478
p = 0.000475434782609
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6], 43
Exploration
avg = 0.000369011295587
p = 0.000869565217391
p = 0.00048260865217
Ant 11 : [3, 8, 0, 4], 42
Exploration
avg = 0.000310033741841
p = 0.000310550567422
p = 0.000377693761815
p = 0.000438735177866
Ant 2 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 12 : [1, 8, 3, 4], 46
Exploration
avg = 0.000289879976804
p = 0.000355052454545
p = 0.000536231883575
p = 0.000378068052927
Ant 13 : [4, 7, 2, 5], 56
Exploration
avg = 0.000313584284811
p = 0.000468673043478

p = 0.000644122318841
Ant 14 : [5, 6, 4, 7], 41
Exploration
avg = 0.000313584295439
p = 0.000468673043478
p = 0.000644122382609
Ant 15 : [5, 6, 4, 7], 41
Exploitation
Ant 16 : [1, 8, 3, 4], 46
Exploration
avg = 0.000455510580535
p = 0.000475434782609
p = 0.000966183574879
p = 0.000644122383246
Ant 17 : [8, 3, 4, 7], 42
Exploration
avg = 0.000231132543016
p = 0.000603864734293
Ant 18 : [7, 4, 6, 5], 41
Exploitation
Ant 3 : [4, 7, 2, 3, 8], 63
Exploration
avg = 0.000254836688455
p = 0.00028930197887
p = 0.000483086956087
p = 0.000310248419252
Ant 19 : [1, 8, 0, 5], 57
Exploitation
Ant 1 : [3, 8, 0, 4, 6, 5], 68
Exploration
avg = 0.000246139538577
p = 0.0006038647343
Ant 4 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000310120698363
p = 0.000310550567422
p = 0.000377693761815
p = 0.000439169960474
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 0 : [4, 6, 5, 3, 8, 1, 0], 89
Exploitation
Ant 6 : [6, 4, 7, 3, 8], 57
Exploration
avg = 0.000310121567928
p = 0.000310550567422
p = 0.000377693761815
p = 0.0004391743083
Ant 7 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000275889966364
p = 0.00028930197887
p = 0.000483086956087
p = 0.000344717391025

Ant 8 : [3, 8, 1, 0, 5], 69
Exploitation
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.00048956052273
p = 0.000966183574879
p = 0.000644122383253
Ant 11 : [3, 8, 0, 4, 7], 57
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 12 : [1, 8, 3, 4, 6], 56
Exploration
avg = 0.000355354563478
p = 0.000439174352213
p = 0.000603858695652
Ant 13 : [4, 7, 2, 5, 6], 72
Exploitation
Ant 14 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.000306915412542
p = 0.000536768599034
p = 0.000482608652174
Ant 15 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 16 : [1, 8, 3, 4, 6], 56
Exploration
avg = 0.000248218509041
p = 0.000536768599034
Ant 17 : [8, 3, 4, 7, 2], 60
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 3 : [4, 7, 2, 3, 8, 0], 73
Exploration
avg = 0.000463504936918
p = 0.000723906521152
p = 0.000603864673913
Ant 19 : [1, 8, 0, 5, 6], 73
Exploration
avg = 0.000256670191812
p = 0.000377693761815
Ant 1 : [3, 8, 0, 4, 6, 5, 2], 91
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000414579790699
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000210990726543
p = 0.00028930197887

Ant 0 : [4, 6, 5, 3, 8, 1, 0, 2], 119
Exploitation
Ant 6 : [6, 4, 7, 3, 8, 0], 67
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000480078146243
p = 0.000723906521152
p = 0.000603864733696
Ant 8 : [3, 8, 1, 0, 5, 6], 85
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000273454595492
p = 0.000536768652174
Ant 11 : [3, 8, 0, 4, 7, 2], 75
Exploration
avg = 0.000537949268123
p = 0.00096618357487
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 12 : [1, 8, 3, 4, 6, 5], 72
Exploration
avg = 0.000156708239647
p = 0.000190002585194
p = 0.000171327832456
Ant 13 : [4, 7, 2, 5, 6, 8], 109
Exploration
avg = 0.000305152473714
p = 0.000355052454545
p = 0.000536231883575
Ant 14 : [5, 6, 4, 7, 2, 3], 77
Exploitation
Ant 15 : [5, 6, 4, 7, 3, 8], 73
Exploration
avg = 0.000292532108668
p = 0.0006038647343
Ant 16 : [1, 8, 3, 4, 6, 5], 72
Exploration
avg = 0.000276371994544
p = 0.000355052454545
p = 0.000419659697542
Ant 17 : [8, 3, 4, 7, 2, 5], 83
Exploration
avg = 0.000414579790699
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000448097109918
p = 0.000869565217391
Ant 3 : [4, 7, 2, 3, 8, 0, 1], 83
Exploitation

Ant 19 : [1, 8, 0, 5, 6, 4], 83
Exploration
avg = 0.000445907869785
p = 0.000536763285024
Ant 1 : [3, 8, 0, 4, 6, 5, 2, 7], 109
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 0 : [4, 6, 5, 3, 8, 1, 0, 2, 7], 137
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000544004357182

p = 0.000965217391304
Ant 6 : [6, 4, 7, 3, 8, 0, 1], 77
Exploration
avg = 0.000537949268126
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000467594414222
p = 0.000966183573913
Ant 8 : [3, 8, 1, 0, 5, 6, 4], 95
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 11 : [3, 8, 0, 4, 7, 2, 5], 98
Exploration
avg = 0.000643953756271
p = 0.000966173913043
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 12 : [1, 8, 3, 4, 6, 5, 2], 95
Exploitation
Ant 13 : [4, 7, 2, 5, 6, 8, 0], 119
Exploitation
Ant 14 : [5, 6, 4, 7, 2, 3, 8], 89
Exploration
avg = 0.000537949268126
p = 0.000966183574879
Ant 15 : [5, 6, 4, 7, 3, 8, 0], 83
Exploration
avg = 0.000301170506492
p = 0.000310550567422
p = 0.00042007557656
Ant 16 : [1, 8, 3, 4, 6, 5, 2], 95
Exploration
avg = 0.000377948913281
p = 0.000603864734293
Ant 17 : [8, 3, 4, 7, 2, 5, 6], 99

Exploration
avg = 0.000537949268126
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.00024415151678
p = 0.00033410796893
Ant 3 : [4, 7, 2, 3, 8, 0, 1, 5], 109
Exploration
avg = 0.000444075621619
p = 0.000468673043478
p = 0.000644122383253
Ant 19 : [1, 8, 0, 5, 6, 4, 7], 98
Exploitation
Ant 1 : [3, 8, 0, 4, 6, 5, 2, 7, 1], 148
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000737348080344

p = 0.000966183574879
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploration
avg = 0.00064395853888
p = 0.000966183478261
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 6 : [6, 4, 7, 3, 8, 0, 1, 2], 99
Exploration
avg = 0.000643958586706
p = 0.000966183573913
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.00043177691069
p = 0.000644122383253
Ant 8 : [3, 8, 1, 0, 5, 6, 4, 7], 110
Exploration
avg = 0.000643958587184
p = 0.00096618357487
Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploitation
Ant 11 : [3, 8, 0, 4, 7, 2, 5, 6], 114
Exploration
avg = 0.000438735177866
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000363471282609

p = 0.000536768652174
Ant 12 : [1, 8, 3, 4, 6, 5, 2, 7], 113
Exploration
avg = 0.000575111422783

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p = 0.000966183574879
Ant 13 : [4, 7, 2, 5, 6, 8, 0, 1], 129
Exploitation
Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0], 99
Exploration
avg = 0.000643958587189
p = 0.000966183574879
Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1], 93
Exploitation
Ant 16 : [1, 8, 3, 4, 6, 5, 2, 7], 113
Exploration
avg = 0.000159833308407
p = 0.000190002585194
Ant 17 : [8, 3, 4, 7, 2, 5, 6, 1], 136
Exploration
avg = 0.000643958587189
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.0006038647343
Ant 3 : [4, 7, 2, 3, 8, 0, 1, 5, 6], 125
Update called by 3Exploitation

Ant thread 3 terminating.Ant 19 : [1, 8, 0, 5, 6, 4, 7, 2], 116

Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 4, 7, 3, 8, 0, 1, 2, 5], 122

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

ExplorationUpdate called by 7

avg = 0.000536768652711Ant thread 7 terminating.

Ant 8 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000439174351779

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
ExplorationUpdate called by 9

avg = 0.000966183574879Ant thread 9 terminating.

Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

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Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [3, 8, 0, 4, 7, 2, 5, 6, 1], 151

Update called by 11Exploration

Ant thread 11 terminating.avg = 0.00014727421638

Ant 12 : [1, 8, 3, 4, 6, 5, 2, 7, 0], 156

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000390909521739

Ant 13 : [4, 7, 2, 5, 6, 8, 0, 1, 3], 147

ExplorationUpdate called by 13

avg = 0.000966183574879Ant thread 13 terminating.

Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1, 2], 115

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 8, 3, 4, 6, 5, 2, 7, 0], 156

Update called by 16Exploration

Ant thread 16 terminating.avg = 0.000966173913035

Ant 17 : [8, 3, 4, 7, 2, 5, 6, 1, 0], 146

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000439174352218

Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 18Exploration

Ant thread 18 terminating.avg = 0.000536763285019

Ant 19 : [1, 8, 0, 5, 6, 4, 7, 2, 3], 134

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 6, 146

Ant thread 19 terminating.iter_counter = 7

starting ant = 0

Explorationstarting ant = 1

avg = 0.000373851464711starting ant = 2

p = 0.00042180573913starting ant = 3

p = 0.000427891304348starting ant = 4

p = 0.000869565217391starting ant = 5

p = 0.000579710144928starting ant = 6

Ant 0 : [4, 7], 15starting ant = 7

Explorationstarting ant = 8

avg = 0.000367484112574starting ant = 9

p = 0.000579710086951starting ant = 10

p = 0.000390913043126starting ant = 11

p = 0.000724637681159starting ant = 12

Ant 1 : [3, 8], 12starting ant = 13

Explorationstarting ant = 14

avg = 0.000299323405983starting ant = 15

p = 0.00048309178744starting ant = 16

p = 0.000434778260478starting ant = 17

p = 0.000579710144928starting ant = 18

Ant 2 : [7, 4], 15starting ant = 19

Exploitation

Ant 3 : [4, 6], 10

Exploration

avg = 0.000285528198256

p = 0.000319547209091

p = 0.00048309173913

p = 0.00037807183327

p = 0.00048309178744

Ant 4 : [2, 7], 18

Exploitation

Ant 5 : [7, 4], 15

Exploitation

Ant 6 : [6, 4], 10

Exploration

avg = 0.000259268157563

p = 0.00048309178744

p = 0.000434778260478

Ant 0 : [4, 7, 3], 35

Exploration

avg = 0.000313352929582

p = 0.00048309178744

p = 0.00048260865217

p = 0.000644115942029

Ant 7 : [7, 4], 15
Exploration
avg = 0.00037744788069
p = 0.000579710086951
p = 0.000390913043126
p = 0.000804347826087
Ant 8 : [3, 8], 12
Exploitation
Ant 9 : [7, 4], 15
Exploration
avg = 0.000292170710333
p = 0.000319547209091
p = 0.00048309173913
p = 0.00037807183327
p = 0.000536231884058
Ant 10 : [2, 7], 18
Exploitation
Ant 11 : [3, 8], 12
Exploitation
Ant 12 : [1, 0], 10
Exploration
avg = 0.000290698553386
p = 0.000869565217391
p = 0.000457661327227
Ant 1 : [3, 8, 1], 31
Exploration
avg = 0.000393779000943
p = 0.00042180573913
p = 0.000427891304348
p = 0.000965217391304
p = 0.00064347826087
Ant 13 : [4, 7], 15
Exploitation
Ant 14 : [5, 4], 12
Exploration
avg = 0.000367048276481
p = 0.000378071795501
p = 0.000395256916996
p = 0.000803616607966
p = 0.00054347826087
Ant 15 : [5, 6], 16
Exploitation
Ant 16 : [1, 0], 10
Exploration
avg = 0.00035123440784
p = 0.000869565217391
p = 0.000508009107551
p = 0.000724637608689
Ant 17 : [8, 3], 12
Exploitation
Ant 18 : [7, 4], 15
Exploitation
Ant 2 : [7, 4, 6], 25
Exploitation

