CS 312: Artificial Intelligence Laboratory

Task 1: Test Cases

Sample Input 1 (BFS): 0	**Sample Output 1:** 42 24	
| ```
+--+--+--+--+
   |     |  |
+  +  +  +  +
   |     |  |
+--+--+  +--+
   |     |  |
+  +  +--+  +
|  |        *
+--+--+--+--+
``` | ```
0--+--+--+--+
00 |0000 |  |
+0 +0 +0 +  +
|0000 |0    |
+--+--+0 +--+
|       |0000 |
+  +  +--+0 +
|  |        000
+--+--+--+--+
``` | |
| **Sample Input 2 (DFS):**
1 | **Sample Output 2:**
24
24 | **Sample Output 2 (Alternate)**
46
26 |
| ```
+--+--+--+--+
   |     |  |
+  +  +  +  +
   |     |  |
+--+--+  +--+
   |     |  |
+  +  +--+  +
|  |        *
+--+--+--+--+
``` | ```
0--+--+--+--+
00 |0000 |  |
+0 +0 +0 +  +
|0000 |0    |
+--+--+0 +--+
|       |0000 |
+  +  +--+0 +
|  |        000
+--+--+--+--+
``` | ```
0--+--+--+--+
000| 0000|  |
+ 0+ 0+ 0+  +
| 0000|00   |
+--+--+0 +--+
|       |00000|
+  +  +--+ 0+
|  |         00
+--+--+--+--+
``` |
| **Sample Input 3 (DFID):**
2 | **Sample Output 3:**
621
24 | **Sample Output 3 (Alternate)**
862
24 |
| ```
+--+--+--+--+
   |     |  |
+  +  +  +  +
   |     |  |
+--+--+  +--+
   |     |  |
+  +  +--+  +
|  |        *
+--+--+--+--+
``` | ```
0--+--+--+--+
00 |0000 |  |
+0 +0 +0 +  +
|0000 |0    |
+--+--+0 +--+
|       |0000 |
+  +  +--+0 +
|  |        000
+--+--+--+--+
``` | ```
0--+--+--+--+
000| 0000|  |
+ 0+ 0+ 0+  +
| 0000| 0   |
+--+--+ 0+--+
|       | 0000|
+  +  +--+ 0+
|  |         00
+--+--+--+--+
``` |

Sample Input 4 (BFS):	Sample Output 4:	

```
Sample Input 4 (BFS):
0

 +--+--+--+--+--+--+
       |     |  |  |
 +--+  +  +  +  +  +
 |     |  |     |  |
 +  +--+  +--+  +
 |  |     |  |
 +  +--+--+--+  +
 |        |     |
 +  +--+  +  +  +
 |     |     |  *
 +--+--+--+--+--+
```

```
Sample Output 4:
59
33
0--+--+--+--+--+
00000 |     |  |
+--+0 +  +  +  +
| 000 |  |     |
+ 0+--+   +--+  +
| 0|          |  |
+ 0+--+--+--+   +
| 000000 |0000 |
+   +--+0 +0 +0 +
|       |0000 |000
+--+--+--+--+--+
```

Sample Input 5 (DFS):	Sample Output 5:	Sample Output 5 (Alternate)

```
Sample Input 5 (DFS):
1

 +--+--+--+--+--+--+
       |     |  |  |
 +--+  +  +  +  +  +
 |     |  |     |  |
 +  +--+  +--+  +
 |  |        |  |
 +  +--+--+--+  +
 |        |     |
 +  +--+  +  +  +
 |     |     |  *
 +--+--+--+--+--+
```

```
Sample Output 5:
41
33
0--+--+--+--+--+
00000 |     |  |
+--+0 +  +  +  +
| 000 |  |     |
+ 0+--+   +--+  +
| 0|          |  |
+ 0+--+--+--+   +
| 000000 |0000 |
+   +--+0 +0 +0 +
|       |0000 |000
+--+--+--+--+--+
```

```
Sample Output 5 (Alternate)
82
37
0--+--+--+--+--+
000000|     |  |
+--+ 0+  +  +  +
|00000|  |     |
+0 +--+   +--+  +
|00|          |  |
+ 0+--+--+--+   +
| 0000000| 0000|
+   +--+ 0+ 0+ 0+
|      | 0000| 00
+--+--+--+--+--+
```

Sample Input 6 (DFID):	Sample Output 6:	Sample Output 6 (Alternate)

```
Sample Input 6 (DFID):
2

 +--+--+--+--+--+--+
       |     |  |  |
 +--+  +  +  +  +  +
 |     |  |  |  |
 +  +--+  +--+  +
 |  |        |  |
 +  +--+--+--+  +
 |        |     |
 +  +--+  +  +  +
 |     |     |  *
 +--+--+--+--+--+
```

```
Sample Output 6:
1358
33
0--+--+--+--+--+
00000 |     |  |
+--+0 +  +  +  +
| 000 |  |     |
+ 0+--+   +--+  +
| 0|          |  |
+ 0+--+--+--+   +
| 000000 |0000 |
+   +--+0 +0 +0 +
|       |0000 |000
+--+--+--+--+--+
```

```
Sample Output 6 (Alternate)
2172
33
0--+--+--+--+--+
00000 |     |  |
+--+0 +  +  +  +
| 000 |  |     |
+ 0+--+   +--+  +
| 0|          |  |
+ 0+--+--+--+   +
| 0000000| 0000|
+   +--+ 0+ 0+ 0+
|      | 0000| 00
+--+--+--+--+--+
```

To test your solutions, you can generate more mazes from [here](#). (Put the type of maze as text.)

Note: For submission, use this preference order for adding neighbors:
DOWN > UP > RIGHT > LEFT.

Deadline: 11:55 PM, 15 Jan 2021

For Reference :

State-space search: https://youtu.be/52nI2IPyOu8
BFS and DFS: https://youtu.be/TMLyKcBtHuo
DFID: https://youtu.be/xIEe0yK1VL4