

```
/Library/Java/JavaVirtualMachines/jdk-13.0.1.jdk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ
IDEA.app/Contents/lib/idea_rt.jar=57070:/Applications/IntelliJ IDEA.app/Contents/bin" -Dfile.encoding=UTF-8
-classpath "/Users/lanshunfang/Documents/NEU-Classes-Courses/Program Structure - Algorithms/alg-
hw/out/production/alg-hw" org.neu.alg.hw.hw8.GraphTest
```

Java version used for this program is 13.0.1

GraphTest.java starts

Snake and ladder, the shortest path

1->16->32->36->42

^^^^^^^

You can see dot file at /Users/lanshunfang/Downloads/graph-output/Board36.dot

----- Board36 -----

DIRECTED GRAPH

Num Vertices = 42

Num Edges = 254

1 Fanouts: 2,3,16,4,5,6,7

1 FanIns: NONE

2 Fanouts: 3,16,4,5,6,7,8

2 FanIns: 1,6,7,8,9,10,11,12

3 Fanouts: 4,5,6,7,8,9,16

3 FanIns: 1,2

16 Fanouts: 17,18,19,20,21,32,22

16 FanIns: 1,2,10,11,12,13,14,15,3

4 Fanouts: 5,6,7,8,9,10

4 FanIns: 1,2,3,24,25,26,27,28,29,30

5 Fanouts: 6,7,8,9,10,11

5 FanIns: 1,2,3,4

6 Fanouts: 7,8,9,10,11,12,2

6 FanIns: 1,2,3,4,5

7 Fanouts: 8,9,10,11,12,2,13

7 FanIns: 1,2,3,4,5,6

8 Fanouts: 9,10,11,12,2,13,14

8 FanIns: 2,3,4,5,6,7

9 Fanouts: 10,11,12,2,13,14,15,25

9 FanIns: 3,4,5,6,7,8

10 Fanouts: 11,12,2,13,14,15,25,16

10 FanIns: 4,5,6,7,8,9

11 Fanouts: 12,2,13,14,15,25,16,17

11 FanIns: 5,6,7,8,9,10

12 Fanouts: 13,14,15,25,16,17,18,2

12 FanIns: 6,7,8,9,10,11

13 Fanouts: 14,15,25,16,17,18,19  
13 FanIns: 7,8,9,10,11,12  
14 Fanouts: 15,25,16,17,18,19,20  
14 FanIns: 8,9,10,11,12,13  
15 Fanouts: 16,17,18,19,20,21,32,25  
15 FanIns: 9,10,11,12,13,14  
25 Fanouts: 26,27,28,29,30,4,31  
25 FanIns: 9,10,11,12,13,14,19,20,21,22,23,24,15  
17 Fanouts: 18,19,20,21,32,22,23  
17 FanIns: 11,12,13,14,15,16  
18 Fanouts: 19,20,21,32,22,23,24  
18 FanIns: 12,13,14,15,16,17  
19 Fanouts: 20,21,32,22,23,24,25  
19 FanIns: 13,14,15,16,17,18  
20 Fanouts: 21,32,22,23,24,25,26  
20 FanIns: 14,15,16,17,18,19  
21 Fanouts: 22,23,24,25,26,27,32  
21 FanIns: 15,16,17,18,19,20  
32 Fanouts: 33,34,35,22,36,37,38  
32 FanIns: 15,16,17,18,19,20,26,27,28,29,30,31,21  
22 Fanouts: 23,24,25,26,27,28  
22 FanIns: 16,17,18,19,20,21,29,30,31,32,33,34,35  
23 Fanouts: 24,25,26,27,28,29  
23 FanIns: 17,18,19,20,21,22  
24 Fanouts: 25,26,27,28,29,30,4  
24 FanIns: 18,19,20,21,22,23  
26 Fanouts: 27,28,29,30,4,31,32  
26 FanIns: 20,21,22,23,24,25  
27 Fanouts: 28,29,30,4,31,32,33  
27 FanIns: 21,22,23,24,25,26  
28 Fanouts: 29,30,4,31,32,33,34  
28 FanIns: 22,23,24,25,26,27  
29 Fanouts: 30,4,31,32,33,34,35,22  
29 FanIns: 23,24,25,26,27,28  
30 Fanouts: 31,32,33,34,35,22,36,4  
30 FanIns: 24,25,26,27,28,29  
31 Fanouts: 32,33,34,35,22,36,37  
31 FanIns: 25,26,27,28,29,30  
33 Fanouts: 34,35,22,36,37,38,39  
33 FanIns: 27,28,29,30,31,32  
34 Fanouts: 35,22,36,37,38,39,40

34 FanIns: 28,29,30,31,32,33  
35 Fanouts: 36,37,38,39,40,41,22  
35 FanIns: 29,30,31,32,33,34  
36 Fanouts: 37,38,39,40,41,42  
36 FanIns: 30,31,32,33,34,35  
37 Fanouts: NONE  
37 FanIns: 31,32,33,34,35,36  
38 Fanouts: NONE  
38 FanIns: 32,33,34,35,36  
39 Fanouts: NONE  
39 FanIns: 33,34,35,36  
40 Fanouts: NONE  
40 FanIns: 34,35,36  
41 Fanouts: NONE  
41 FanIns: 35,36  
42 Fanouts: NONE  
42 FanIns: 36

File Board36.txt

Num Vertices = 42

Num Edges = 127

Work done = 42

BFS order = 1 2 3 16 4 5 6 7 8 9 17 18 19 20 21 32 22 10 11 12 13 14 15 25 23 24 26 27 33 34 35 36 37 38  
28 29 30 31 39 40 41 42

BFS path = 1 1 1 1 1 1 1 2 3 16 16 16 16 16 16 16 4 5 6 7 8 9 9 17 18 20 21 32 32 32 32 32 32 22 25 25  
25 33 34 35 36

1

1->2

1->3

1->16

1->4

1->5

1->6

1->7

1->2->8

1->3->9

1->16->17

1->16->18

1->16->19

1->16->20

1->16->21

1->16->32  
 1->16->22  
 1->4->10  
 1->5->11  
 1->6->12  
 1->7->13  
 1->2->8->14  
 1->3->9->15  
 1->3->9->25  
 1->16->17->23  
 1->16->18->24  
 1->16->20->26  
 1->16->21->27  
 1->16->32->33  
 1->16->32->34  
 1->16->32->35  
 1->16->32->36  
 1->16->32->37  
 1->16->32->38  
 1->16->22->28  
 1->3->9->25->29  
 1->3->9->25->30  
 1->3->9->25->31  
 1->16->32->33->39  
 1->16->32->34->40  
 1->16->32->35->41  
 1->16->32->36->42  
 -----

Snake and ladder, the shortest path

1->6->98->100->106

^^^^^^^

You can see dot file at /Users/lanshunfang/Downloads/graph-output/Board100case1.dot