Ant 19 : [1, 0], 10
Exploitation
Ant 3 : [4, 6, 5], 26
Exploitation
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000358244324059
p = 0.00042180573913
p = 0.000427891304348
p = 0.000966173913043
Ant 5 : [7, 4, 6], 25
Exploration
avg = 0.000312236042485
p = 0.00042180573913
p = 0.000427891304348
p = 0.000644115942029
Ant 6 : [6, 4, 7], 25
Exploration
avg = 0.000341627497984
p = 0.000354507865613
p = 0.000805152898551
Ant 0 : [4, 7, 3, 8], 47
Exploitation
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploitation
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000289105441492
p = 0.00048260865217
p = 0.000644122383253
Ant 10 : [2, 7, 4], 33
Exploitation
Ant 11 : [3, 8, 0], 22
Exploitation
Ant 12 : [1, 0, 8], 20
Exploration
avg = 0.000349058809709
p = 0.000966183478261
p = 0.000395256916996
Ant 1 : [3, 8, 1, 2], 53
Exploration
avg = 0.000266101070661
p = 0.00048309178744
p = 0.00048260865217
Ant 13 : [4, 7, 3], 35
Exploitation
Ant 14 : [5, 4, 6], 22
Exploitation
Ant 15 : [5, 6, 4], 26
Exploitation
Ant 16 : [1, 0, 8], 20
Exploration

avg = 0.000316462174205
p = 0.000316953352174
p = 0.000579710086951
p = 0.000354507865613
p = 0.000390913043126
Ant 17 : [8, 3, 7], 32
Exploration
avg = 0.000358245704321
p = 0.00042180573913
p = 0.000427891304348
p = 0.000966183574879
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000241986931741
p = 0.000603260869565
Ant 2 : [7, 4, 6, 5], 41
Exploitation
Ant 19 : [1, 0, 8], 20
Exploitation
Ant 3 : [4, 6, 5, 3], 48
Exploitation
Ant 4 : [2, 7, 4, 6], 43
Exploitation
Ant 5 : [7, 4, 6, 5], 41
Exploitation
Ant 6 : [6, 4, 7, 2], 43
Exploitation
Ant 0 : [4, 7, 3, 8, 0], 57
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 0, 1], 32
Exploitation
Ant 9 : [7, 4, 6, 5], 41
Exploration
avg = 0.000385038605989
p = 0.00042180573913
p = 0.000427891304348
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6], 43
Exploration
avg = 0.000372703486542
p = 0.000965217391304
p = 0.000434778260478
Ant 11 : [3, 8, 0, 4], 42
Exploitation
Ant 12 : [1, 0, 8, 3], 32
Exploitation
Ant 1 : [3, 8, 1, 2, 7], 71
Exploitation
Ant 13 : [4, 7, 3, 8], 47
Exploitation
Ant 14 : [5, 4, 6, 7], 53
Exploitation

Ant 15 : [5, 6, 4, 7], 41
Exploration
avg = 0.000252134709436
p = 0.000805144927529
Ant 16 : [1, 0, 8, 3], 32
Exploitation
Ant 17 : [8, 3, 7, 4], 47
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000295434553188
p = 0.000378071795501
p = 0.000438735177866
Ant 2 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.00025213603794
p = 0.000805152898551
Ant 19 : [1, 0, 8, 3], 32
Exploitation
Ant 3 : [4, 6, 5, 3, 8], 60
Exploitation
Ant 4 : [2, 7, 4, 6, 5], 59
Exploitation
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 6 : [6, 4, 7, 2, 3], 61
Exploration
avg = 0.000420507782995
p = 0.000965217391304
Ant 0 : [4, 7, 3, 8, 0, 1], 67
Exploration
avg = 0.000295522379275
p = 0.000378071795501
p = 0.0004391743083
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 8 : [3, 8, 0, 1, 2], 54
Exploration
avg = 0.00029552238797
p = 0.000378071795501
p = 0.000439174351779
Ant 9 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000472810589491
p = 0.000966183574879
p = 0.000644122382609
Ant 11 : [3, 8, 0, 4, 7], 57
Exploration
avg = 0.000364780696102
p = 0.000579710086951
p = 0.000482169999996
Ant 12 : [1, 0, 8, 3, 7], 52

Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4], 86
Exploration
avg = 0.000384317322176
p = 0.000966183478261
p = 0.000508009107551
Ant 13 : [4, 7, 3, 8, 1], 66
Exploitation
Ant 14 : [5, 4, 6, 7, 2], 71
Exploration
avg = 0.000319125022914
p = 0.000536763285024
p = 0.000483086956087
Ant 15 : [5, 6, 4, 7, 3], 61
Exploitation
Ant 16 : [1, 0, 8, 3, 4], 47
Exploration
avg = 0.000395333069491
p = 0.000427891304348
p = 0.000966183574879
Ant 17 : [8, 3, 7, 4, 6], 57
Exploration
avg = 0.000295522388057
p = 0.000378071795501
p = 0.000439174352213
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000377716844684
p = 0.00064347826029
p = 0.000483082569565
Ant 19 : [1, 0, 8, 3, 7], 52
Exploration
avg = 0.000437738250824
p = 0.000966183478261
p = 0.000508512585355
Ant 3 : [4, 6, 5, 3, 8, 1], 79
Exploration
avg = 0.000274885036197
p = 0.00027949551068
p = 0.000439174352218
Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000393250636106
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8], 73
Exploration
avg = 0.000304018723097
p = 0.000439169960474
p = 0.00033411065065
Ant 0 : [4, 7, 3, 8, 0, 1, 5], 93

Exploration
avg = 0.000393250636106
p = 0.000805152979066
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000309717612089
p = 0.00037807183327
p = 0.000536768599034
Ant 8 : [3, 8, 0, 1, 2, 7], 72
Exploration
avg = 0.000393250636106
p = 0.000805152979066
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 11 : [3, 8, 0, 4, 7, 2], 75
Exploitation
Ant 12 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6], 96
Exploitation
Ant 13 : [4, 7, 3, 8, 1, 0], 76
Exploration
avg = 0.000288043023432
p = 0.000319547209091
p = 0.000536231883575
Ant 14 : [5, 4, 6, 7, 2, 3], 89
Exploration
avg = 0.000393250636106
p = 0.000805152979066
Ant 15 : [5, 6, 4, 7, 3, 8], 73
Exploration
avg = 0.000558921389197
p = 0.000966183574879
p = 0.000644122383246
Ant 16 : [1, 0, 8, 3, 4, 7], 62
Exploration
avg = 0.000274015349061
p = 0.0006038647343
Ant 17 : [8, 3, 7, 4, 6, 5], 73
Exploration
avg = 0.000393250636106
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 19 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 3 : [4, 6, 5, 3, 8, 1, 0], 89
Exploration
avg = 0.000429247224953
p = 0.000805152979066

Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000533312557789
p = 0.000966183573913
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8, 0], 83
Exploration
avg = 0.000490666332533
p = 0.000603260869565
Ant 0 : [4, 7, 3, 8, 0, 1, 5, 6], 109
Exploration
avg = 0.000533312558111
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000533312558111
p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000429247224953
p = 0.000805152979066
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 11 : [3, 8, 0, 4, 7, 2, 5], 98
Exploration
avg = 0.000530521057847
p = 0.000966183574879
Ant 12 : [1, 0, 8, 3, 7, 4, 6], 77
Exploration
avg = 0.000360281181379
p = 0.0006038647343
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5], 112
Exploitation
Ant 13 : [4, 7, 3, 8, 1, 0, 5], 104
Exploration
avg = 0.000429247224953
p = 0.000805152979066
Ant 14 : [5, 4, 6, 7, 2, 3, 8], 101
Exploitation
Ant 15 : [5, 6, 4, 7, 3, 8, 0], 83
Exploitation
Ant 16 : [1, 0, 8, 3, 4, 7, 2], 80
Exploration
avg = 0.000285018533498
p = 0.000378071795501
Ant 17 : [8, 3, 7, 4, 6, 5, 2], 96
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration

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avg = 0.000530521057847
p = 0.000966183574879
Ant 19 : [1, 0, 8, 3, 7, 4, 6], 77
Exploration
avg = 0.000204485883172
p = 0.000289560239549
Ant 3 : [4, 6, 5, 3, 8, 1, 0, 2], 119
Exploration
avg = 0.000737350597506
p = 0.000966183574879
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1], 93
Exploitation
Ant 0 : [4, 7, 3, 8, 0, 1, 5, 6, 2], 159
Update called by 0Exploitation

Ant thread 0 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration
avg = 0.000697037439614
p = 0.000966183574879
Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000737350597506
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploration
avg = 0.000400673494983
p = 0.000603858695652
Ant 11 : [3, 8, 0, 4, 7, 2, 5, 6], 114
Exploration
avg = 0.000398286980106
p = 0.0006038647343
Ant 12 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140
Update called by 1Exploitation

Ant thread 1 terminating.Ant 13 : [4, 7, 3, 8, 1, 0, 5, 6], 120

Exploration
avg = 0.000737350597506
p = 0.000966183574879
Ant 14 : [5, 4, 6, 7, 2, 3, 8, 0], 111
Exploration
avg = 0.000643959878492
p = 0.000966183574879
Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1], 93
Exploration

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avg = 0.000273100728543
p = 0.000419659735346
Ant 16 : [1, 0, 8, 3, 4, 7, 2, 5], 103
Exploitation
Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1], 118
Exploration
avg = 0.000643959878492
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000439169960474
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000398286980106

p = 0.0006038647343
Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 3 : [4, 6, 5, 3, 8, 1, 0, 2, 7], 137
Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1, 5], 119

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000439174351779

Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
ExplorationUpdate called by 7

avg = 0.0006038647343Ant thread 7 terminating.

Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 9Exploration

Ant thread 9 terminating.avg = 0.000966183574879

Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 10Exploration

Ant thread 10 terminating.avg = 0.000235011224792

Ant 11 : [3, 8, 0, 4, 7, 2, 5, 6, 1], 151
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000419659734968

Ant 12 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000192709225913

Ant 13 : [4, 7, 3, 8, 1, 0, 5, 6, 2], 170
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [5, 4, 6, 7, 2, 3, 8, 0, 1], 121
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000439174352218

Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1, 2], 115
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000603864733696

Ant 16 : [1, 0, 8, 3, 4, 7, 2, 5, 6], 119
Update called by 16Exploration

Ant thread 16 terminating.avg = 0.00096618357487

Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1, 0], 128
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 19
Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 7, 147
Ant thread 19 terminating.iter_counter = 8

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [4, 6], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000357337690197starting ant = 4

p = 0.000579130434261starting ant = 5

p = 0.000434782525735starting ant = 6

p = 0.000724637681159starting ant = 7

Ant 1 : [3, 8], 12starting ant = 8

Exploitationstarting ant = 9

Ant 0 : [4, 6, 5], 26starting ant = 10

Explorationstarting ant = 11

avg = 0.000288111355827starting ant = 12

p = 0.000483091786957starting ant = 13

p = 0.000434782565213starting ant = 14

p = 0.000579710144928starting ant = 15

Ant 2 : [7, 4], 15starting ant = 16

Explorationstarting ant = 17

avg = 0.000366538782008starting ant = 18

p = 0.000379625165217starting ant = 19

p = 0.000385102173913

p = 0.000965217391304

p = 0.000579710144927

Ant 3 : [4, 7], 15

Exploitation

Ant 4 : [2, 7], 18

Exploration

avg = 0.00029608237032

p = 0.000483091786957

p = 0.000434782565213

p = 0.00064347826087

Ant 5 : [7, 4], 15

Exploitation

Ant 6 : [6, 4], 10

Exploitation

Ant 7 : [7, 4], 15

Exploration

avg = 0.000280589724527

p = 0.000869565217391

p = 0.000457665858119

Ant 1 : [3, 8, 1], 31

Exploration

avg = 0.000367301458313

p = 0.000579130434261

p = 0.000434782525735

p = 0.000804347826087

Ant 8 : [3, 8], 12
Exploration
avg = 0.000296162877566
p = 0.000483091786957
p = 0.000434782565213
p = 0.000644122318841
Ant 9 : [7, 4], 15
Exploitation
Ant 0 : [4, 6, 5, 3], 48
Exploration
avg = 0.000293743485202
p = 0.000394180272708
p = 0.000483086956517
p = 0.00037806805293
p = 0.000536231884058
Ant 10 : [2, 7], 18
Exploitation
Ant 11 : [3, 8], 12
Exploitation
Ant 12 : [1, 0], 10
Exploration
avg = 0.000374509796501
p = 0.000379625165217
p = 0.000385102173913
p = 0.000965217391304
p = 0.00064347826087
Ant 13 : [4, 7], 15
Exploitation
Ant 14 : [5, 4], 12
Exploitation
Ant 15 : [5, 4], 12
Exploitation
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000362417643391
p = 0.000965217391304
p = 0.000395256916996
p = 0.000433601149735
p = 0.000411899272304
Ant 16 : [1, 8], 19
Exploitation
Ant 17 : [8, 0], 10
Exploitation
Ant 18 : [7, 4], 15
Exploitation
Ant 19 : [1, 0], 10
Exploration
avg = 0.000246454385955
p = 0.000483091786957
p = 0.000434782565213
Ant 3 : [4, 7, 3], 35
Exploration
avg = 0.00027629106114
p = 0.000482608695217

p = 0.000644122383246
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000336222376125
p = 0.000379625165217
p = 0.000385102173913
p = 0.000966173913043
Ant 5 : [7, 4, 6], 25
Exploitation
Ant 6 : [6, 4, 7], 25
Exploration
avg = 0.000336223742585
p = 0.000379625165217
p = 0.000385102173913
p = 0.000966183478261
Ant 7 : [7, 4, 6], 25
Exploration
avg = 0.000342466207805
p = 0.000966173913043
p = 0.000395256916996
Ant 1 : [3, 8, 1, 2], 53
Exploitation
Ant 8 : [3, 8, 0], 22
Exploitation
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000386200006621
p = 0.000434782525735
p = 0.000805152898551
Ant 0 : [4, 6, 5, 3, 8], 60
Exploitation
Ant 10 : [2, 7, 4], 33
Exploration
avg = 0.000301582866012
p = 0.000966173913043
p = 0.00050800915286
Ant 11 : [3, 8, 1], 31
Exploitation
Ant 12 : [1, 0, 8], 20
Exploration
avg = 0.000253286690242
p = 0.000483091786957
p = 0.000482608695217
Ant 13 : [4, 7, 3], 35
Exploration
avg = 0.000373226634233
p = 0.000379625165217
p = 0.00096618357487
p = 0.000644122318841
Ant 14 : [5, 4, 7], 27
Exploitation
Ant 15 : [5, 4, 6], 22
Exploration
avg = 0.000239632872563

