Jason Tran

CS32 Homework 2

2/8/23

#2)

1. (5,3)
2. (6,3)
3. (4,3)
4. (4,2)
5. (4,1)
6. (3,1)
7. (2,1)
8. (1,1)
9. (1,2)
10. (3,3)
11. (5,4)
12. (5,5)

#4)

1. (5,3)
2. (5,4)
3. (4,3)
4. (6,3)
5. (5,5)
6. (3,3)
7. (4,2)
8. (5,6)
9. (4,5)
10. (4,1)
11. (5,7)
12. (3,5)

The first algorithm that uses a stack seems to travel all the way down one cardinal direction first before it goes to the next. This is because in a stack the last one to be pushed in, is also the first one to be popped out (or the one to be checked). So it will always continue down that respective direction until a barrier is hit, then go to the second-last added …, also known as depth-first searching.

The second algorithm uses a queue to travel, which means that the first ones in are the first ones out (checked). Since the algorithm’s cycle is east-north-west-south, it will always travel through those 4 directions each time if it is possible, and not fully go all the way down in one direction. The popped coordinate (the one to be checked) will always be evenly spread throughout the map and the closer to the starting point it will be checked first. This is also known as breadth-first searching