----- Board100case1 -----

DIRECTED GRAPH

Num Vertices = 106

Num Edges = 670

1 Fanouts: 2,3,4,5,6,7

1 FanIns: NONE

2 Fanouts: 3,4,5,6,7,8

2 FanIns: 1

3 Fanouts: 4,5,6,7,8,9  
3 FanIns: 1,2  
4 Fanouts: 5,6,7,8,9,10  
4 FanIns: 1,2,3  
5 Fanouts: 6,7,8,9,10,11  
5 FanIns: 1,2,3,4  
6 Fanouts: 7,8,9,10,11,12,98  
6 FanIns: 1,2,3,4,5  
7 Fanouts: 8,9,10,11,12,98,13  
7 FanIns: 1,2,3,4,5,6  
8 Fanouts: 9,10,11,12,98,13,14  
8 FanIns: 2,3,4,5,6,7  
9 Fanouts: 10,11,12,98,13,14,15  
9 FanIns: 3,4,5,6,7,8  
10 Fanouts: 11,12,98,13,14,15,16  
10 FanIns: 4,5,6,7,8,9  
11 Fanouts: 12,98,13,14,15,16,17  
11 FanIns: 5,6,7,8,9,10  
12 Fanouts: 13,14,15,16,17,18,98  
12 FanIns: 6,7,8,9,10,11  
98 Fanouts: 99,100,101,102,103,104  
98 FanIns: 6,7,8,9,10,11,92,93,94,95,96,97,12  
13 Fanouts: 14,15,16,17,18,19  
13 FanIns: 7,8,9,10,11,12,89,90,91,92,93,94,95  
14 Fanouts: 15,16,17,18,19,20  
14 FanIns: 8,9,10,11,12,13  
15 Fanouts: 16,17,18,19,20,21  
15 FanIns: 9,10,11,12,13,14  
16 Fanouts: 17,18,19,20,21,22  
16 FanIns: 10,11,12,13,14,15  
17 Fanouts: 18,19,20,21,22,23  
17 FanIns: 11,12,13,14,15,16,61,62,63,64,65,66,67  
18 Fanouts: 19,20,21,22,23,24  
18 FanIns: 12,13,14,15,16,17  
19 Fanouts: 20,21,22,23,24,25  
19 FanIns: 13,14,15,16,17,18,69,70,71,72,73,74,75  
20 Fanouts: 21,22,23,24,25,26  
20 FanIns: 14,15,16,17,18,19  
21 Fanouts: 22,23,24,25,26,27  
21 FanIns: 15,16,17,18,19,20  
22 Fanouts: 23,24,25,26,27,28

22 FanIns: 16,17,18,19,20,21  
23 Fanouts: 24,25,26,27,28,29  
23 FanIns: 17,18,19,20,21,22  
24 Fanouts: 25,26,27,28,29,30  
24 FanIns: 18,19,20,21,22,23  
25 Fanouts: 26,27,28,29,30,31  
25 FanIns: 19,20,21,22,23,24,91,92,93,94,95,96,97  
26 Fanouts: 27,28,29,30,31,32,62  
26 FanIns: 20,21,22,23,24,25  
27 Fanouts: 28,29,30,31,32,62,33  
27 FanIns: 21,22,23,24,25,26,73,74,75,76,77,78,79  
28 Fanouts: 29,30,31,32,62,33,34  
28 FanIns: 22,23,24,25,26,27  
29 Fanouts: 30,31,32,62,33,34,35  
29 FanIns: 23,24,25,26,27,28  
30 Fanouts: 31,32,62,33,34,35,36  
30 FanIns: 24,25,26,27,28,29  
31 Fanouts: 32,62,33,34,35,36,37  
31 FanIns: 25,26,27,28,29,30  
32 Fanouts: 33,34,35,36,37,38,62  
32 FanIns: 26,27,28,29,30,31  
62 Fanouts: 63,64,65,66,67,17,68  
62 FanIns: 26,27,28,29,30,31,56,57,58,59,60,61,32  
33 Fanouts: 34,35,36,37,38,39  
33 FanIns: 27,28,29,30,31,32  
34 Fanouts: 35,36,37,38,39,40  
34 FanIns: 28,29,30,31,32,33  
35 Fanouts: 36,37,38,39,40,41  
35 FanIns: 29,30,31,32,33,34  
36 Fanouts: 37,38,39,40,41,42,68  
36 FanIns: 30,31,32,33,34,35  
37 Fanouts: 38,39,40,41,42,68,43  
37 FanIns: 31,32,33,34,35,36,87,88,89,90,91,92,93  
38 Fanouts: 39,40,41,42,68,43,44  
38 FanIns: 32,33,34,35,36,37  
39 Fanouts: 40,41,42,68,43,44,45  
39 FanIns: 33,34,35,36,37,38  
40 Fanouts: 41,42,68,43,44,45,46  
40 FanIns: 34,35,36,37,38,39  
41 Fanouts: 42,68,43,44,45,46,47  
41 FanIns: 35,36,37,38,39,40

42 Fanouts: 43,44,45,46,47,48,68  
42 FanIns: 36,37,38,39,40,41  
68 Fanouts: 69,70,71,72,73,74  
68 FanIns: 36,37,38,39,40,41,62,63,64,65,66,67,42  
43 Fanouts: 44,45,46,47,48,49,47  
43 FanIns: 37,38,39,40,41,42  
44 Fanouts: 45,46,47,48,49,47,50  
44 FanIns: 38,39,40,41,42,43  
45 Fanouts: 46,47,48,49,47,50,51  
45 FanIns: 39,40,41,42,43,44  
46 Fanouts: 47,48,49,47,50,51,52  
46 FanIns: 40,41,42,43,44,45  
47 Fanouts: 48,49,47,50,51,52,53  
47 FanIns: 41,42,43,43,44,44,45,45,46,46,47,48,49  
48 Fanouts: 49,47,50,51,52,53,54  
48 FanIns: 42,43,44,45,46,47  
49 Fanouts: 50,51,52,53,54,55,47  
49 FanIns: 43,44,45,46,47,48  
50 Fanouts: 51,52,53,54,55,56  
50 FanIns: 44,45,46,47,48,49  
51 Fanouts: 52,53,54,55,56,57  
51 FanIns: 45,46,47,48,49,50  
52 Fanouts: 53,54,55,56,57,58  
52 FanIns: 46,47,48,49,50,51  
53 Fanouts: 54,55,56,57,58,59  
53 FanIns: 47,48,49,50,51,52  
54 Fanouts: 55,56,57,58,59,60  
54 FanIns: 48,49,50,51,52,53  
55 Fanouts: 56,57,58,59,60,61  
55 FanIns: 49,50,51,52,53,54  
56 Fanouts: 57,58,59,60,61,62  
56 FanIns: 50,51,52,53,54,55  
57 Fanouts: 58,59,60,61,62,63  
57 FanIns: 51,52,53,54,55,56  
58 Fanouts: 59,60,61,62,63,64  
58 FanIns: 52,53,54,55,56,57  
59 Fanouts: 60,61,62,63,64,65  
59 FanIns: 53,54,55,56,57,58  
60 Fanouts: 61,62,63,64,65,66  
60 FanIns: 54,55,56,57,58,59  
61 Fanouts: 62,63,64,65,66,67,17