p = 0.000603260869565
Ant 2 : [7, 4, 6, 5], 41
Exploitation
Ant 16 : [1, 8, 0], 29
Exploitation
Ant 17 : [8, 0, 1], 20
Exploration
avg = 0.000336223756387
p = 0.000379625165217
p = 0.000385102173913
p = 0.000966183574879
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000337278029783
p = 0.000434347786953
p = 0.000965217389645
Ant 19 : [1, 0, 8], 20
Exploration
avg = 0.000320883976447
p = 0.000805152978261
Ant 3 : [4, 7, 3, 8], 47
Exploration
avg = 0.000362637804971
p = 0.000379625165217
p = 0.000385102173913
p = 0.000966183574879
Ant 4 : [2, 7, 4, 6], 43
Exploration
avg = 0.000239732510244
p = 0.000603858695652
Ant 5 : [7, 4, 6, 5], 41
Exploitation
Ant 6 : [6, 4, 7, 2], 43
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 1 : [3, 8, 1, 2, 7], 71
Exploration
avg = 0.000368645733481
p = 0.000965217391304
p = 0.000434347786953
Ant 8 : [3, 8, 0, 4], 42
Exploration
avg = 0.000239733516585
p = 0.000603864733696
Ant 9 : [7, 4, 6, 5], 41
Exploitation
Ant 0 : [4, 6, 5, 3, 8, 0], 70
Exploration
avg = 0.000362637804971
p = 0.000379625165217
p = 0.000385102173913
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6], 43

Exploration
avg = 0.000349712584617
p = 0.000966173913043
p = 0.000438735177866
Ant 11 : [3, 8, 1, 2], 53
Exploitation
Ant 12 : [1, 0, 8, 3], 32
Exploration
avg = 0.00032088397658
p = 0.000805152979058
Ant 13 : [4, 7, 3, 8], 47
Exploration
avg = 0.00028109800599
p = 0.000536231884053
p = 0.000483086956517
Ant 14 : [5, 4, 7, 3], 47
Exploration
avg = 0.0001857513821
p = 0.000234782551082
p = 0.000279971926786
p = 0.000210788460496
Ant 15 : [5, 4, 6, 8], 59
Exploration
avg = 0.000293911820631
p = 0.000309968875745
p = 0.000378071795841
p = 0.000438735177866
Ant 2 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 16 : [1, 8, 0, 4], 49
Exploitation
Ant 17 : [8, 0, 1, 2], 42
Exploration
avg = 0.000248039985528
p = 0.000603864734293
p = 0.000260627273559
Ant 18 : [7, 4, 6, 8], 62
Exploitation
Ant 19 : [1, 0, 8, 3], 32
Exploration
avg = 0.000375470156456
p = 0.000966183573913
p = 0.000508512585808
Ant 3 : [4, 7, 3, 8, 1], 66
Exploration
avg = 0.000262966001045
p = 0.000603864734293
Ant 4 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000293998777153
p = 0.000309968875745
p = 0.000378071795841
p = 0.000439169960474
Ant 5 : [7, 4, 6, 5, 3], 63

Exploitation
Ant 6 : [6, 4, 7, 2, 3], 61
Exploitation
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4], 86
Exploitation
Ant 8 : [3, 8, 0, 4, 6], 52
Exploration
avg = 0.000293999655414
p = 0.000309968875745
p = 0.000378071795841
p = 0.000439174351779
Ant 9 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000454083443105
p = 0.000965217391304
Ant 0 : [4, 6, 5, 3, 8, 0, 1], 80
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000272100907195
p = 0.00037806805293
p = 0.000536768599034
Ant 11 : [3, 8, 1, 2, 7], 71
Exploitation
Ant 12 : [1, 0, 8, 3, 4], 47
Exploitation
Ant 13 : [4, 7, 3, 8, 0], 57
Exploration
avg = 0.000321249356087
p = 0.000805152979066
Ant 14 : [5, 4, 7, 3, 8], 59
Exploitation
Ant 15 : [5, 4, 6, 8, 0], 69
Exploration
avg = 0.000374054396972
p = 0.000805152979066
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 16 : [1, 8, 0, 4, 6], 59
Exploitation
Ant 17 : [8, 0, 1, 2, 7], 60
Exploitation
Ant 18 : [7, 4, 6, 8, 0], 72
Exploration
avg = 0.000352815208741
p = 0.000643472463763
p = 0.000434782525735
Ant 19 : [1, 0, 8, 3, 7], 52
Exploration
avg = 0.000466172752343
p = 0.000966173913043
Ant 3 : [4, 7, 3, 8, 1, 0], 76

Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000374054396972
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000389634971083
p = 0.000805152979066
Ant 6 : [6, 4, 7, 2, 3, 8], 73
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6], 96
Exploitation
Ant 8 : [3, 8, 0, 4, 6, 5], 68
Exploration
avg = 0.000374054396972
p = 0.000805152979066
Ant 9 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 0 : [4, 6, 5, 3, 8, 0, 1, 2], 102
Exploration
avg = 0.000272981620416
p = 0.000309968875745
p = 0.000439174352218
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000278806774478
p = 0.000644122383253
Ant 11 : [3, 8, 1, 2, 7, 4], 86
Exploration
avg = 0.000543286899071
p = 0.000966183574879
p = 0.000644122382609
Ant 12 : [1, 0, 8, 3, 4, 7], 62
Exploration
avg = 0.000417753190389
p = 0.000966173913043
Ant 13 : [4, 7, 3, 8, 0, 1], 67
Exploration
avg = 0.000428078007189
p = 0.000966183574879
p = 0.000508517620137
Ant 14 : [5, 4, 7, 3, 8, 1], 78
Exploration
avg = 0.000378072056382
p = 0.000966183478261
Ant 15 : [5, 4, 6, 8, 0, 1], 79
Exploration
avg = 0.000529138025583
p = 0.000966183574879
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration

```
avg = 0.000291943537427
p = 0.0006038647343
Ant 16 : [1, 8, 0, 4, 6, 5], 75
Exploration
avg = 0.000354080771448
p = 0.00048309173913
p = 0.000644122383253
Ant 17 : [8, 0, 1, 2, 7, 4], 75
Exploitation
Ant 18 : [7, 4, 6, 8, 0, 1], 82
Exploitation
Ant 19 : [1, 0, 8, 3, 7, 4], 67
Exploration
avg = 0.000234946282837
p = 0.000289562563895
p = 0.000310248419003
Ant 3 : [4, 7, 3, 8, 1, 0, 5], 104
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000529138025583
p = 0.000966183574879
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.00054658167806
p = 0.000966183574879
Ant 6 : [6, 4, 7, 2, 3, 8, 0], 83
Exploration
avg = 0.000529138025583
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5], 112
Exploration
avg = 0.000231949471625
p = 0.000378071795841
Ant 8 : [3, 8, 0, 4, 6, 5, 2], 91
Exploitation
Ant 9 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000536768652705
Ant 0 : [4, 6, 5, 3, 8, 0, 1, 2, 7], 120
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.000413160935093

p = 0.000805152979066
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploitation
Ant 11 : [3, 8, 1, 2, 7, 4, 6], 96
Exploitation
Ant 12 : [1, 0, 8, 3, 4, 7, 2], 80
Exploration
avg = 0.000299505713269
```

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p = 0.000439174351779
p = 0.000334444785678
Ant 13 : [4, 7, 3, 8, 0, 1, 5], 93
Exploitation
Ant 14 : [5, 4, 7, 3, 8, 1, 0], 88
Exploration
avg = 0.000330422826034
p = 0.000439174351779
p = 0.000433601149735
Ant 15 : [5, 4, 6, 8, 0, 1, 3], 97
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000332957080447
p = 0.000419659734972
p = 0.000439174352218
Ant 16 : [1, 8, 0, 4, 6, 5, 3], 97
Exploitation
Ant 17 : [8, 0, 1, 2, 7, 4, 6], 85
Exploration
avg = 0.000448716251302
p = 0.000535736977681
Ant 18 : [7, 4, 6, 8, 0, 1, 3], 100
Exploration
avg = 0.000509675071225
p = 0.000966183574879
Ant 19 : [1, 0, 8, 3, 7, 4, 6], 77
Exploitation
Ant 3 : [4, 7, 3, 8, 1, 0, 5, 6], 120
Exploration
avg = 0.00073735062268
p = 0.000966183574879
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploration
avg = 0.000627873069387
p = 0.000966183574879
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1], 93
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000309968875745
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140
Update called by 1Exploitation

Ant thread 1 terminating.Ant 8 : [3, 8, 0, 4, 6, 5, 2, 7], 109

Exploration
avg = 0.000627873069387
p = 0.000966183574879
Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.00073735062268

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p = 0.000966183574879
Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploration
avg = 0.000354446299956
p = 0.0006038647343
Ant 11 : [3, 8, 1, 2, 7, 4, 6, 5], 112
Exploitation
Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5], 103
Exploitation
Ant 13 : [4, 7, 3, 8, 0, 1, 5, 6], 109
Exploitation
Ant 14 : [5, 4, 7, 3, 8, 1, 0, 2], 118
Exploration
avg = 0.000369671738716
p = 0.000482608694823
Ant 15 : [5, 4, 6, 8, 0, 1, 3, 7], 117
Exploration
avg = 0.000439174351779
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000369910869561

p = 0.000483086956513
Ant 16 : [1, 8, 0, 4, 6, 5, 3, 7], 117
Exploration
avg = 0.000356946963423
p = 0.0006038647343
Ant 17 : [8, 0, 1, 2, 7, 4, 6, 5], 101
Exploration
avg = 0.00028789593083
p = 0.000319057079051
Ant 18 : [7, 4, 6, 8, 0, 1, 3, 5], 122
Exploitation
Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 3 : [4, 7, 3, 8, 1, 0, 5, 6, 2], 170
Update called by 3Exploitation

Ant thread 3 terminating.Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 5Exploitation

Ant thread 5 terminating.Ant 6 : [6, 4, 7, 2, 3, 8, 0, 1, 5], 119

Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000439174352218

Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 4, 6, 5, 2, 7, 1], 148

Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000439174352218

Ant 9 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5, 6], 119

ExploitationUpdate called by 12

Ant 13 : [4, 7, 3, 8, 0, 1, 5, 6, 2], 159Ant thread 12 terminating.

Update called by 13Exploration

Ant thread 13 terminating.avg = 0.000113887549565

Ant 14 : [5, 4, 7, 3, 8, 1, 0, 2, 6], 168

Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [5, 4, 6, 8, 0, 1, 3, 7, 2], 135

Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000536768599034

Ant 16 : [1, 8, 0, 4, 6, 5, 3, 7, 2], 135

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [8, 0, 1, 2, 7, 4, 6, 5, 3], 123

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 8, 0, 1, 3, 5, 2], 145

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 8, 153

Ant thread 19 terminating.iter_counter = 9

starting ant = 0
starting ant = 1Exploitation

starting ant = 2Ant 0 : [4, 6], 10

starting ant = 3Exploitation

starting ant = 4Ant 1 : [3, 8], 12

starting ant = 5Exploration

starting ant = 6avg = 0.000283305456016

starting ant = 7p = 0.000483091786957

starting ant = 8p = 0.000434782565217

starting ant = 9p = 0.000579710144928

starting ant = 10Ant 2 : [7, 4], 15

starting ant = 11Exploration

starting ant = 12avg = 0.000229890434676

starting ant = 13p = 0.00054347826087

starting ant = 14p = 0.000251974734108

starting ant = 15p = 0.000235013095521

starting ant = 16Ant 0 : [4, 6, 8], 47

starting ant = 17Exploitation

starting ant = 18Ant 3 : [4, 6], 10

starting ant = 19Exploitation

Ant 4 : [2, 7], 18
Exploitation
Ant 1 : [3, 8, 0], 22
Exploitation
Ant 5 : [7, 4], 15
Exploration
avg = 0.00031297313013
p = 0.000868695573913
p = 0.00054347826087
Ant 6 : [6, 5], 16
Exploration
avg = 0.000291356180653
p = 0.000483091786957
p = 0.000434782565217

