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CS 32, Section 2D

Homework 2

# 2. Stack First 12 Coordinates

The first 12 coordinates popped off the coordStack are:

(3,5), (3,6), (3,4), (2,4), (1,4), (1,3), (1,2) (1,1) (2,1), (3,3), (4,5), (5,5)

# 4. Queue First 12 Coordinates

The first 12 coordinates popped off the coordQueue are:

(3,5), (4,5), (3,4), (3,6), (5,5), (3,3), (2,4), (6,5), (5,4), (1,4), (7,5), (5,3)

The two algorithms differ in terms of the order by which they eliminate positions from the maze. The stack implementation does a depth-first search, wherein the path taken follows the first coordinate popped off the stack, due to the LIFO characteristic of stacks. In other words, one route from the start of the maze is thoroughly explored before returning to the first fork in the road to explore other paths. In contrast, the queue implementation employs a FIFO method of exploring different paths, or in other words a breadth-first search. This results in the queue implementation expanding at an about equal rate in all viable directions from the starting point.