61 FanIns: 55,56,57,58,59,60  
63 Fanouts: 64,65,66,67,17,68,69  
63 FanIns: 57,58,59,60,61,62  
64 Fanouts: 65,66,67,17,68,69,70  
64 FanIns: 58,59,60,61,62,63  
65 Fanouts: 66,67,17,68,69,70,71  
65 FanIns: 59,60,61,62,63,64  
66 Fanouts: 67,17,68,69,70,71,72  
66 FanIns: 60,61,62,63,64,65  
67 Fanouts: 68,69,70,71,72,73,17  
67 FanIns: 61,62,63,64,65,66  
69 Fanouts: 70,71,72,73,74,75,19  
69 FanIns: 63,64,65,66,67,68  
70 Fanouts: 71,72,73,74,75,19,76  
70 FanIns: 64,65,66,67,68,69  
71 Fanouts: 72,73,74,75,19,76,77  
71 FanIns: 65,66,67,68,69,70  
72 Fanouts: 73,74,75,19,76,77,78  
72 FanIns: 66,67,68,69,70,71  
73 Fanouts: 74,75,19,76,77,78,79,27  
73 FanIns: 67,68,69,70,71,72  
74 Fanouts: 75,19,76,77,78,79,27,80  
74 FanIns: 68,69,70,71,72,73  
75 Fanouts: 76,77,78,79,27,80,81,19  
75 FanIns: 69,70,71,72,73,74  
76 Fanouts: 77,78,79,27,80,81,82  
76 FanIns: 70,71,72,73,74,75  
77 Fanouts: 78,79,27,80,81,82,83  
77 FanIns: 71,72,73,74,75,76  
78 Fanouts: 79,27,80,81,82,83,84  
78 FanIns: 72,73,74,75,76,77  
79 Fanouts: 80,81,82,83,84,85,27  
79 FanIns: 73,74,75,76,77,78  
80 Fanouts: 81,82,83,84,85,86  
80 FanIns: 74,75,76,77,78,79  
81 Fanouts: 82,83,84,85,86,87  
81 FanIns: 75,76,77,78,79,80  
82 Fanouts: 83,84,85,86,87,88  
82 FanIns: 76,77,78,79,80,81  
83 Fanouts: 84,85,86,87,88,89  
83 FanIns: 77,78,79,80,81,82



84 Fanouts: 85,86,87,88,89,90  
84 FanIns: 78,79,80,81,82,83  
85 Fanouts: 86,87,88,89,90,91  
85 FanIns: 79,80,81,82,83,84  
86 Fanouts: 87,88,89,90,91,92  
86 FanIns: 80,81,82,83,84,85  
87 Fanouts: 88,89,90,91,92,93,37  
87 FanIns: 81,82,83,84,85,86  
88 Fanouts: 89,90,91,92,93,37,94  
88 FanIns: 82,83,84,85,86,87  
89 Fanouts: 90,91,92,93,37,94,95,13  
89 FanIns: 83,84,85,86,87,88  
90 Fanouts: 91,92,93,37,94,95,13,96  
90 FanIns: 84,85,86,87,88,89  
91 Fanouts: 92,93,37,94,95,13,96,97,25  
91 FanIns: 85,86,87,88,89,90  
92 Fanouts: 93,37,94,95,13,96,97,25,98  
92 FanIns: 86,87,88,89,90,91  
93 Fanouts: 94,95,13,96,97,25,98,99,37  
93 FanIns: 87,88,89,90,91,92  
94 Fanouts: 95,13,96,97,25,98,99,100  
94 FanIns: 88,89,90,91,92,93  
95 Fanouts: 96,97,25,98,99,100,101,13  
95 FanIns: 89,90,91,92,93,94  
96 Fanouts: 97,25,98,99,100,101,102  
96 FanIns: 90,91,92,93,94,95  
97 Fanouts: 98,99,100,101,102,103,25  
97 FanIns: 91,92,93,94,95,96  
99 Fanouts: 100,101,102,103,104,105  
99 FanIns: 93,94,95,96,97,98  
100 Fanouts: 101,102,103,104,105,106  
100 FanIns: 94,95,96,97,98,99  
101 Fanouts: NONE  
101 FanIns: 95,96,97,98,99,100  
102 Fanouts: NONE  
102 FanIns: 96,97,98,99,100  
103 Fanouts: NONE  
103 FanIns: 97,98,99,100  
104 Fanouts: NONE  
104 FanIns: 98,99,100  
105 Fanouts: NONE

105 FanIns: 99,100  
106 Fanouts: NONE  
106 FanIns: 100

File Board100case1.txt

Num Vertices = 106

Num Edges = 335

Work done = 106

BFS order = 1 2 3 4 5 6 7 8 9 10 11 12 98 13 14 15 16 17 18 99 100 101 102 103 104 19 20 21 22 23 24 105  
106 25 26 27 28 29 30 31 32 62 33 34 35 36 37 38 63 64 65 66 67 68 39 40 41 42 43 44 69 70 71 72 73 74 45 46  
47 48 49 50 75 76 77 78 79 80 51 52 53 54 55 56 81 82 83 84 85 86 57 58 59 60 61 87 88 89 90 91 92 93 94 95  
96 97

BFS path = 1 1 1 1 1 1 1 2 3 4 5 6 6 7 8 9 10 11 12 98 98 98 98 98 98 13 14 15 16 17 18 99 100 19 20 21  
22 23 24 25 26 26 27 28 29 30 31 32 62 62 62 62 62 62 33 34 35 36 37 38 63 64 65 66 67 68 39 40 41 42 43 44  
69 70 71 72 73 74 45 46 47 48 49 50 75 76 77 78 79 80 51 52 53 54 55 81 82 83 84 85 86 87 88 89 90 91