p = 0.000644115942029
Ant 7 : [7, 4], 15
Exploration
avg = 0.000366676986433
p = 0.000579125217387
p = 0.000394175861538
p = 0.000434782565217
p = 0.000804347826087
Ant 8 : [3, 8], 12
Exploitation
Ant 9 : [7, 4], 15
Exploration
avg = 0.000290567407463
p = 0.000354762245437
p = 0.000482608652174
p = 0.000377693727788
p = 0.000536231884058
Ant 10 : [2, 7], 18
Exploitation
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000366776624114
p = 0.000579125217387
p = 0.000394175861538
p = 0.000434782565217
p = 0.000805144927536
Ant 11 : [3, 8], 12
Exploration
avg = 0.000357771907242
p = 0.000869565216522
p = 0.000395256916996
p = 0.000483082502364
p = 0.000456796338302
Ant 12 : [1, 8], 19
Exploitation
Ant 13 : [4, 6], 10
Exploration
avg = 0.000348316430534
p = 0.000378071795841
p = 0.000395256916996
p = 0.000724630310337
p = 0.000543478206522
Ant 14 : [5, 6], 16
Exploitation
Ant 15 : [5, 4], 12
Exploration
avg = 0.000364172422162
p = 0.000869565216522
p = 0.000395256916996
p = 0.000483082502364
p = 0.000508000457662
Ant 16 : [1, 8], 19
Exploration
avg = 0.0004199702101

p = 0.000965217391304
p = 0.000457665903432
p = 0.000724630434783
Ant 0 : [4, 6, 8, 3], 59
Exploration
avg = 0.000350054793115
p = 0.000965217391304
p = 0.000457665903432
p = 0.000804347753623
Ant 17 : [8, 3], 12
Exploration
avg = 0.000291356985726
p = 0.000483091786957
p = 0.000434782565217
p = 0.000644122382609
Ant 18 : [7, 4], 15
Exploitation
Ant 3 : [4, 6, 5], 26
Exploration
avg = 0.000364236427311
p = 0.000869565216522
p = 0.000395256916996
p = 0.000483082502364
p = 0.000508512498856
Ant 19 : [1, 8], 19
Exploitation
Ant 4 : [2, 7, 4], 33
Exploitation
Ant 1 : [3, 8, 0, 1], 32
Exploitation
Ant 5 : [7, 4, 6], 25
Exploration
avg = 0.000331824382828
p = 0.000378071795841
p = 0.000395256916996
p = 0.000804347752379
Ant 6 : [6, 5, 4], 28
Exploration
avg = 0.000316404003245
p = 0.000341662648696
p = 0.000346591956522
p = 0.00096618357487
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploitation
Ant 9 : [7, 4, 6], 25
Exploitation
Ant 10 : [2, 7, 4], 33
Exploration
avg = 0.000240582527967
p = 0.000603858695652
p = 0.000260869519909
Ant 2 : [7, 4, 6, 8], 62

Exploration
avg = 0.00028529244472
p = 0.000966173913043
p = 0.000457665903432
Ant 11 : [3, 8, 1], 31
Exploitation
Ant 12 : [1, 8, 0], 29
Exploitation
Ant 13 : [4, 6, 5], 26
Exploration
avg = 0.000280080763487
p = 0.000868695573913
Ant 14 : [5, 6, 4], 26
Exploration
avg = 0.00034970660159
p = 0.000966183574879
p = 0.000579710144922
Ant 15 : [5, 4, 7], 27
Exploration
avg = 0.000334933671662
p = 0.000966183478261
p = 0.000805144926812
Ant 16 : [1, 8, 3], 31
Exploration
avg = 0.000290183314939
p = 0.000394175861538
p = 0.000434782565217
Ant 0 : [4, 6, 8, 3, 7], 79
Exploration
avg = 0.000310984885053
p = 0.000579125217387
p = 0.000394175861538
p = 0.000482608695217
Ant 17 : [8, 3, 7], 32
Exploration
avg = 0.000316404003247
p = 0.000341662648696
p = 0.000346591956522
p = 0.000966183574879
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 3 : [4, 6, 5, 3], 48
Exploitation
Ant 19 : [1, 8, 0], 29
Exploitation
Ant 4 : [2, 7, 4, 6], 43
Exploration
avg = 0.000210546240149
p = 0.000395256916996
p = 0.00033444481575
Ant 1 : [3, 8, 0, 1, 5], 58
Exploitation
Ant 5 : [7, 4, 6, 5], 41
Exploration

avg = 0.000257588458699
p = 0.000341662648696
p = 0.00064347826087
Ant 6 : [6, 5, 4, 7], 43
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 0, 1], 32
Exploration
avg = 0.000240626628447
p = 0.000603864734293
p = 0.000261128084153
Ant 9 : [7, 4, 6, 8], 62
Exploitation
Ant 10 : [2, 7, 4, 6], 43
Exploitation
Ant 2 : [7, 4, 6, 8, 0], 72
Exploitation
Ant 11 : [3, 8, 1, 0], 41
Exploitation
Ant 12 : [1, 8, 0, 4], 49
Exploration
avg = 0.000260316864714
p = 0.000310555847509
p = 0.000378071795841
p = 0.000438735177866
Ant 13 : [4, 6, 5, 3], 48
Exploration
avg = 0.000257694738893
p = 0.000341662648696
p = 0.000644115942029
Ant 14 : [5, 6, 4, 7], 41
Exploration
avg = 0.00026011667741
p = 0.000483091786957
p = 0.000434782565217
Ant 15 : [5, 4, 7, 3], 47
Exploration
avg = 0.000320106706902
p = 0.000579125217387
p = 0.000394175861538
p = 0.000483086956517
Ant 16 : [1, 8, 3, 7], 51
Exploration
avg = 0.00024886493419
p = 0.000483091786957
Ant 0 : [4, 6, 8, 3, 7, 2], 97
Exploitation
Ant 17 : [8, 3, 7, 4], 47
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000382040557124
p = 0.00048309173913

p = 0.000805152898551
Ant 3 : [4, 6, 5, 3, 8], 60
Exploitation
Ant 19 : [1, 8, 0, 4], 49
Exploitation
Ant 4 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000478127757599
p = 0.000805144926799
p = 0.000603260869022
Ant 1 : [3, 8, 0, 1, 5, 6], 74
Exploitation
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 6 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 8 : [3, 8, 0, 1, 2], 54
Exploration
avg = 0.000505865316983
p = 0.00096618357487
p = 0.000508009153314
p = 0.000805152898543
Ant 9 : [7, 4, 6, 8, 3], 74
Exploration
avg = 0.000253970210482
p = 0.0006038647343
p = 0.000261130669796
Ant 10 : [2, 7, 4, 6, 8], 80
Exploitation
Ant 2 : [7, 4, 6, 8, 0, 1], 82
Exploration
avg = 0.000254828721714
p = 0.000289562584814
p = 0.000483086956083
p = 0.00031024565192
Ant 11 : [3, 8, 1, 0, 5], 69
Exploitation
Ant 12 : [1, 8, 0, 4, 6], 59
Exploitation
Ant 13 : [4, 6, 5, 3, 8], 60
Exploitation
Ant 14 : [5, 6, 4, 7, 2], 59
Exploration
avg = 0.000305227480058
p = 0.000805152979058
Ant 15 : [5, 4, 7, 3, 8], 59
Exploration
avg = 0.000320977045096
p = 0.000536768599034
p = 0.000644122383253
Ant 16 : [1, 8, 3, 7, 4], 66
Exploration

avg = 0.000290364251945
p = 0.000354762245437
p = 0.000377693727788
Ant 0 : [4, 6, 8, 3, 7, 2, 5], 120
Exploration
avg = 0.000356934762133
p = 0.000966183574879
Ant 17 : [8, 3, 7, 4, 6], 57
Exploration
avg = 0.000287261384692
p = 0.000310555847509
p = 0.000378071795841
p = 0.000439174351779
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 3 : [4, 6, 5, 3, 8, 0], 70
Exploration
avg = 0.000491705203466
p = 0.000966183574879
p = 0.000644122318841
Ant 19 : [1, 8, 0, 4, 7], 64
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3], 81
Exploitation
Ant 1 : [3, 8, 0, 1, 5, 6, 4], 84
Exploration
avg = 0.000356777781751
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 6 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000356777781751
p = 0.000805152979066
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000322395914675
p = 0.000419655954291
p = 0.000536763285024
Ant 8 : [3, 8, 0, 1, 2, 7], 72
Exploration
avg = 0.000254033502369
p = 0.000256732215261
p = 0.000394175861538
Ant 9 : [7, 4, 6, 8, 3, 5], 96
Exploitation
Ant 10 : [2, 7, 4, 6, 8, 0], 90
Exploitation
Ant 2 : [7, 4, 6, 8, 0, 1, 3], 100
Exploration
avg = 0.000478277214256
p = 0.000805144926799
p = 0.000603858695647
Ant 11 : [3, 8, 1, 0, 5, 6], 85

Exploration
avg = 0.000282194261405
p = 0.0006038647343
Ant 12 : [1, 8, 0, 4, 6, 5], 75
Exploration
avg = 0.000424490212333
p = 0.000966183574879
p = 0.000508009153314
Ant 13 : [4, 6, 5, 3, 8, 1], 79
Exploration
avg = 0.00028276690725
p = 0.000354762245437
p = 0.000536227052705
Ant 14 : [5, 6, 4, 7, 2, 3], 77
Exploration
avg = 0.000422136477764
p = 0.000966183574879
p = 0.000508512585812
Ant 15 : [5, 4, 7, 3, 8, 1], 78
Exploration
avg = 0.000420174055927
p = 0.000966183574879
Ant 16 : [1, 8, 3, 7, 4, 6], 76
Exploration
avg = 0.000235260682952
p = 0.000310555847509
Ant 0 : [4, 6, 8, 3, 7, 2, 5, 0], 148
Exploration
avg = 0.000270901353311
p = 0.0006038647343
Ant 17 : [8, 3, 7, 4, 6, 5], 73
Exploration
avg = 0.000356777781751
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.00045082313326
p = 0.000966183478261
Ant 3 : [4, 6, 5, 3, 8, 0, 1], 80
Exploitation
Ant 19 : [1, 8, 0, 4, 7, 2], 82
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000402043950502
p = 0.000644122382609
Ant 1 : [3, 8, 0, 1, 5, 6, 4, 7], 99
Exploration
avg = 0.000525380914422
p = 0.000966183574879
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000398683274219
p = 0.000805152979066

Ant 6 : [6, 5, 4, 7, 2, 3, 8], 91
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000294252593181
p = 0.000344720465307
p = 0.000378071795841
Ant 9 : [7, 4, 6, 8, 3, 5, 2], 119
Exploration
avg = 0.000481688521865
p = 0.000966183573913
Ant 10 : [2, 7, 4, 6, 8, 0, 1], 100
Exploitation
Ant 2 : [7, 4, 6, 8, 0, 1, 3, 5], 122
Exploitation
Ant 11 : [3, 8, 1, 0, 5, 6, 4], 95
Exploitation
Ant 12 : [1, 8, 0, 4, 6, 5, 3], 97
Exploitation
Ant 13 : [4, 6, 5, 3, 8, 1, 0], 89
Exploration
avg = 0.000398683274219
p = 0.000805152979066
Ant 14 : [5, 6, 4, 7, 2, 3, 8], 89
Exploration
avg = 0.000505772431008
p = 0.000966173913043
Ant 15 : [5, 4, 7, 3, 8, 1, 0], 88
Exploration
avg = 0.00029076703909
p = 0.0006038647343
Ant 16 : [1, 8, 3, 7, 4, 6, 5], 92
Exploitation
Ant 0 : [4, 6, 8, 3, 7, 2, 5, 0, 1], 158
Update called by 0Exploitation

Ant thread 0 terminating.Ant 17 : [8, 3, 7, 4, 6, 5, 2], 96

Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 3 : [4, 6, 5, 3, 8, 0, 1, 2], 102
Exploitation
Ant 19 : [1, 8, 0, 4, 7, 2, 3], 100
Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploration
avg = 0.000536768652174
Ant 1 : [3, 8, 0, 1, 5, 6, 4, 7, 2], 117
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000627873079847

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p = 0.000966183574879
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000737350597508
p = 0.000966183574879
Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0], 101
Exploration
avg = 0.000627873079847
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploitation
Ant 9 : [7, 4, 6, 8, 3, 5, 2, 1], 141
Exploitation
Ant 10 : [2, 7, 4, 6, 8, 0, 1, 3], 118
Exploitation
Ant 2 : [7, 4, 6, 8, 0, 1, 3, 5, 2], 145
Update called by 2Exploitation

Ant thread 2 terminating.Ant 11 : [3, 8, 1, 0, 5, 6, 4, 7], 110

Exploitation
Ant 12 : [1, 8, 0, 4, 6, 5, 3, 7], 117
Exploration
avg = 0.000193142960759
p = 0.000289562584814
Ant 13 : [4, 6, 5, 3, 8, 1, 0, 2], 119
Exploitation
Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0], 99
Exploration
avg = 0.000208130642305
p = 0.000321736205558
Ant 15 : [5, 4, 7, 3, 8, 1, 0, 2], 118
Exploration
avg = 0.000382400119232
p = 0.000420079773157
Ant 16 : [1, 8, 3, 7, 4, 6, 5, 2], 115
Exploration
avg = 0.000288483506879
p = 0.00043833023115
Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1], 118
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 3 : [4, 6, 5, 3, 8, 0, 1, 2, 7], 120
Update called by 3Exploitation

Ant thread 3 terminating.Ant 19 : [1, 8, 0, 4, 7, 2, 3, 5], 122

Exploitation
Ant 4 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113
Update called by 4Exploitation

