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Processor: Intel(R) Core(TM) i7-7Y75 CPU @ 1.30GHz - 1.60 GHz

TSP backtracking:

Test case 1: n = 5

```
5
0 93 76 51 64
53 0 95 87 8
43 25 0 42 7
25 24 18 0 82
55 81 18 25 0

Solution:
Total distance: 144
1-->4-->2-->5-->3-->1
Time: 0s
```

Test case 2: n = 10

```
10
0 73 77 50 65 37 8 93 67 39
70 0 87 84 23 48 52 61 95 97
91 89 0 7 35 35 79 20 67 29
47 71 3 90 0 5 7 40 75 65
91 64 97 35 92 0 40 51 85 29
61 60 16 0 94 91 33 28 51 42
59 6 94 66 76 15 0 84 44 47
4 36 88 72 22 89 73 0 86 34
88 97 83 93 58 46 8 63 0 63
93 57 3 12 59 73 53 12 36 0

Solution:
Total distance: 139
1-->10-->9-->7-->2-->5-->6-->4-->3-->8-->1
Time: 0.043s
```

Test case 3: n = 15 (Time out)

```
15
0 15 1 30 79 26 10 44 6 94 48 37 36 64 60
76 0 72 62 19 54 59 8 51 48 34 43 83 13 4
92 37 0 91 81 62 58 28 94 38 69 3 14 59 23
12 24 57 0 17 16 62 20 30 72 91 45 33 92 64
63 9 9 85 0 79 50 29 99 38 13 4 13 41 23
94 78 3 77 39 0 90 93 44 76 60 35 5 4 43
74 23 63 89 15 81 0 34 45 7 4 74 8 91 27
48 13 18 87 28 8 93 0 30 99 68 43 16 6 60
96 55 71 46 36 85 16 58 0 18 64 62 98 2 62
48 22 73 81 79 54 67 95 43 0 1 17 18 97 90
43 51 74 49 85 60 21 34 16 63 0 98 5 5 85
95 18 36 84 80 54 81 65 91 17 93 0 93 48 98
51 2 41 79 80 56 89 66 7 33 34 20 0 16 98
50 51 57 60 59 51 10 23 50 76 54 39 4 0 30
6 4 73 56 42 37 91 60 39 16 69 19 27 54 0
```

TSP branch and bound

Test case 1: n = 5

```
5
0 93 76 51 64
53 0 95 87 8
43 25 0 42 7
25 24 18 0 82
55 81 18 25 0

Solution:
Total distance: 144
1-->4-->2-->5-->3-->1
Time: 0s
```

Test case 2: n = 10

```
10
0 73 77 50 65 37 8 93 67 39
70 0 87 84 23 48 52 61 95 97
91 89 0 7 35 35 79 20 67 29
47 71 3 90 0 5 7 40 75 65
91 64 97 35 92 0 40 51 85 29
61 60 16 0 94 91 33 28 51 42
59 6 94 66 76 15 0 84 44 47
4 36 88 72 22 89 73 0 86 34
88 97 83 93 58 46 8 63 0 63
93 57 3 12 59 73 53 12 36 0

Solution:
Total distance: 139
1-->10-->9-->7-->2-->5-->6-->4-->3-->8-->1
Time: 0.029s
```

Test case 3: n = 15

```
15
0 15 1 30 79 26 10 44 6 94 48 37 36 64 60
76 0 72 62 19 54 59 8 51 48 34 43 83 13 4
92 37 0 91 81 62 58 28 94 38 69 3 14 59 23
12 24 57 0 17 16 62 20 30 72 91 45 33 92 64
63 9 9 85 0 79 50 29 99 38 13 4 13 41 23
94 78 3 77 39 0 90 93 44 76 60 35 5 4 43
74 23 63 89 15 81 0 34 45 7 4 74 8 91 27
48 13 18 87 28 8 93 0 30 99 68 43 16 6 60
96 55 71 46 36 85 16 58 0 18 64 62 98 2 62
48 22 73 81 79 54 67 95 43 0 1 17 18 97 90
43 51 74 49 85 60 21 34 16 63 0 98 5 5 85
95 18 36 84 80 54 81 65 91 17 93 0 93 48 98
51 2 41 79 80 56 89 66 7 33 34 20 0 16 98
50 51 57 60 59 51 10 23 50 76 54 39 4 0 30
6 4 73 56 42 37 91 60 39 16 69 19 27 54 0

Solution:
Total distance: 140
1-->4-->8-->6-->3-->12-->10-->11-->13-->9-->14-->7-->5-->2-->15-->1
Time: 7.895s
```

Test case 4: n = 20 (Time out)

```
20
0 97 57 65 91 77 69 19 28 27 75 30 49 46 69 7 30 47 51 40
33 0 19 80 58 73 79 4 57 89 11 97 95 8 97 17 48 43 88 67
98 43 0 27 39 85 47 47 50 83 98 65 68 71 72 72 34 9 30 33
64 9 71 0 34 80 75 30 67 48 83 62 95 61 14 90 4 33 62 71
81 33 9 62 0 75 99 9 1 94 29 97 35 43 56 26 85 27 19 19
89 97 28 98 68 0 7 4 63 54 61 22 90 86 99 23 87 68 42 70
19 43 81 85 70 56 0 81 59 81 20 7 44 2 35 88 34 80 37 24
81 59 33 95 18 54 69 0 66 77 23 31 97 75 61 55 18 26 92 22
80 43 24 2 77 73 62 36 0 17 91 26 61 31 62 52 80 7 11 57
52 25 28 67 30 44 55 18 80 0 88 62 59 49 7 95 98 74 14 1
69 91 69 69 90 72 45 39 66 83 0 77 69 17 49 56 14 30 89 15
17 8 81 89 19 27 44 56 69 55 80 0 44 25 69 56 51 69 50 45
67 49 7 58 14 21 47 74 26 7 5 35 0 2 12 48 49 22 58 94
89 39 21 78 10 51 9 21 94 1 93 29 4 0 53 65 64 43 89 81
73 9 16 55 98 76 88 58 92 73 63 91 24 9 0 53 53 44 98 56
10 14 83 30 78 24 91 46 74 77 82 15 75 93 25 0 95 58 66 82
79 59 82 99 41 29 8 21 58 2 39 47 16 42 40 90 0 42 77 62
6 3 86 30 50 36 66 24 58 3 67 23 56 76 89 31 33 0 86 24
63 7 61 93 58 10 2 37 26 58 86 7 95 53 78 41 91 55 0 62
43 83 19 16 30 90 66 74 79 31 92 12 29 78 3 60 20 15 63 0
```

n	Time (TSP Backtracking)	Time (TSP Branch and bound)
5	0s	0s
10	0.043s	0.029s
15	Time out	7.895s
20	Time out	Time out
30	Time out	Time out