1

1->2

1->3

1->4

1->5

1->6

1->7

1->2->8

1->3->9

1->4->10

1->5->11

1->6->12

1->6->98

1->7->13

1->2->8->14

1->3->9->15

1->4->10->16

1->5->11->17

1->6->12->18

1->6->98->99

1->6->98->100

1->6->98->101

1->6->98->102

1->6->98->103

1->6->98->104

1->7->13->19

1->2->8->14->20  
1->3->9->15->21  
1->4->10->16->22  
1->5->11->17->23  
1->6->12->18->24  
1->6->98->99->105  
1->6->98->100->106  
1->7->13->19->25  
1->2->8->14->20->26  
1->3->9->15->21->27  
1->4->10->16->22->28  
1->5->11->17->23->29  
1->6->12->18->24->30  
1->7->13->19->25->31  
1->2->8->14->20->26->32  
1->2->8->14->20->26->62  
1->3->9->15->21->27->33  
1->4->10->16->22->28->34  
1->5->11->17->23->29->35  
1->6->12->18->24->30->36  
1->7->13->19->25->31->37  
1->2->8->14->20->26->32->38  
1->2->8->14->20->26->62->63  
1->2->8->14->20->26->62->64  
1->2->8->14->20->26->62->65  
1->2->8->14->20->26->62->66  
1->2->8->14->20->26->62->67  
1->2->8->14->20->26->62->68  
1->3->9->15->21->27->33->39  
1->4->10->16->22->28->34->40  
1->5->11->17->23->29->35->41  
1->6->12->18->24->30->36->42  
1->7->13->19->25->31->37->43  
1->2->8->14->20->26->32->38->44  
1->2->8->14->20->26->62->63->69  
1->2->8->14->20->26->62->64->70  
1->2->8->14->20->26->62->65->71  
1->2->8->14->20->26->62->66->72  
1->2->8->14->20->26->62->67->73  
1->2->8->14->20->26->62->68->74  
1->3->9->15->21->27->33->39->45

1->4->10->16->22->28->34->40->46  
1->5->11->17->23->29->35->41->47  
1->6->12->18->24->30->36->42->48  
1->7->13->19->25->31->37->43->49  
1->2->8->14->20->26->32->38->44->50  
1->2->8->14->20->26->62->63->69->75  
1->2->8->14->20->26->62->64->70->76  
1->2->8->14->20->26->62->65->71->77  
1->2->8->14->20->26->62->66->72->78  
1->2->8->14->20->26->62->67->73->79  
1->2->8->14->20->26->62->68->74->80  
1->3->9->15->21->27->33->39->45->51  
1->4->10->16->22->28->34->40->46->52  
1->5->11->17->23->29->35->41->47->53  
1->6->12->18->24->30->36->42->48->54  
1->7->13->19->25->31->37->43->49->55  
1->2->8->14->20->26->32->38->44->50->56  
1->2->8->14->20->26->62->63->69->75->81  
1->2->8->14->20->26->62->64->70->76->82  
1->2->8->14->20->26->62->65->71->77->83  
1->2->8->14->20->26->62->66->72->78->84  
1->2->8->14->20->26->62->67->73->79->85  
1->2->8->14->20->26->62->68->74->80->86  
1->3->9->15->21->27->33->39->45->51->57  
1->4->10->16->22->28->34->40->46->52->58  
1->5->11->17->23->29->35->41->47->53->59  
1->6->12->18->24->30->36->42->48->54->60  
1->7->13->19->25->31->37->43->49->55->61  
1->2->8->14->20->26->62->63->69->75->81->87  
1->2->8->14->20->26->62->64->70->76->82->88  
1->2->8->14->20->26->62->65->71->77->83->89  
1->2->8->14->20->26->62->66->72->78->84->90  
1->2->8->14->20->26->62->67->73->79->85->91  
1->2->8->14->20->26->62->68->74->80->86->92  
1->2->8->14->20->26->62->63->69->75->81->87->93  
1->2->8->14->20->26->62->64->70->76->82->88->94  
1->2->8->14->20->26->62->65->71->77->83->89->95  
1->2->8->14->20->26->62->66->72->78->84->90->96  
1->2->8->14->20->26->62->67->73->79->85->91->97

-----

Snake and ladder, the shortest path

1->81->82->88->94->100->106

^^^^^^^

You can see dot file at /Users/lanshunfang/Downloads/graph-output/Board100case2.dot

----- Board100case2 -----

DIRECTED GRAPH

Num Vertices = 106

Num Edges = 681

1 Fanouts: 2,72,3,81,4,5,6,80,7,53

1 FanIns: NONE

2 Fanouts: 3,81,4,5,6,80,7,53,8,52,72

2 FanIns: 1

72 Fanouts: 73,74,75,76,77,78

72 FanIns: 1,66,67,68,69,70,71,2

3 Fanouts: 4,5,6,80,7,53,8,52,9,81

3 FanIns: 1,2

81 Fanouts: 82,83,84,85,86,87

81 FanIns: 1,2,75,76,77,78,79,80,3

4 Fanouts: 5,6,80,7,53,8,52,9,10

4 FanIns: 1,2,3

5 Fanouts: 6,80,7,53,8,52,9,10,11

5 FanIns: 1,2,3,4,53,54,55,56,57,58,59

6 Fanouts: 7,53,8,52,9,10,11,12,80

6 FanIns: 1,2,3,4,5

80 Fanouts: 81,82,83,84,85,86

80 FanIns: 1,2,3,4,5,74,75,76,77,78,79,6

7 Fanouts: 8,52,9,10,11,12,13,53

7 FanIns: 1,2,3,4,5,6

53 Fanouts: 54,55,56,57,58,59,5

53 FanIns: 1,2,3,4,5,6,47,48,49,50,51,52,7

8 Fanouts: 9,10,11,12,13,14,52

8 FanIns: 2,3,4,5,6,7

52 Fanouts: 53,54,55,56,57,58

52 FanIns: 2,3,4,5,6,7,46,47,48,49,50,51,8

9 Fanouts: 10,11,12,13,14,15

9 FanIns: 3,4,5,6,7,8

10 Fanouts: 11,12,13,14,15,16

10 FanIns: 4,5,6,7,8,9

11 Fanouts: 12,13,14,15,16,17

11 FanIns: 5,6,7,8,9,10,33,34,35,36,37,38,39

12 Fanouts: 13,14,15,16,17,18

12 FanIns: 6,7,8,9,10,11  
13 Fanouts: 14,15,16,17,18,19  
13 FanIns: 7,8,9,10,11,12  
14 Fanouts: 15,16,17,18,19,20  
14 FanIns: 8,9,10,11,12,13  
15 Fanouts: 16,17,18,19,20,21,77  
15 FanIns: 9,10,11,12,13,14  
16 Fanouts: 17,18,19,20,21,77,22  
16 FanIns: 10,11,12,13,14,15  
17 Fanouts: 18,19,20,21,77,22,23  
17 FanIns: 11,12,13,14,15,16  
18 Fanouts: 19,20,21,77,22,23,24  
18 FanIns: 12,13,14,15,16,17  
19 Fanouts: 20,21,77,22,23,24,25  
19 FanIns: 13,14,15,16,17,18,45,46,47,48,49,50,51  
20 Fanouts: 21,77,22,23,24,25,26  
20 FanIns: 14,15,16,17,18,19  
21 Fanouts: 22,23,24,25,26,27,77  
21 FanIns: 15,16,17,18,19,20  
77 Fanouts: 78,79,23,80,81,82,83  
77 FanIns: 15,16,17,18,19,20,71,72,73,74,75,76,21  
22 Fanouts: 23,24,25,26,27,28  
22 FanIns: 16,17,18,19,20,21  
23 Fanouts: 24,25,26,27,28,29,37  
23 FanIns: 17,18,19,20,21,22,73,74,75,76,77,78,79  
24 Fanouts: 25,26,27,28,29,37,30  
24 FanIns: 18,19,20,21,22,23  
25 Fanouts: 26,27,28,29,37,30,31  
25 FanIns: 19,20,21,22,23,24  
26 Fanouts: 27,28,29,37,30,31,32  
26 FanIns: 20,21,22,23,24,25,36,37,38,39,40,41,42  
27 Fanouts: 28,29,37,30,31,32,33  
27 FanIns: 21,22,23,24,25,26  
28 Fanouts: 29,37,30,31,32,33,34  
28 FanIns: 22,23,24,25,26,27  
29 Fanouts: 30,31,32,33,34,35,37  
29 FanIns: 23,24,25,26,27,28  
37 Fanouts: 38,39,11,40,41,42,26,43,33  
37 FanIns: 23,24,25,26,27,28,31,32,33,34,35,36,29  
30 Fanouts: 31,32,33,34,35,36  
30 FanIns: 24,25,26,27,28,29