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Ant thread 4 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 5Exploitation
Ant thread 5 terminating.Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111
Update called by 6Exploitation
Ant thread 6 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 7Exploration
Ant thread 7 terminating.avg = 0.0006038647343
Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
Update called by 8Exploitation
Ant thread 8 terminating.Ant 9 : [7, 4, 6, 8, 3, 5, 2, 1, 0], 151
Update called by 9Exploitation
Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 8, 0, 1, 3, 5], 140
Update called by 10Exploitation
Ant thread 10 terminating.Ant 11 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128
Update called by 11Exploitation
Ant thread 11 terminating.Ant 12 : [1, 8, 0, 4, 6, 5, 3, 7, 2], 135
Update called by 12Exploitation
Ant thread 12 terminating.Ant 13 : [4, 6, 5, 3, 8, 1, 0, 2, 7], 137
Update called by 13Exploitation
Ant thread 13 terminating.Ant 14 : [5, 6, 4, 7, 2, 3, 8, 0, 1], 109
Update called by 14Exploration
Ant thread 14 terminating.avg = 0.00017319890099
Ant 15 : [5, 4, 7, 3, 8, 1, 0, 2, 6], 168
Update called by 15Exploration
Ant thread 15 terminating.avg = 0.000138636782609
Ant 16 : [1, 8, 3, 7, 4, 6, 5, 2, 0], 145
Update called by 16Exploitation
Ant thread 16 terminating.Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1, 0], 128

Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000439174351779

Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 8, 0, 4, 7, 2, 3, 5, 6], 138

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 9, 152

Ant thread 19 terminating.iter_counter = 10

starting ant = 0

Explorationstarting ant = 1

avg = 0.000321631920673starting ant = 2

p = 0.000869565217391starting ant = 3

p = 0.000579710144927starting ant = 4

Ant 0 : [4, 7], 15starting ant = 5

Explorationstarting ant = 6

avg = 0.000340596985096starting ant = 7

p = 0.000521212695648starting ant = 8

p = 0.000395256916591starting ant = 9

p = 0.000434782608261starting ant = 10

p = 0.000724637681159starting ant = 11

Ant 1 : [3, 8], 12starting ant = 12

Exploitationstarting ant = 13

Ant 2 : [7, 4], 15starting ant = 14

Explorationstarting ant = 15

avg = 0.000329602935166starting ant = 16

p = 0.000869565217391starting ant = 17

p = 0.00064347826087starting ant = 18

Ant 3 : [4, 7], 15starting ant = 19

Exploitation

Ant 4 : [2, 7], 18

Exploration
avg = 0.000229916121294
p = 0.00048309178744
p = 0.000434347825696
Ant 0 : [4, 7, 3], 35
Exploration
avg = 0.000287643454006
p = 0.00048309178744
p = 0.000482604347822
p = 0.00064347826087
Ant 5 : [7, 4], 15
Exploration
avg = 0.00029946606679
p = 0.000869565129652
p = 0.00054347826087
Ant 6 : [6, 5], 16
Exploration
avg = 0.000287723164151
p = 0.00048309178744
p = 0.000482604347822
p = 0.000644115942029
Ant 7 : [7, 4], 15
Exploitation
Ant 8 : [3, 8], 12
Exploitation
Ant 9 : [7, 4], 15
Exploration
avg = 0.00031118332718
p = 0.000395249319906
p = 0.000483091738696
p = 0.000377690358862
p = 0.000536231884058
Ant 10 : [2, 7], 18
Exploration
avg = 0.000350660390893
p = 0.000521212695648
p = 0.000395256916591
p = 0.000434782608261
p = 0.000805144927536
Ant 11 : [3, 8], 12
Exploitation
Ant 1 : [3, 8, 0], 22
Exploitation
Ant 12 : [1, 0], 10
Exploration
avg = 0.000329682645311
p = 0.000869565217391
p = 0.000644115942029
Ant 13 : [4, 7], 15
Exploitation
Ant 2 : [7, 4, 6], 25
Exploitation
Ant 14 : [5, 4], 12
Exploration

avg = 0.000352810964168
p = 0.00037807183327
p = 0.000395256916996
p = 0.000804347753617
p = 0.000543478260326
Ant 15 : [5, 6], 16
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [8, 0], 10
Exploration
avg = 0.000287723969224
p = 0.00048309178744
p = 0.000482604347822
p = 0.000644122382609
Ant 18 : [7, 4], 15
Exploitation
Ant 3 : [4, 7, 2], 33
Exploration
avg = 0.000365877980817
p = 0.000966173913043
p = 0.000395256916992
p = 0.000483086955686
p = 0.000457665857341
Ant 19 : [1, 8], 19
Exploitation
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000308215965708
p = 0.000395256916591
p = 0.000805152898551
Ant 0 : [4, 7, 3, 8], 47
Exploitation
Ant 5 : [7, 4, 6], 25
Exploitation
Ant 6 : [6, 5, 4], 28
Exploitation
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploration
avg = 0.000298566211618
p = 0.000307496383826
p = 0.00031193276087
p = 0.000966183478261
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.000259814280999
p = 0.000482604347822
p = 0.000644122383253
Ant 10 : [2, 7, 4], 33
Exploitation
Ant 11 : [3, 8, 0], 22
Exploitation

Ant 1 : [3, 8, 0, 1], 32
Exploration
avg = 0.000301478377759
p = 0.000434778260475
p = 0.000310245627016
p = 0.000782600869552
Ant 12 : [1, 0, 8], 20
Exploration
avg = 0.000244401352543
p = 0.000536231884058
p = 0.000482604347822
Ant 13 : [4, 7, 3], 35
Exploitation
Ant 2 : [7, 4, 6, 5], 41
Exploration
avg = 0.000346021876421
p = 0.000966183573913
p = 0.000644122318841
Ant 14 : [5, 4, 7], 27
Exploration
avg = 0.000264607181921
p = 0.000869565129652
Ant 15 : [5, 6, 4], 26
Exploration
avg = 0.000327442217512
p = 0.000434778260475
p = 0.000964347747826
Ant 16 : [1, 0, 8], 20
Exploitation
Ant 17 : [8, 0, 1], 20
Exploration
avg = 0.000298566225282
p = 0.000307496383826
p = 0.00031193276087
p = 0.000966183573913
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 3 : [4, 7, 2, 3], 51
Exploration
avg = 0.000315243974465
p = 0.000966183573913
p = 0.000724637680435
Ant 19 : [1, 8, 3], 31
Exploitation
Ant 4 : [2, 7, 4, 6], 43
Exploitation
Ant 0 : [4, 7, 3, 8, 0], 57
Exploitation
Ant 5 : [7, 4, 6, 5], 41
Exploitation
Ant 6 : [6, 5, 4, 7], 43
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation

Ant 8 : [3, 8, 0, 1], 32
Exploration
avg = 0.000226628769466
p = 0.000603864733696
p = 0.000235017626087
Ant 9 : [7, 4, 6, 8], 62
Exploitation
Ant 10 : [2, 7, 4, 6], 43
Exploitation
Ant 11 : [3, 8, 0, 1], 32
Exploitation
Ant 1 : [3, 8, 0, 1, 2], 54
Exploitation
Ant 12 : [1, 0, 8, 3], 32
Exploitation
Ant 13 : [4, 7, 3, 8], 47
Exploration
avg = 0.000272246320908
p = 0.000310248418777
p = 0.00037807183327
p = 0.000395256916996
Ant 2 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000266310323027
p = 0.000536231884058
p = 0.000483086913043
Ant 14 : [5, 4, 7, 3], 47
Exploration
avg = 0.00024266160424
p = 0.000307496383826
p = 0.000644122383246
Ant 15 : [5, 6, 4, 7], 41
Exploration
avg = 0.00022017191574
p = 0.000805144927536
Ant 16 : [1, 0, 8, 3], 32
Exploitation
Ant 17 : [8, 0, 1, 3], 38
Exploration
avg = 0.000230937425987
p = 0.000603864733696
p = 0.000260869565215
Ant 18 : [7, 4, 6, 8], 62
Exploration
avg = 0.000328268140169
p = 0.000395256916591
p = 0.000805152979058
Ant 3 : [4, 7, 2, 3, 8], 63
Exploitation
Ant 19 : [1, 8, 3, 4], 46
Exploration
avg = 0.000245872580357
p = 0.000603864733696
p = 0.000261128084606

Ant 4 : [2, 7, 4, 6, 8], 80
Exploitation
Ant 0 : [4, 7, 3, 8, 0, 1], 67
Exploitation
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 6 : [6, 5, 4, 7, 2], 61
Exploitation
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 8 : [3, 8, 0, 1, 2], 54
Exploitation
Ant 9 : [7, 4, 6, 8, 0], 72
Exploration
avg = 0.000245873097396
p = 0.000603864733696
p = 0.0002611306698
Ant 10 : [2, 7, 4, 6, 8], 80
Exploitation
Ant 11 : [3, 8, 0, 1, 2], 54
Exploration
avg = 0.000308038828398
p = 0.000377690358862
p = 0.000536763285024
Ant 1 : [3, 8, 0, 1, 2, 7], 72
Exploitation
Ant 12 : [1, 0, 8, 3, 4], 47
Exploitation
Ant 13 : [4, 7, 3, 8, 0], 57
Exploration
avg = 0.000341228828053
p = 0.000805152979066
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 14 : [5, 4, 7, 3, 8], 59
Exploration
avg = 0.000295529999856
p = 0.000536763285024
p = 0.000483091738696
Ant 15 : [5, 6, 4, 7, 3], 61
Exploration
avg = 0.000354245687402
p = 0.000644110092284
p = 0.000395256916591
p = 0.000434782608261
Ant 16 : [1, 0, 8, 3, 7], 52
Exploitation
Ant 17 : [8, 0, 1, 3, 4], 53
Exploitation
Ant 18 : [7, 4, 6, 8, 0], 72
Exploration
avg = 0.000414675570963
p = 0.000966183574879
p = 0.000457665858124

Ant 3 : [4, 7, 2, 3, 8, 1], 82
Exploitation
Ant 19 : [1, 8, 3, 4, 6], 56
Exploration
avg = 0.000603257773809
p = 0.000966183574879
p = 0.000805152898551
Ant 4 : [2, 7, 4, 6, 8, 3], 92
Exploration
avg = 0.000291485124159
p = 0.0004391743083
p = 0.000334113682272
Ant 0 : [4, 7, 3, 8, 0, 1, 5], 93
Exploration
avg = 0.000341228828053
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 6 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000341228828053
p = 0.000805152979066
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000308040156901
p = 0.000377690358862
p = 0.000536768599034
Ant 8 : [3, 8, 0, 1, 2, 7], 72
Exploration
avg = 0.000421757378743
p = 0.00096618357487
Ant 9 : [7, 4, 6, 8, 0, 1], 82
Exploration
avg = 0.000603257793736
p = 0.000966183574879
p = 0.000805152978261
Ant 10 : [2, 7, 4, 6, 8, 3], 92
Exploitation
Ant 11 : [3, 8, 0, 1, 2, 7], 72
Exploitation
Ant 1 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000516551921389
p = 0.000966183574879
p = 0.000644122383253
Ant 12 : [1, 0, 8, 3, 4, 7], 62
Exploration
avg = 0.000412838480158
p = 0.000966183574879
Ant 13 : [4, 7, 3, 8, 0, 1], 67
Exploration
avg = 0.000521830040388
p = 0.000966183574879
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85

Exploitation
Ant 14 : [5, 4, 7, 3, 8, 0], 69
Exploration
avg = 0.000341228828053
p = 0.000805152979066
Ant 15 : [5, 6, 4, 7, 3, 8], 73
Exploration
avg = 0.000353765982159
p = 0.000536763285024
p = 0.000644122383253
Ant 16 : [1, 0, 8, 3, 7, 4], 67
Exploration
avg = 0.000516551921389
p = 0.000966183574879
p = 0.000644122383253
Ant 17 : [8, 0, 1, 3, 4, 7], 68
Exploitation
Ant 18 : [7, 4, 6, 8, 0, 1], 82
Exploitation
Ant 3 : [4, 7, 2, 3, 8, 1, 0], 92
Exploitation
Ant 19 : [1, 8, 3, 4, 6, 5], 72
Exploration
avg = 0.000249021358608
p = 0.000395256916591
Ant 4 : [2, 7, 4, 6, 8, 3, 5], 114
Exploitation
Ant 0 : [4, 7, 3, 8, 0, 1, 5, 6], 109
Exploration
avg = 0.000521830040388
p = 0.000966183574879
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000385653379433
p = 0.000805152979066
Ant 6 : [6, 5, 4, 7, 2, 3, 8], 91
Exploration
avg = 0.000521830040388
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000292766881204
p = 0.000644122383253
Ant 8 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000448880085817
p = 0.00053623183574
Ant 9 : [7, 4, 6, 8, 0, 1, 3], 100
Exploitation
Ant 10 : [2, 7, 4, 6, 8, 3, 5], 114
Exploration
avg = 0.000292766881204
p = 0.000644122383253
Ant 11 : [3, 8, 0, 1, 2, 7, 4], 87

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Exploitation
Ant 1 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploration
avg = 0.000256980515128
p = 0.000536763285024
Ant 12 : [1, 0, 8, 3, 4, 7, 2], 80
Exploitation
Ant 13 : [4, 7, 3, 8, 0, 1, 2], 89
Exploration
avg = 0.000628017861234
p = 0.000966183574879
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000447036097872
p = 0.000966183574879
Ant 14 : [5, 4, 7, 3, 8, 0, 1], 79
Exploitation
Ant 15 : [5, 6, 4, 7, 3, 8, 0], 83
Exploitation
Ant 16 : [1, 0, 8, 3, 7, 4, 6], 77
Exploration
avg = 0.000256982286464
p = 0.000536768599034
Ant 17 : [8, 0, 1, 3, 4, 7, 2], 86
Exploitation
Ant 18 : [7, 4, 6, 8, 0, 1, 3], 100
Exploration
avg = 0.000197659099081
p = 0.000310245627016
Ant 3 : [4, 7, 2, 3, 8, 1, 0, 5], 120
Exploration
avg = 0.000267250115636
p = 0.000310248418777
p = 0.00037807183327
Ant 19 : [1, 8, 3, 4, 6, 5, 2], 95
Exploration
avg = 0.000227108692666
p = 0.000310248418777
Ant 4 : [2, 7, 4, 6, 8, 3, 5, 0], 142
Exploitation
Ant 0 : [4, 7, 3, 8, 0, 1, 5, 6, 2], 159
Update called by 0Exploitation

Ant thread 0 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploitation
Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0], 101
Exploration
avg = 0.000628017861234
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploration

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avg = 0.000323562567194
p = 0.000439169960474
Ant 9 : [7, 4, 6, 8, 0, 1, 3, 5], 122
Exploration
avg = 0.000244343178788
p = 0.00034471739102
Ant 10 : [2, 7, 4, 6, 8, 3, 5, 0], 142
Exploitation
Ant 11 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploitation
Ant 1 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
Update called by 1Exploitation

Ant thread 1 terminating.Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5], 103

Exploration
avg = 0.000296694311877
p = 0.000419655920602
Ant 13 : [4, 7, 3, 8, 0, 1, 2, 5], 112
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploitation

Ant thread 2 terminating.Ant 14 : [5, 4, 7, 3, 8, 0, 1, 2], 101

Exploration
avg = 0.000628017861234
p = 0.000966183574879
Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1], 93
Exploitation
Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 17 : [8, 0, 1, 3, 4, 7, 2, 5], 109
Exploitation
Ant 18 : [7, 4, 6, 8, 0, 1, 3, 5], 122
Exploitation
Ant 3 : [4, 7, 2, 3, 8, 1, 0, 5, 6], 136
Update called by 3Exploitation

Ant thread 3 terminating.Ant 19 : [1, 8, 3, 4, 6, 5, 2, 7], 113

Exploration
avg = 0.000966183574879
Ant 4 : [2, 7, 4, 6, 8, 3, 5, 0, 1], 152
Update called by 4Exploitation

Ant thread 4 terminating.Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000966183574879

Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111
Update called by 6Exploration

Ant thread 6 terminating.avg = 0.000439174352218

Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
Update called by 8Exploration

Ant thread 8 terminating.avg = 0.000419659735346

Ant 9 : [7, 4, 6, 8, 0, 1, 3, 5, 2], 145
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 8, 3, 5, 0, 1], 152
ExplorationUpdate called by 10

avg = 0.0006038647343Ant thread 10 terminating.

Ant 11 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
ExplorationUpdate called by 11

avg = 0.000603864673913Ant thread 11 terminating.

Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5, 6], 119
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000603864733696

Ant 13 : [4, 7, 3, 8, 0, 1, 2, 5, 6], 128
Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [5, 4, 7, 3, 8, 0, 1, 2, 6], 151
Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000439174352218

Ant 15 : [5, 6, 4, 7, 3, 8, 0, 1, 2], 115
Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [8, 0, 1, 3, 4, 7, 2, 5, 6], 125
Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 8, 0, 1, 3, 5, 2], 145
Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 8, 3, 4, 6, 5, 2, 7, 0], 156

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 10, 151

Ant thread 19 terminating.iter_counter = 11

starting ant = 0

Explorationstarting ant = 1

avg = 0.000307584670635starting ant = 2

p = 0.000869565217391starting ant = 3

p = 0.000579710144928starting ant = 4

Ant 0 : [4, 7], 15starting ant = 5

Exploitationstarting ant = 6

Ant 1 : [3, 8], 12starting ant = 7

Exploitationstarting ant = 8

Ant 2 : [7, 4], 15starting ant = 9

Exploitationstarting ant = 10

Ant 3 : [4, 6], 10starting ant = 11

Exploitationstarting ant = 12

Ant 4 : [2, 7], 18starting ant = 13

Exploitationstarting ant = 14

Ant 0 : [4, 7, 2], 33starting ant = 15

Exploitationstarting ant = 16

Ant 5 : [7, 4], 15starting ant = 17

Explorationstarting ant = 18

avg = 0.000294100842839starting ant = 19

p = 0.000868695651384

p = 0.00054347826087

Ant 6 : [6, 5], 16

Exploitation

Ant 1 : [3, 8, 0], 22

Exploration

avg = 0.000288345052187

p = 0.000536231884053

p = 0.000434782608257
p = 0.000644115942029
Ant 7 : [7, 4], 15
Exploitation
Ant 8 : [3, 8], 12
Exploration
avg = 0.000282374199152
p = 0.000965217391304
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000288345849289
p = 0.000536231884053
p = 0.000434782608257
p = 0.000644122318841
Ant 9 : [7, 4], 15
Exploration
avg = 0.000299747010356
p = 0.000355724387916
p = 0.000483086956517
p = 0.000378071795498
p = 0.000536231884058
Ant 10 : [2, 7], 18
Exploration
avg = 0.00022055624286
p = 0.000603260869565
p = 0.000235017626087
Ant 3 : [4, 6, 8], 47
Exploration
avg = 0.000349807135716
p = 0.000579710034309
p = 0.000395256916601
p = 0.000434347826083
p = 0.000805144927536
Ant 11 : [3, 8], 12
Exploitation
Ant 12 : [1, 0], 10
Exploration
avg = 0.000252933567718
p = 0.000434782608257
p = 0.000644122382609
Ant 4 : [2, 7, 4], 33
Exploration
avg = 0.000327631772084
p = 0.000966173913043
p = 0.00064347826087
Ant 13 : [4, 7], 15
Exploitation
Ant 14 : [5, 4], 12
Exploitation
Ant 0 : [4, 7, 2, 3], 51
Exploitation
Ant 15 : [5, 4], 12
Exploration
avg = 0.000362067356909

p = 0.000965217390435
p = 0.000395256916996
p = 0.000483091739126
p = 0.000457208237567
Ant 16 : [1, 8], 19
Exploitation
Ant 5 : [7, 4, 6], 25
Exploration
avg = 0.000326420152531
p = 0.000965217391304
p = 0.000457208237574
p = 0.000724637681152
Ant 17 : [8, 3], 12
Exploration
avg = 0.00028834585734
p = 0.000536231884053
p = 0.000434782608257
p = 0.000644122383246
Ant 18 : [7, 4], 15
Exploration
avg = 0.000368416899295
p = 0.000965217390435
p = 0.000395256916996
p = 0.000483091739126
p = 0.000508004576655
Ant 19 : [1, 8], 19
Exploitation
Ant 6 : [6, 5, 4], 28
Exploitation
Ant 1 : [3, 8, 0, 1], 32
Exploitation
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploitation
Ant 2 : [7, 4, 6, 5], 41
Exploration
avg = 0.000282512225239
p = 0.000966183573913
Ant 9 : [7, 4, 6], 25
Exploration
avg = 0.00025293356781
p = 0.000434782608257
p = 0.000644122383253
Ant 10 : [2, 7, 4], 33
Exploration
avg = 0.000421549846146
p = 0.000966173913043
p = 0.000457208237574
p = 0.000804347826087
Ant 3 : [4, 6, 8, 3], 59
Exploration
avg = 0.000269668580119
p = 0.000966173913043

p = 0.000457208237574
Ant 11 : [3, 8, 1], 31
Exploration
avg = 0.000299363750672
p = 0.000391300434427
p = 0.000310245626792
p = 0.000869548694948
Ant 12 : [1, 0, 8], 20
Exploration
avg = 0.000308002251288
p = 0.00096618357487
Ant 4 : [2, 7, 4, 6], 43
Exploitation
Ant 13 : [4, 7, 2], 33
Exploration
avg = 0.00033442314784
p = 0.000966183574879
p = 0.000644115942029
Ant 14 : [5, 4, 7], 27
Exploration
avg = 0.000319449507965
p = 0.000395256916601
p = 0.000805152898551
Ant 0 : [4, 7, 2, 3, 8], 63
Exploitation
Ant 15 : [5, 4, 6], 22
Exploitation
Ant 16 : [1, 8, 0], 29
Exploitation
Ant 5 : [7, 4, 6, 5], 41
Exploration
avg = 0.000284758879741
p = 0.000579710034309
p = 0.000395256916601
p = 0.000434347826083
Ant 17 : [8, 3, 7], 32
Exploration
avg = 0.000282512225377
p = 0.000966183574879
Ant 18 : [7, 4, 6], 25
Exploration
avg = 0.000319375188002
p = 0.000966183478261
p = 0.000805144927536
Ant 19 : [1, 8, 3], 31
Exploration
avg = 0.000229130806136
p = 0.000276746745443
p = 0.000644122318841
Ant 6 : [6, 5, 4, 7], 43
Exploitation
Ant 1 : [3, 8, 0, 1, 2], 54
Exploitation
Ant 7 : [7, 4, 6, 5], 41

Exploitation
Ant 8 : [3, 8, 0, 1], 32
Exploitation
Ant 2 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000227708328109
p = 0.000603864733696
p = 0.000260869565215
Ant 9 : [7, 4, 6, 8], 62
Exploitation
Ant 10 : [2, 7, 4, 6], 43
Exploration
avg = 0.000276329472852
p = 0.000395256916601
p = 0.000482604347826
Ant 3 : [4, 6, 8, 3, 7], 79
Exploitation
Ant 11 : [3, 8, 1, 0], 41
Exploration
avg = 0.000211575134794
p = 0.000805152898551
Ant 12 : [1, 0, 8, 3], 32
Exploration
avg = 0.000238585178688
p = 0.000603864733696
p = 0.000261128084606
Ant 4 : [2, 7, 4, 6, 8], 80
Exploitation
Ant 13 : [4, 7, 2, 3], 51
Exploitation
Ant 14 : [5, 4, 7, 2], 45
Exploration
avg = 0.00042138890517
p = 0.000966183478261
p = 0.000508004576655
Ant 0 : [4, 7, 2, 3, 8, 1], 82
Exploration
avg = 0.000161124312362
p = 0.000171156479739
p = 0.000173582594605
p = 0.000204099534627
p = 0.0002611306698
Ant 15 : [5, 4, 6, 8], 59
Exploitation
Ant 16 : [1, 8, 0, 4], 49
Exploration
avg = 0.000275450375072
p = 0.000310555872668
p = 0.00037807183327
p = 0.00043873517747
Ant 5 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 17 : [8, 3, 7, 4], 47
Exploitation

Ant 18 : [7, 4, 6, 5], 41
Exploitation
Ant 19 : [1, 8, 3, 4], 46
Exploration
avg = 0.000290484151225
p = 0.000536768599034
p = 0.000434782608257
Ant 6 : [6, 5, 4, 7, 3], 63
Exploitation
Ant 1 : [3, 8, 0, 1, 2, 7], 72
Exploration
avg = 0.000275537331672
p = 0.000310555872668
p = 0.00037807183327
p = 0.00043916996047
Ant 7 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000206899949803
p = 0.000438735177866
p = 0.00033411070207
Ant 8 : [3, 8, 0, 1, 5], 58
Exploration
avg = 0.000327234769523
p = 0.000805152978261
Ant 2 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.00049646671454
p = 0.000966183478261
p = 0.000508512540046
p = 0.000805152978261
Ant 9 : [7, 4, 6, 8, 3], 74
Exploration
avg = 0.000238585701016
p = 0.000603864734293
p = 0.000261130695652
Ant 10 : [2, 7, 4, 6, 8], 80
Exploitation
Ant 3 : [4, 6, 8, 3, 7, 2], 97
Exploitation
Ant 11 : [3, 8, 1, 0, 4], 61
Exploitation
Ant 12 : [1, 0, 8, 3, 4], 47
Exploitation
Ant 4 : [2, 7, 4, 6, 8, 0], 90
Exploitation
Ant 13 : [4, 7, 2, 3, 8], 63
Exploration
avg = 0.000281555332283
p = 0.000355724387916
p = 0.000536763284541
Ant 14 : [5, 4, 7, 2, 3], 63
Exploitation
Ant 0 : [4, 7, 2, 3, 8, 1, 0], 92
Exploration

avg = 0.000492220254228
p = 0.000966183573913
p = 0.000508512540046
p = 0.000805152979058
Ant 15 : [5, 4, 6, 8, 3], 71
Exploration
avg = 0.000459472851523
p = 0.000966183574879
p = 0.000644122382609
Ant 16 : [1, 8, 0, 4, 7], 64
Exploration
avg = 0.000327234769724
p = 0.000805152979066
Ant 5 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000325832133173
p = 0.000966183574879
Ant 17 : [8, 3, 7, 4, 6], 57
Exploitation
Ant 18 : [7, 4, 6, 5, 3], 63
Exploration
avg = 0.000437812240735
p = 0.000966183574879
p = 0.000644122383246
Ant 19 : [1, 8, 3, 4, 7], 61
Exploitation
Ant 6 : [6, 5, 4, 7, 3, 8], 75
Exploration
avg = 0.000284960939192
p = 0.000644122383253
Ant 1 : [3, 8, 0, 1, 2, 7, 4], 87
Exploration
avg = 0.000327234769724
p = 0.000805152979066
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000457197519515
p = 0.000805152898543
p = 0.00054347826087
Ant 8 : [3, 8, 0, 1, 5, 6], 74
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 9 : [7, 4, 6, 8, 3, 5], 96
Exploitation
Ant 10 : [2, 7, 4, 6, 8, 0], 90
Exploitation
Ant 3 : [4, 6, 8, 3, 7, 2, 5], 120
Exploitation
Ant 11 : [3, 8, 1, 0, 4, 6], 71
Exploration
avg = 0.000505154378204
p = 0.000966183574879
p = 0.000644122383253