31 Fanouts: 32,33,34,35,36,37  
31 FanIns: 25,26,27,28,29,30  
32 Fanouts: 33,34,35,36,37,38  
32 FanIns: 26,27,28,29,30,31  
33 Fanouts: 34,35,36,37,38,39,11  
33 FanIns: 27,28,29,30,31,32,37,38,39,40,41,42,43  
34 Fanouts: 35,36,37,38,39,11,40  
34 FanIns: 28,29,30,31,32,33  
35 Fanouts: 36,37,38,39,11,40,41  
35 FanIns: 29,30,31,32,33,34  
36 Fanouts: 37,38,39,11,40,41,42,26  
36 FanIns: 30,31,32,33,34,35  
38 Fanouts: 39,11,40,41,42,26,43,33,44  
38 FanIns: 32,33,34,35,36,37  
39 Fanouts: 40,41,42,26,43,33,44,45,11  
39 FanIns: 33,34,35,36,37,38  
40 Fanouts: 41,42,26,43,33,44,45,46  
40 FanIns: 34,35,36,37,38,39  
41 Fanouts: 42,26,43,33,44,45,46,47  
41 FanIns: 35,36,37,38,39,40  
42 Fanouts: 43,33,44,45,46,47,48,26  
42 FanIns: 36,37,38,39,40,41  
43 Fanouts: 44,45,46,47,48,49,33  
43 FanIns: 37,38,39,40,41,42  
44 Fanouts: 45,46,47,48,49,50  
44 FanIns: 38,39,40,41,42,43  
45 Fanouts: 46,47,48,49,50,51,19  
45 FanIns: 39,40,41,42,43,44  
46 Fanouts: 47,48,49,50,51,19,52  
46 FanIns: 40,41,42,43,44,45  
47 Fanouts: 48,49,50,51,19,52,53  
47 FanIns: 41,42,43,44,45,46  
48 Fanouts: 49,50,51,19,52,53,54  
48 FanIns: 42,43,44,45,46,47  
49 Fanouts: 50,51,19,52,53,54,55  
49 FanIns: 43,44,45,46,47,48  
50 Fanouts: 51,19,52,53,54,55,56  
50 FanIns: 44,45,46,47,48,49  
51 Fanouts: 52,53,54,55,56,57,19  
51 FanIns: 45,46,47,48,49,50  
54 Fanouts: 55,56,57,58,59,5,60

54 FanIns: 48,49,50,51,52,53  
55 Fanouts: 56,57,58,59,5,60,61  
55 FanIns: 49,50,51,52,53,54  
56 Fanouts: 57,58,59,5,60,61,62  
56 FanIns: 50,51,52,53,54,55  
57 Fanouts: 58,59,5,60,61,62,63  
57 FanIns: 51,52,53,54,55,56  
58 Fanouts: 59,5,60,61,62,63,64  
58 FanIns: 52,53,54,55,56,57  
59 Fanouts: 60,61,62,63,64,65,5  
59 FanIns: 53,54,55,56,57,58  
60 Fanouts: 61,62,63,64,65,66  
60 FanIns: 54,55,56,57,58,59  
61 Fanouts: 62,63,64,65,66,67  
61 FanIns: 55,56,57,58,59,60  
62 Fanouts: 63,64,65,66,67,68  
62 FanIns: 56,57,58,59,60,61  
63 Fanouts: 64,65,66,67,68,69  
63 FanIns: 57,58,59,60,61,62  
64 Fanouts: 65,66,67,68,69,70  
64 FanIns: 58,59,60,61,62,63  
65 Fanouts: 66,67,68,69,70,71  
65 FanIns: 59,60,61,62,63,64  
66 Fanouts: 67,68,69,70,71,72  
66 FanIns: 60,61,62,63,64,65  
67 Fanouts: 68,69,70,71,72,73  
67 FanIns: 61,62,63,64,65,66  
68 Fanouts: 69,70,71,72,73,74  
68 FanIns: 62,63,64,65,66,67  
69 Fanouts: 70,71,72,73,74,75  
69 FanIns: 63,64,65,66,67,68  
70 Fanouts: 71,72,73,74,75,76  
70 FanIns: 64,65,66,67,68,69  
71 Fanouts: 72,73,74,75,76,77  
71 FanIns: 65,66,67,68,69,70  
73 Fanouts: 74,75,76,77,78,79,23  
73 FanIns: 67,68,69,70,71,72  
74 Fanouts: 75,76,77,78,79,23,80  
74 FanIns: 68,69,70,71,72,73  
75 Fanouts: 76,77,78,79,23,80,81  
75 FanIns: 69,70,71,72,73,74



76 Fanouts: 77,78,79,23,80,81,82  
76 FanIns: 70,71,72,73,74,75  
78 Fanouts: 79,23,80,81,82,83,84  
78 FanIns: 72,73,74,75,76,77  
79 Fanouts: 80,81,82,83,84,85,23  
79 FanIns: 73,74,75,76,77,78  
82 Fanouts: 83,84,85,86,87,88  
82 FanIns: 76,77,78,79,80,81  
83 Fanouts: 84,85,86,87,88,89  
83 FanIns: 77,78,79,80,81,82  
84 Fanouts: 85,86,87,88,89,90  
84 FanIns: 78,79,80,81,82,83  
85 Fanouts: 86,87,88,89,90,91  
85 FanIns: 79,80,81,82,83,84  
86 Fanouts: 87,88,89,90,91,92  
86 FanIns: 80,81,82,83,84,85  
87 Fanouts: 88,89,90,91,92,93  
87 FanIns: 81,82,83,84,85,86  
88 Fanouts: 89,90,91,92,93,94  
88 FanIns: 82,83,84,85,86,87  
89 Fanouts: 90,91,92,93,94,95  
89 FanIns: 83,84,85,86,87,88  
90 Fanouts: 91,92,93,94,95,96  
90 FanIns: 84,85,86,87,88,89  
91 Fanouts: 92,93,94,95,96,97  
91 FanIns: 85,86,87,88,89,90  
92 Fanouts: 93,94,95,96,97,98  
92 FanIns: 86,87,88,89,90,91  
93 Fanouts: 94,95,96,97,98,99  
93 FanIns: 87,88,89,90,91,92  
94 Fanouts: 95,96,97,98,99,100  
94 FanIns: 88,89,90,91,92,93  
95 Fanouts: 96,97,98,99,100,101  
95 FanIns: 89,90,91,92,93,94  
96 Fanouts: 97,98,99,100,101,102  
96 FanIns: 90,91,92,93,94,95  
97 Fanouts: 98,99,100,101,102,103  
97 FanIns: 91,92,93,94,95,96  
98 Fanouts: 99,100,101,102,103,104  
98 FanIns: 92,93,94,95,96,97  
99 Fanouts: 100,101,102,103,104,105