Ant 12 : [1, 0, 8, 3, 4, 7], 62
Exploitation
Ant 4 : [2, 7, 4, 6, 8, 0, 1], 100
Exploration
avg = 0.000421515920172
p = 0.000966183574879
p = 0.000508512540046
Ant 13 : [4, 7, 2, 3, 8, 1], 82
Exploitation
Ant 14 : [5, 4, 7, 2, 3, 8], 75
Exploitation
Ant 0 : [4, 7, 2, 3, 8, 1, 0, 5], 120
Exploitation
Ant 15 : [5, 4, 6, 8, 3, 7], 91
Exploration
avg = 0.000307534445536
p = 0.000536768652174
p = 0.000482608695648
Ant 16 : [1, 8, 0, 4, 7, 3], 84
Exploration
avg = 0.00051895628288
p = 0.000966183574879
Ant 5 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000256292280667
p = 0.000603864734293
Ant 17 : [8, 3, 7, 4, 6, 5], 73
Exploration
avg = 0.000327234769724
p = 0.000805152979066
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000237264514998
p = 0.000536768652174
Ant 19 : [1, 8, 3, 4, 7, 2], 79
Exploitation
Ant 6 : [6, 5, 4, 7, 3, 8, 0], 85
Exploration
avg = 0.000623461529831
p = 0.000966183574879
Ant 1 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploration
avg = 0.000518956282881
p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 0, 1, 5, 6, 4], 84
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000272733258613
p = 0.000310555872668
p = 0.00037807183327
Ant 9 : [7, 4, 6, 8, 3, 5, 2], 119

Exploitation
Ant 10 : [2, 7, 4, 6, 8, 0, 1], 100
Exploration
avg = 0.000220063971284
p = 0.000310555872668
Ant 3 : [4, 6, 8, 3, 7, 2, 5, 0], 148
Exploration
avg = 0.000327182287844
p = 0.000603864734299
Ant 11 : [3, 8, 1, 0, 4, 6, 5], 87
Exploitation
Ant 12 : [1, 0, 8, 3, 4, 7, 2], 80
Exploitation
Ant 4 : [2, 7, 4, 6, 8, 0, 1, 3], 118
Exploration
avg = 0.000476156068528
p = 0.000966183478261
Ant 13 : [4, 7, 2, 3, 8, 1, 0], 92
Exploration
avg = 0.000521917279424
p = 0.000966183574879
Ant 14 : [5, 4, 7, 2, 3, 8, 0], 85
Exploitation
Ant 0 : [4, 7, 2, 3, 8, 1, 0, 5, 6], 136
Update called by 0Exploitation

Ant thread 0 terminating.Ant 15 : [5, 4, 6, 8, 3, 7, 2], 109

Exploitation
Ant 16 : [1, 8, 0, 4, 7, 3, 5], 106
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploration
avg = 0.000297984090268
p = 0.000344720465559
p = 0.000419659735346
Ant 17 : [8, 3, 7, 4, 6, 5, 2], 96
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.000284260356615
p = 0.000419659734968
Ant 19 : [1, 8, 3, 4, 7, 2, 5], 102
Exploitation
Ant 6 : [6, 5, 4, 7, 3, 8, 0, 1], 95
Exploration
avg = 0.0006038647343
Ant 1 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000613525253855

p = 0.000966183574879
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95

Exploration
avg = 0.000386847226576
p = 0.000644122383253
Ant 8 : [3, 8, 0, 1, 5, 6, 4, 7], 99
Exploitation
Ant 2 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.00030755410771

p = 0.000355724387916
Ant 9 : [7, 4, 6, 8, 3, 5, 2, 1], 141
Exploration
avg = 0.000453732983592
p = 0.000536231883575
Ant 10 : [2, 7, 4, 6, 8, 0, 1, 3], 118
Exploration
avg = 0.000966183574879
Ant 3 : [4, 6, 8, 3, 7, 2, 5, 0, 1], 158
Update called by 3Exploitation

Ant thread 3 terminating.Ant 11 : [3, 8, 1, 0, 4, 6, 5, 2], 110

Exploration
avg = 0.000296906560867
p = 0.000420075614363
Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5], 103
Exploration
avg = 0.000439169960474
Ant 4 : [2, 7, 4, 6, 8, 0, 1, 3, 5], 140
Update called by 4Exploitation

Ant thread 4 terminating.Ant 13 : [4, 7, 2, 3, 8, 1, 0, 5], 120

Exploration
avg = 0.000521374444455
p = 0.000966183574879
Ant 14 : [5, 4, 7, 2, 3, 8, 0, 1], 95
Exploration
avg = 0.00034886184004
p = 0.000438339852575
Ant 15 : [5, 4, 6, 8, 3, 7, 2, 1], 131
Exploitation
Ant 16 : [1, 8, 0, 4, 7, 3, 5, 6], 122
Exploitation
Ant 5 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 5Exploitation

Ant thread 5 terminating.Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1], 118

Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 19 : [1, 8, 3, 4, 7, 2, 5, 6], 118

Exploration
avg = 0.0004391743083
Ant 6 : [6, 5, 4, 7, 3, 8, 0, 1, 2], 117
Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 1, 5, 6, 4, 7, 2], 117
Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 8, 3, 5, 2, 1, 0], 151
Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 8, 0, 1, 3, 5], 140
Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [3, 8, 1, 0, 4, 6, 5, 2, 7], 128
Update called by 11Exploration

Ant thread 11 terminating.avg = 0.000603864733696

Ant 12 : [1, 0, 8, 3, 4, 7, 2, 5, 6], 119
Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000603864734293

Ant 13 : [4, 7, 2, 3, 8, 1, 0, 5, 6], 136
Update called by 13Exploration

Ant thread 13 terminating.avg = 9.10506437133e-05

Ant 14 : [5, 4, 7, 2, 3, 8, 0, 1, 6], 132
Update called by 14Exploitation

Ant thread 14 terminating.Ant 15 : [5, 4, 6, 8, 3, 7, 2, 1, 0], 141
Update called by 15Exploration

Ant thread 15 terminating.avg = 0.000173582594605

Ant 16 : [1, 8, 0, 4, 7, 3, 5, 6, 2], 172
Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [8, 3, 7, 4, 6, 5, 2, 1, 0], 128
Update called by 17Exploration

Ant thread 17 terminating.avg = 0.000439174352213

Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117
Update called by 18Exploration

Ant thread 18 terminating.avg = 7.65653140316e-05

Ant 19 : [1, 8, 3, 4, 7, 2, 5, 6, 0], 162
Update called by 19
Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 11, 155
Ant thread 19 terminating.iter_counter = 12

starting ant = 0
Exploitationstarting ant = 1

Ant 0 : [4, 6], 10starting ant = 2

Explorationstarting ant = 3

avg = 0.000332497394185starting ant = 4

p = 0.000579704347816starting ant = 5

p = 0.000395256916601starting ant = 6

p = 0.000434782564826starting ant = 7

p = 0.000724637681159starting ant = 8

Ant 1 : [3, 8], 12starting ant = 9

Explorationstarting ant = 10

avg = 0.00022264198164starting ant = 11

p = 0.00054347826087starting ant = 12

p = 0.00023501762632starting ant = 13

Ant 0 : [4, 6, 8], 47starting ant = 14

Explorationstarting ant = 15

avg = 0.00026500589726starting ant = 16

p = 0.00048309178744starting ant = 17

p = 0.00043477826087starting ant = 18

p = 0.000579710144928starting ant = 19

Ant 2 : [7, 4], 15
Exploitation
Ant 3 : [4, 6], 10
Exploration

avg = 0.000289985889598
p = 0.000395256841891
p = 0.000483091739126
p = 0.000378071795841
p = 0.000483091786957
Ant 4 : [2, 7], 18
Exploration
avg = 0.000272976911753
p = 0.00048309178744
p = 0.00043477826087
p = 0.00064347826087
Ant 5 : [7, 4], 15
Exploration
avg = 0.000306629204558
p = 0.00086868782608
p = 0.00054347826087
Ant 6 : [6, 5], 16
Exploration
avg = 0.000273056621898
p = 0.00048309178744
p = 0.00043477826087
p = 0.000644115942029
Ant 7 : [7, 4], 15
Exploitation
Ant 8 : [3, 8], 12
Exploration
avg = 0.000249299884899
p = 0.000869565217391
p = 0.000457665857712
Ant 1 : [3, 8, 1], 31
Exploitation
Ant 9 : [7, 4], 15
Exploration
avg = 0.000296628401736
p = 0.000395256841891
p = 0.000483091739126
p = 0.000378071795841
p = 0.000536231884053
Ant 10 : [2, 7], 18
Exploration
avg = 0.000342560799982
p = 0.000579704347816
p = 0.000395256916601
p = 0.000434782564826
p = 0.000805144927536
Ant 11 : [3, 8], 12
Exploration
avg = 0.00036583885761
p = 0.000869565217391
p = 0.000395256916996
p = 0.000483086956517
p = 0.000457661286041
Ant 12 : [1, 8], 19
Exploration

avg = 0.000307018232557
p = 0.000966173913043
p = 0.000579710144928
Ant 13 : [4, 7], 15
Exploitation
Ant 0 : [4, 6, 8, 0], 57
Exploitation
Ant 14 : [5, 4], 12
Exploitation
Ant 15 : [5, 4], 12
Exploitation
Ant 16 : [1, 0], 10
Exploitation
Ant 17 : [8, 0], 10
Exploration
avg = 0.00027305742697
p = 0.00048309178744
p = 0.00043477826087
p = 0.000644122382609
Ant 18 : [7, 4], 15
Exploration
avg = 0.000384088856986
p = 0.000965217391304
p = 0.000395256916996
p = 0.000483086956517
p = 0.00050800910714
Ant 19 : [1, 8], 19
Exploitation
Ant 2 : [7, 4, 6], 25
Exploration
avg = 0.000234875488439
p = 0.000603260869565
p = 0.000260869565217
Ant 3 : [4, 6, 8], 47
Exploitation
Ant 4 : [2, 7, 4], 33
Exploitation
Ant 5 : [7, 4, 6], 25
Exploitation
Ant 6 : [6, 5, 4], 28
Exploitation
Ant 7 : [7, 4, 6], 25
Exploitation
Ant 8 : [3, 8, 0], 22
Exploration
avg = 0.000346935798705
p = 0.000965217391304
p = 0.000395256916996
Ant 1 : [3, 8, 1, 2], 53
Exploration
avg = 0.000268063625336
p = 0.00096618357487
Ant 9 : [7, 4, 6], 25
Exploration

avg = 0.000243052518424
p = 0.00043477826087
p = 0.000644122383253
Ant 10 : [2, 7, 4], 33
Exploration
avg = 0.000270294392901
p = 0.000966183478261
p = 0.000508009152856
Ant 11 : [3, 8, 1], 31
Exploration
avg = 0.000301241325516
p = 0.000966183478261
p = 0.000724637681159
Ant 12 : [1, 8, 3], 31
Exploitation
Ant 13 : [4, 7, 2], 33
Exploration
avg = 0.000316643731173
p = 0.000869565217391
Ant 0 : [4, 6, 8, 0, 1], 67
Exploration
avg = 0.000323894014561
p = 0.000966183574879
p = 0.00064347826087
Ant 14 : [5, 4, 7], 27
Exploration
avg = 0.000323985111869
p = 0.000966183574879
p = 0.000644115942029
Ant 15 : [5, 4, 7], 27
Exploration
avg = 0.000298004581721
p = 0.000434774347474
p = 0.000310555872417
p = 0.000868695503472
Ant 16 : [1, 0, 8], 20
Exploitation
Ant 17 : [8, 0, 1], 20
Exploration
avg = 0.000268063625337
p = 0.000966183574879
Ant 18 : [7, 4, 6], 25
Exploitation
Ant 19 : [1, 8, 0], 29
Exploration
avg = 0.00024344955955
p = 0.000603260869565
p = 0.000261128084606
Ant 2 : [7, 4, 6, 8], 62
Exploration
avg = 0.000425076029327
p = 0.000966183573913
p = 0.000508512585808
p = 0.000804347826087

Ant 3 : [4, 6, 8, 3], 59
Exploration
avg = 0.000293305085742
p = 0.000966183574879
Ant 4 : [2, 7, 4, 6], 43
Exploration
avg = 0.000243449990416
p = 0.000603260869565
p = 0.0002611306698
Ant 5 : [7, 4, 6, 8], 62
Exploration
avg = 0.000216953097503
p = 0.000249072070899
p = 0.000644122318841
Ant 6 : [6, 5, 4, 7], 43
Exploitation
Ant 7 : [7, 4, 6, 5], 41
Exploitation
Ant 8 : [3, 8, 0, 1], 32
Exploration
avg = 0.000284251829033
p = 0.000378071795841
p = 0.000536763285024
Ant 1 : [3, 8, 1, 2, 7], 71
Exploration
avg = 0.000243549632406
p = 0.000603858695652
p = 0.000261130695652
Ant 9 : [7, 4, 6, 8], 62
Exploration
avg = 0.000293305085742
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6], 43
Exploitation
Ant 11 : [3, 8, 1, 0], 41
Exploration
avg = 0.000291363947899
p = 0.000579704347816
p = 0.000395256916601
p = 0.000434782564826
Ant 12 : [1, 8, 3, 7], 51
Exploitation
Ant 13 : [4, 7, 2, 3], 51
Exploration
avg = 0.000333419012893
p = 0.000438735177866
p = 0.000483086956517
p = 0.000334110675248
Ant 0 : [4, 6, 8, 0, 1, 5], 93
Exploitation
Ant 14 : [5, 4, 7, 2], 45
Exploration
avg = 0.00025035502565
p = 0.000536763285024

p = 0.00043477826087
Ant 15 : [5, 4, 7, 3], 47
Exploration
avg = 0.000203835507788
p = 0.000805144927536
Ant 16 : [1, 0, 8, 3], 32
Exploration
avg = 0.000280014337735
p = 0.000438735177866
p = 0.000483086956517
p = 0.000371234083341
Ant 17 : [8, 0, 1, 5], 46
Exploitation
Ant 18 : [7, 4, 6, 5], 41
Exploration
avg = 0.000202889428096
p = 0.000234780239547
p = 0.000434774347474
p = 0.000310555872417
Ant 19 : [1, 8, 0, 5], 57
Exploitation
Ant 2 : [7, 4, 6, 8, 0], 72
Exploitation
Ant 3 : [4, 6, 8, 3, 7], 79
Exploration
avg = 0.000257513523312
p = 0.000603864673913
p = 0.000261130695911
Ant 4 : [2, 7, 4, 6, 8], 80
Exploitation
Ant 5 : [7, 4, 6, 8, 0], 72
Exploitation
Ant 6 : [6, 5, 4, 7, 2], 61
Exploration
avg = 0.00026169544484
p = 0.000310248419003
p = 0.000378071795841
p = 0.000395256916601
Ant 7 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 8 : [3, 8, 0, 1, 2], 54
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4], 86
Exploitation
Ant 9 : [7, 4, 6, 8, 0], 72
Exploitation
Ant 10 : [2, 7, 4, 6, 5], 59
Exploration
avg = 0.000230739029533
p = 0.000234780239547
p = 0.000434774347474
p = 0.000344720465556
Ant 11 : [3, 8, 1, 0, 5], 69
Exploitation

Ant 12 : [1, 8, 3, 7, 4], 66
Exploitation
Ant 13 : [4, 7, 2, 3, 8], 63
Exploitation
Ant 0 : [4, 6, 8, 0, 1, 5, 3], 115
Exploitation
Ant 14 : [5, 4, 7, 2, 3], 63
Exploitation
Ant 15 : [5, 4, 7, 3, 8], 59
Exploration
avg = 0.000339736413007
p = 0.000579704347816
p = 0.000395256916601
p = 0.000483086956517
Ant 16 : [1, 0, 8, 3, 7], 52
Exploration
avg = 0.000451550258515
p = 0.000805152898551
p = 0.00054347826087
Ant 17 : [8, 0, 1, 5, 6], 62
Exploration
avg = 0.000270478053615
p = 0.000310248419003
p = 0.000378071795841
p = 0.000439169960474
Ant 18 : [7, 4, 6, 5, 3], 63
Exploitation
Ant 19 : [1, 8, 0, 5, 4], 69
Exploitation
Ant 2 : [7, 4, 6, 8, 0, 1], 82
Exploitation
Ant 3 : [4, 6, 8, 3, 7, 2], 97
Exploration
avg = 0.000597033572271
p = 0.000966183574879
p = 0.000805152898551
Ant 4 : [2, 7, 4, 6, 8, 3], 92
Exploration
avg = 0.00041095798475
p = 0.000966183573913
Ant 5 : [7, 4, 6, 8, 0, 1], 82
Exploitation
Ant 6 : [6, 5, 4, 7, 2, 3], 79
Exploration
avg = 0.000314640117227
p = 0.000805152979058
Ant 7 : [7, 4, 6, 5, 3, 8], 75
Exploration
avg = 0.000296954753605
p = 0.000378071795841
p = 0.000536768599034
Ant 8 : [3, 8, 0, 1, 2, 7], 72
Exploration
avg = 0.000456816144322

p = 0.000966183574879
Ant 1 : [3, 8, 1, 2, 7, 4, 6], 96
Exploration
avg = 0.000410957984989
p = 0.00096618357487
Ant 9 : [7, 4, 6, 8, 0, 1], 82
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3], 81
Exploration
avg = 0.000469591005126
p = 0.000805152978261
p = 0.000603260869565
Ant 11 : [3, 8, 1, 0, 5, 6], 85
Exploitation
Ant 12 : [1, 8, 3, 7, 4, 6], 76
Exploitation
Ant 13 : [4, 7, 2, 3, 8, 0], 73
Exploitation
Ant 0 : [4, 6, 8, 0, 1, 5, 3, 7], 135
Exploitation
Ant 14 : [5, 4, 7, 2, 3, 8], 75
Exploitation
Ant 15 : [5, 4, 7, 3, 8, 0], 69
Exploration
avg = 0.000342643856579
p = 0.000536768652174
p = 0.000644122383253
Ant 16 : [1, 0, 8, 3, 7, 4], 67
Exploitation
Ant 17 : [8, 0, 1, 5, 6, 4], 72
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8], 75
Exploitation
Ant 19 : [1, 8, 0, 5, 4, 6], 79
Exploration
avg = 0.000431287411471
p = 0.000439169960474
p = 0.000483086956517
Ant 2 : [7, 4, 6, 8, 0, 1, 3], 100
Exploitation
Ant 3 : [4, 6, 8, 3, 7, 2, 1], 119
Exploitation
Ant 4 : [2, 7, 4, 6, 8, 3, 5], 114
Exploration
avg = 0.000449002371215
p = 0.000536231835749
Ant 5 : [7, 4, 6, 8, 0, 1, 3], 100
Exploration
avg = 0.000363372259348
p = 0.000805152979066
Ant 6 : [6, 5, 4, 7, 2, 3, 8], 91
Exploration
avg = 0.00051621568312
p = 0.000966183574879

Ant 7 : [7, 4, 6, 5, 3, 8, 0], 85
Exploitation
Ant 8 : [3, 8, 0, 1, 2, 7, 4], 87
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5], 112
Exploitation
Ant 9 : [7, 4, 6, 8, 0, 1, 3], 100
Exploitation
Ant 10 : [2, 7, 4, 6, 5, 3, 8], 93
Exploration
avg = 0.000440878118317
p = 0.000965208617391
Ant 11 : [3, 8, 1, 0, 5, 6, 4], 95
Exploitation
Ant 12 : [1, 8, 3, 7, 4, 6, 5], 92
Exploration
avg = 0.000460051489665
p = 0.000966183574879
Ant 13 : [4, 7, 2, 3, 8, 0, 1], 83
Exploitation
Ant 0 : [4, 6, 8, 0, 1, 5, 3, 7, 2], 153
Update called by 0Exploration

Ant thread 0 terminating.avg = 0.00051888058001

p = 0.000966183574879
Ant 14 : [5, 4, 7, 2, 3, 8, 0], 85
Exploitation
Ant 15 : [5, 4, 7, 3, 8, 0, 1], 79
Exploration
avg = 0.000445154658031
p = 0.000966183574879
Ant 16 : [1, 0, 8, 3, 7, 4, 6], 77
Exploration
avg = 0.000336603105473
p = 0.000644122382609
Ant 17 : [8, 0, 1, 5, 6, 4, 7], 87
Exploitation
Ant 18 : [7, 4, 6, 5, 3, 8, 0], 85
Exploration
avg = 0.00014320529693
p = 0.000173736156395
p = 0.000183689581164
Ant 19 : [1, 8, 0, 5, 4, 6, 7], 110
Exploitation
Ant 2 : [7, 4, 6, 8, 0, 1, 3, 5], 122
Exploration
avg = 0.000668889615233
p = 0.000966173913043
Ant 3 : [4, 6, 8, 3, 7, 2, 1, 0], 129
Exploitation
Ant 4 : [2, 7, 4, 6, 8, 3, 5, 0], 142
Exploitation
Ant 5 : [7, 4, 6, 8, 0, 1, 3, 5], 122

Exploitation
Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0], 101
Exploitation
Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6], 97
Exploitation
Ant 1 : [3, 8, 1, 2, 7, 4, 6, 5, 0], 140
Update called by 1Exploration

Ant thread 1 terminating.avg = 0.000303808999585

p = 0.0004391743083
Ant 9 : [7, 4, 6, 8, 0, 1, 3, 5], 122
Exploration
avg = 0.000737348080343
p = 0.000966183574879
Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0], 103
Exploitation
Ant 11 : [3, 8, 1, 0, 5, 6, 4, 7], 110
Exploitation
Ant 12 : [1, 8, 3, 7, 4, 6, 5, 2], 115
Exploration
avg = 0.000302546111637
p = 0.000371605317422
Ant 13 : [4, 7, 2, 3, 8, 0, 1, 5], 109
Exploitation
Ant 14 : [5, 4, 7, 2, 3, 8, 0, 1], 95
Exploration
avg = 0.000336328433163
p = 0.000439169960474
Ant 15 : [5, 4, 7, 3, 8, 0, 1, 2], 101
Exploitation
Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5], 93
Exploitation
Ant 17 : [8, 0, 1, 5, 6, 4, 7, 2], 105
Exploration
avg = 0.000600481907213
p = 0.000966183574879
Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1], 95
Exploitation
Ant 19 : [1, 8, 0, 5, 4, 6, 7, 2], 128
Exploitation
Ant 2 : [7, 4, 6, 8, 0, 1, 3, 5, 2], 145
Update called by 2Exploration

Ant thread 2 terminating.avg = 0.000345062111488

Ant 3 : [4, 6, 8, 3, 7, 2, 1, 0, 5], 157
ExploitationUpdate called by 3

Ant 4 : [2, 7, 4, 6, 8, 3, 5, 0, 1], 152Ant thread 3 terminating.

Update called by 4Exploration

Ant thread 4 terminating.avg = 0.000420075614363

Ant 5 : [7, 4, 6, 8, 0, 1, 3, 5, 2], 145

Update called by 5Exploration

Ant thread 5 terminating.avg = 0.000966183574879

Ant 6 : [6, 5, 4, 7, 2, 3, 8, 0, 1], 111

Update called by 6Exploitation

Ant thread 6 terminating.Ant 7 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 7Exploitation

Ant thread 7 terminating.Ant 8 : [3, 8, 0, 1, 2, 7, 4, 6, 5], 113

Update called by 8Exploitation

Ant thread 8 terminating.Ant 9 : [7, 4, 6, 8, 0, 1, 3, 5, 2], 145

Update called by 9Exploitation

Ant thread 9 terminating.Ant 10 : [2, 7, 4, 6, 5, 3, 8, 0, 1], 113

Update called by 10Exploitation

Ant thread 10 terminating.Ant 11 : [3, 8, 1, 0, 5, 6, 4, 7, 2], 128

Update called by 11Exploitation

Ant thread 11 terminating.Ant 12 : [1, 8, 3, 7, 4, 6, 5, 2, 0], 145

Update called by 12Exploration

Ant thread 12 terminating.avg = 0.000603858695652

Ant 13 : [4, 7, 2, 3, 8, 0, 1, 5, 6], 125

Update called by 13Exploitation

Ant thread 13 terminating.Ant 14 : [5, 4, 7, 2, 3, 8, 0, 1, 6], 132

Update called by 14Exploration

Ant thread 14 terminating.avg = 0.000156363756635

Ant 15 : [5, 4, 7, 3, 8, 0, 1, 2, 6], 151

Update called by 15Exploitation

Ant thread 15 terminating.Ant 16 : [1, 0, 8, 3, 7, 4, 6, 5, 2], 116

Update called by 16Exploitation

Ant thread 16 terminating.Ant 17 : [8, 0, 1, 5, 6, 4, 7, 2, 3], 123

Update called by 17Exploitation

Ant thread 17 terminating.Ant 18 : [7, 4, 6, 5, 3, 8, 0, 1, 2], 117

Update called by 18Exploitation

Ant thread 18 terminating.Ant 19 : [1, 8, 0, 5, 4, 6, 7, 2, 3], 146

Update called by 19

Best: [7, 4, 6, 5, 3, 8, 0, 1, 2], 135, 12, 152

Ant thread 19 terminating.

Results

Best path = [7, 4, 6, 5, 3, 8, 0, 1, 2]

('H ',)

('E ',)

('G ',)

('F ',)

('D ',)

('I ',)

('A ',)

('B ',)

('C ',)

Best path cost = 135

>>>