99 FanIns: 93,94,95,96,97,98  
100 Fanouts: 101,102,103,104,105,106  
100 FanIns: 94,95,96,97,98,99  
101 Fanouts: NONE  
101 FanIns: 95,96,97,98,99,100  
102 Fanouts: NONE  
102 FanIns: 96,97,98,99,100  
103 Fanouts: NONE  
103 FanIns: 97,98,99,100  
104 Fanouts: NONE  
104 FanIns: 98,99,100  
105 Fanouts: NONE  
105 FanIns: 99,100  
106 Fanouts: NONE  
106 FanIns: 100

File Board100case2.txt

Num Vertices = 106

Num Edges = 340

Work done = 106

BFS order = 1 2 72 3 81 4 5 6 80 7 53 8 52 73 74 75 76 77 78 9 82 83 84 85 86 87 10 11 12 13 54 55 56 57  
58 59 14 79 23 15 88 89 90 91 92 93 16 17 18 19 60 61 62 63 64 65 20 24 25 26 27 28 29 37 21 94 95 96 97 98  
99 22 66 67 68 69 70 71 30 31 32 33 34 35 38 39 40 41 42 43 100 101 102 103 104 105 36 44 45 46 47 48 49  
106 50 51

BFS path = 1 1 1 1 1 1 1 1 1 1 2 2 72 72 72 72 72 72 3 81 81 81 81 81 81 4 5 6 7 53 53 53 53 53 53 8 73  
73 9 82 83 84 85 86 87 10 11 12 13 54 55 56 57 58 59 14 23 23 23 23 23 23 15 88 89 90 91 92 93 16 60 61  
62 63 64 65 24 25 26 27 28 29 37 37 37 37 37 37 94 95 96 97 98 99 30 38 39 40 41 42 43 100 44 45

1

1->2

1->72

1->3

1->81

1->4

1->5

1->6

1->80

1->7

1->53

1->2->8

1->2->52

1->72->73

1->72->74  
1->72->75  
1->72->76  
1->72->77  
1->72->78  
1->3->9  
1->81->82  
1->81->83  
1->81->84  
1->81->85  
1->81->86  
1->81->87  
1->4->10  
1->5->11  
1->6->12  
1->7->13  
1->53->54  
1->53->55  
1->53->56  
1->53->57  
1->53->58  
1->53->59  
1->2->8->14  
1->72->73->79  
1->72->73->23  
1->3->9->15  
1->81->82->88  
1->81->83->89  
1->81->84->90  
1->81->85->91  
1->81->86->92  
1->81->87->93  
1->4->10->16  
1->5->11->17  
1->6->12->18  
1->7->13->19  
1->53->54->60  
1->53->55->61  
1->53->56->62  
1->53->57->63  
1->53->58->64

1->53->59->65  
1->2->8->14->20  
1->72->73->23->24  
1->72->73->23->25  
1->72->73->23->26  
1->72->73->23->27  
1->72->73->23->28  
1->72->73->23->29  
1->72->73->23->37  
1->3->9->15->21  
1->81->82->88->94  
1->81->83->89->95  
1->81->84->90->96  
1->81->85->91->97  
1->81->86->92->98  
1->81->87->93->99  
1->4->10->16->22  
1->53->54->60->66  
1->53->55->61->67  
1->53->56->62->68  
1->53->57->63->69  
1->53->58->64->70  
1->53->59->65->71  
1->72->73->23->24->30  
1->72->73->23->25->31  
1->72->73->23->26->32  
1->72->73->23->27->33  
1->72->73->23->28->34  
1->72->73->23->29->35  
1->72->73->23->37->38  
1->72->73->23->37->39  
1->72->73->23->37->40  
1->72->73->23->37->41  
1->72->73->23->37->42  
1->72->73->23->37->43  
1->81->82->88->94->100  
1->81->83->89->95->101  
1->81->84->90->96->102  
1->81->85->91->97->103  
1->81->86->92->98->104  
1->81->87->93->99->105

1->72->73->23->24->30->36  
1->72->73->23->37->38->44  
1->72->73->23->37->39->45  
1->72->73->23->37->40->46  
1->72->73->23->37->41->47  
1->72->73->23->37->42->48  
1->72->73->23->37->43->49  
1->81->82->88->94->100->106  
1->72->73->23->37->38->44->50  
1->72->73->23->37->39->45->51

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Snake and ladder, the shortest path

1->82->63->99->105

^^^^^^^

You can see dot file at /Users/lanshunfang/Downloads/graph-output/SnakeisNotBad.dot

----- SnakeisNotBad -----

DIRECTED GRAPH

Num Vertices = 105

Num Edges = 610

1 Fanouts: 2,82,3,4,5,6,7

1 FanIns: NONE

2 Fanouts: 3,4,5,6,7,8,82

2 FanIns: 1

82 Fanouts: 83,84,63,85,86,87,88

82 FanIns: 1,76,77,78,79,80,81,2

3 Fanouts: 4,5,6,7,8,9

3 FanIns: 1,2

4 Fanouts: 5,6,7,8,9,10

4 FanIns: 1,2,3

5 Fanouts: 6,7,8,9,10,11

5 FanIns: 1,2,3,4

6 Fanouts: 7,8,9,10,11,12

6 FanIns: 1,2,3,4,5

7 Fanouts: 8,9,10,11,12,13

7 FanIns: 1,2,3,4,5,6

8 Fanouts: 9,10,11,12,13,14

8 FanIns: 2,3,4,5,6,7

9 Fanouts: 10,11,12,13,14,15

9 FanIns: 3,4,5,6,7,8

10 Fanouts: 11,12,13,14,15,16

10 FanIns: 4,5,6,7,8,9  
11 Fanouts: 12,13,14,15,16,17  
11 FanIns: 5,6,7,8,9,10  
12 Fanouts: 13,14,15,16,17,18  
12 FanIns: 6,7,8,9,10,11  
13 Fanouts: 14,15,16,17,18,19  
13 FanIns: 7,8,9,10,11,12  
14 Fanouts: 15,16,17,18,19,20  
14 FanIns: 8,9,10,11,12,13  
15 Fanouts: 16,17,18,19,20,21  
15 FanIns: 9,10,11,12,13,14  
16 Fanouts: 17,18,19,20,21,22  
16 FanIns: 10,11,12,13,14,15  
17 Fanouts: 18,19,20,21,22,23  
17 FanIns: 11,12,13,14,15,16  
18 Fanouts: 19,20,21,22,23,24  
18 FanIns: 12,13,14,15,16,17  
19 Fanouts: 20,21,22,23,24,25  
19 FanIns: 13,14,15,16,17,18  
20 Fanouts: 21,22,23,24,25,26  
20 FanIns: 14,15,16,17,18,19  
21 Fanouts: 22,23,24,25,26,27  
21 FanIns: 15,16,17,18,19,20  
22 Fanouts: 23,24,25,26,27,28  
22 FanIns: 16,17,18,19,20,21  
23 Fanouts: 24,25,26,27,28,29  
23 FanIns: 17,18,19,20,21,22  
24 Fanouts: 25,26,27,28,29,30  
24 FanIns: 18,19,20,21,22,23  
25 Fanouts: 26,27,28,29,30,31  
25 FanIns: 19,20,21,22,23,24  
26 Fanouts: 27,28,29,30,31,32  
26 FanIns: 20,21,22,23,24,25  
27 Fanouts: 28,29,30,31,32,33  
27 FanIns: 21,22,23,24,25,26  
28 Fanouts: 29,30,31,32,33,34  
28 FanIns: 22,23,24,25,26,27  
29 Fanouts: 30,31,32,33,34,35  
29 FanIns: 23,24,25,26,27,28  
30 Fanouts: 31,32,33,34,35,36  
30 FanIns: 24,25,26,27,28,29

31 Fanouts: 32,33,34,35,36,37  
31 FanIns: 25,26,27,28,29,30  
32 Fanouts: 33,34,35,36,37,38  
32 FanIns: 26,27,28,29,30,31  
33 Fanouts: 34,35,36,37,38,39  
33 FanIns: 27,28,29,30,31,32  
34 Fanouts: 35,36,37,38,39,40  
34 FanIns: 28,29,30,31,32,33  
35 Fanouts: 36,37,38,39,40,41  
35 FanIns: 29,30,31,32,33,34  
36 Fanouts: 37,38,39,40,41,42  
36 FanIns: 30,31,32,33,34,35  
37 Fanouts: 38,39,40,41,42,43  
37 FanIns: 31,32,33,34,35,36  
38 Fanouts: 39,40,41,42,43,44  
38 FanIns: 32,33,34,35,36,37  
39 Fanouts: 40,41,42,43,44,45  
39 FanIns: 33,34,35,36,37,38  
40 Fanouts: 41,42,43,44,45,46  
40 FanIns: 34,35,36,37,38,39  
41 Fanouts: 42,43,44,45,46,47  
41 FanIns: 35,36,37,38,39,40  
42 Fanouts: 43,44,45,46,47,48  
42 FanIns: 36,37,38,39,40,41  
43 Fanouts: 44,45,46,47,48,49  
43 FanIns: 37,38,39,40,41,42  
44 Fanouts: 45,46,47,48,49,50  
44 FanIns: 38,39,40,41,42,43  
45 Fanouts: 46,47,48,49,50,51  
45 FanIns: 39,40,41,42,43,44  
46 Fanouts: 47,48,49,50,51,52  
46 FanIns: 40,41,42,43,44,45  
47 Fanouts: 48,49,50,51,52,53  
47 FanIns: 41,42,43,44,45,46  
48 Fanouts: 49,50,51,52,53,54  
48 FanIns: 42,43,44,45,46,47  
49 Fanouts: 50,51,52,53,54,55  
49 FanIns: 43,44,45,46,47,48  
50 Fanouts: 51,52,53,54,55,56  
50 FanIns: 44,45,46,47,48,49  
51 Fanouts: 52,53,54,55,56,57

51 FanIns: 45,46,47,48,49,50  
52 Fanouts: 53,54,55,56,57,58  
52 FanIns: 46,47,48,49,50,51  
53 Fanouts: 54,55,56,57,58,59  
53 FanIns: 47,48,49,50,51,52  
54 Fanouts: 55,56,57,58,59,60  
54 FanIns: 48,49,50,51,52,53  
55 Fanouts: 56,57,58,59,60,61  
55 FanIns: 49,50,51,52,53,54  
56 Fanouts: 57,58,59,60,61,62  
56 FanIns: 50,51,52,53,54,55  
57 Fanouts: 58,59,60,61,62,63  
57 FanIns: 51,52,53,54,55,56  
58 Fanouts: 59,60,61,62,63,64,99  
58 FanIns: 52,53,54,55,56,57  
59 Fanouts: 60,61,62,63,64,99,65  
59 FanIns: 53,54,55,56,57,58  
60 Fanouts: 61,62,63,64,99,65,66  
60 FanIns: 54,55,56,57,58,59  
61 Fanouts: 62,63,64,99,65,66,67  
61 FanIns: 55,56,57,58,59,60  
62 Fanouts: 63,64,99,65,66,67,68  
62 FanIns: 56,57,58,59,60,61  
63 Fanouts: 64,99,65,66,67,68,69  
63 FanIns: 57,58,59,60,61,62,78,79,80,81,82,83,84  
64 Fanouts: 65,66,67,68,69,70,99  
64 FanIns: 58,59,60,61,62,63  
99 Fanouts: 100,101,102,103,104,105  
99 FanIns: 58,59,60,61,62,63,93,94,95,96,97,98,64  
65 Fanouts: 66,67,68,69,70,71  
65 FanIns: 59,60,61,62,63,64  
66 Fanouts: 67,68,69,70,71,72  
66 FanIns: 60,61,62,63,64,65  
67 Fanouts: 68,69,70,71,72,73  
67 FanIns: 61,62,63,64,65,66  
68 Fanouts: 69,70,71,72,73,74  
68 FanIns: 62,63,64,65,66,67  
69 Fanouts: 70,71,72,73,74,75  
69 FanIns: 63,64,65,66,67,68  
70 Fanouts: 71,72,73,74,75,76  
70 FanIns: 64,65,66,67,68,69



71 Fanouts: 72,73,74,75,76,77  
71 FanIns: 65,66,67,68,69,70  
72 Fanouts: 73,74,75,76,77,78  
72 FanIns: 66,67,68,69,70,71  
73 Fanouts: 74,75,76,77,78,79  
73 FanIns: 67,68,69,70,71,72  
74 Fanouts: 75,76,77,78,79,80  
74 FanIns: 68,69,70,71,72,73  
75 Fanouts: 76,77,78,79,80,81  
75 FanIns: 69,70,71,72,73,74  
76 Fanouts: 77,78,79,80,81,82  
76 FanIns: 70,71,72,73,74,75  
77 Fanouts: 78,79,80,81,82,83  
77 FanIns: 71,72,73,74,75,76  
78 Fanouts: 79,80,81,82,83,84,63  
78 FanIns: 72,73,74,75,76,77  
79 Fanouts: 80,81,82,83,84,63,85  
79 FanIns: 73,74,75,76,77,78  
80 Fanouts: 81,82,83,84,63,85,86  
80 FanIns: 74,75,76,77,78,79  
81 Fanouts: 82,83,84,63,85,86,87  
81 FanIns: 75,76,77,78,79,80  
83 Fanouts: 84,63,85,86,87,88,89  
83 FanIns: 77,78,79,80,81,82  
84 Fanouts: 85,86,87,88,89,90,63  
84 FanIns: 78,79,80,81,82,83  
85 Fanouts: 86,87,88,89,90,91  
85 FanIns: 79,80,81,82,83,84  
86 Fanouts: 87,88,89,90,91,92  
86 FanIns: 80,81,82,83,84,85  
87 Fanouts: 88,89,90,91,92,93  
87 FanIns: 81,82,83,84,85,86  
88 Fanouts: 89,90,91,92,93,94  
88 FanIns: 82,83,84,85,86,87  
89 Fanouts: 90,91,92,93,94,95  
89 FanIns: 83,84,85,86,87,88  
90 Fanouts: 91,92,93,94,95,96  
90 FanIns: 84,85,86,87,88,89  
91 Fanouts: 92,93,94,95,96,97  
91 FanIns: 85,86,87,88,89,90  
92 Fanouts: 93,94,95,96,97,98

92 FanIns: 86,87,88,89,90,91  
 93 Fanouts: 94,95,96,97,98,99  
 93 FanIns: 87,88,89,90,91,92  
 94 Fanouts: 95,96,97,98,99,100  
 94 FanIns: 88,89,90,91,92,93  
 95 Fanouts: 96,97,98,99,100,101  
 95 FanIns: 89,90,91,92,93,94  
 96 Fanouts: 97,98,99,100,101,102  
 96 FanIns: 90,91,92,93,94,95  
 97 Fanouts: 98,99,100,101,102,103  
 97 FanIns: 91,92,93,94,95,96  
 98 Fanouts: 99,100,101,102,103,104  
 98 FanIns: 92,93,94,95,96,97  
 100 Fanouts: NONE  
 100 FanIns: 94,95,96,97,98,99  
 101 Fanouts: NONE  
 101 FanIns: 95,96,97,98,99  
 102 Fanouts: NONE  
 102 FanIns: 96,97,98,99  
 103 Fanouts: NONE  
 103 FanIns: 97,98,99  
 104 Fanouts: NONE  
 104 FanIns: 98,99  
 105 Fanouts: NONE  
 105 FanIns: 99

File SnakeisNotBad.txt

Num Vertices = 105

Num Edges = 305

Work done = 105

BFS order = 1 2 82 3 4 5 6 7 8 83 84 63 85 86 87 88 9 10 11 12 13 14 89 90 64 99 65 66 67 68 69 91 92 93  
 94 15 16 17 18 19 20 95 96 70 100 101 102 103 104 105 71 72 73 74 75 97 98 21 22 23 24 25 26 76 77 78 79 80  
 81 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61  
 62

BFS path = 1 1 1 1 1 1 1 1 2 82 82 82 82 82 82 3 4 5 6 7 8 83 84 63 63 63 63 63 63 85 86 87 88 9 10  
 11 12 13 14 89 90 64 99 99 99 99 99 99 65 66 67 68 69 91 92 15 16 17 18 19 20 70 71 72 73 74 75 21 22 23 24  
 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56

1

1->2

1->82

1->3

1->4  
1->5  
1->6  
1->7  
1->2->8  
1->82->83  
1->82->84  
1->82->63  
1->82->85  
1->82->86  
1->82->87  
1->82->88  
1->3->9  
1->4->10  
1->5->11  
1->6->12  
1->7->13  
1->2->8->14  
1->82->83->89  
1->82->84->90  
1->82->63->64  
1->82->63->99  
1->82->63->65  
1->82->63->66  
1->82->63->67  
1->82->63->68  
1->82->63->69  
1->82->85->91  
1->82->86->92  
1->82->87->93  
1->82->88->94  
1->3->9->15  
1->4->10->16  
1->5->11->17  
1->6->12->18  
1->7->13->19  
1->2->8->14->20  
1->82->83->89->95  
1->82->84->90->96  
1->82->63->64->70  
1->82->63->99->100

1->82->63->99->101  
1->82->63->99->102  
1->82->63->99->103  
1->82->63->99->104  
1->82->63->99->105  
1->82->63->65->71  
1->82->63->66->72  
1->82->63->67->73  
1->82->63->68->74  
1->82->63->69->75  
1->82->85->91->97  
1->82->86->92->98  
1->3->9->15->21  
1->4->10->16->22  
1->5->11->17->23  
1->6->12->18->24  
1->7->13->19->25  
1->2->8->14->20->26  
1->82->63->64->70->76  
1->82->63->65->71->77  
1->82->63->66->72->78  
1->82->63->67->73->79  
1->82->63->68->74->80  
1->82->63->69->75->81  
1->3->9->15->21->27  
1->4->10->16->22->28  
1->5->11->17->23->29  
1->6->12->18->24->30  
1->7->13->19->25->31  
1->2->8->14->20->26->32  
1->3->9->15->21->27->33  
1->4->10->16->22->28->34  
1->5->11->17->23->29->35  
1->6->12->18->24->30->36  
1->7->13->19->25->31->37  
1->2->8->14->20->26->32->38  
1->3->9->15->21->27->33->39  
1->4->10->16->22->28->34->40  
1->5->11->17->23->29->35->41  
1->6->12->18->24->30->36->42  
1->7->13->19->25->31->37->43

1->2->8->14->20->26->32->38->44  
1->3->9->15->21->27->33->39->45  
1->4->10->16->22->28->34->40->46  
1->5->11->17->23->29->35->41->47  
1->6->12->18->24->30->36->42->48  
1->7->13->19->25->31->37->43->49  
1->2->8->14->20->26->32->38->44->50  
1->3->9->15->21->27->33->39->45->51  
1->4->10->16->22->28->34->40->46->52  
1->5->11->17->23->29->35->41->47->53  
1->6->12->18->24->30->36->42->48->54  
1->7->13->19->25->31->37->43->49->55  
1->2->8->14->20->26->32->38->44->50->56  
1->3->9->15->21->27->33->39->45->51->57  
1->4->10->16->22->28->34->40->46->52->58  
1->5->11->17->23->29->35->41->47->53->59  
1->6->12->18->24->30->36->42->48->54->60  
1->7->13->19->25->31->37->43->49->55->61  
1->2->8->14->20->26->32->38->44->50->56->62

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GraphTest.java Ends  
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Process finished with exit code 0