Niklas Leet | Project 2 | hw.docx

2.

(3, 4)

(3, 3)

(3, 5)

(2, 5)

(1, 5)

(1, 6)

(1, 7)

(1, 8)

(2, 8)

(3, 6)

(4, 4)

(5, 4)

4.

(3, 4)

(4, 4)

(3, 5)

(3, 3)

(5, 4)

(3, 6)

(2, 5)

(6, 4)

(5, 5)

(1, 5)

(7, 4)

(5, 6)

When the stack implementation reaches a junction, it first explores the path branching west, and subsequently the paths to the north, east, and south in that order. Due to the first in, first out order of a stack, whichever available path the function finds first will be explored last. Hence, the order of the if statements, each corresponding to a certain direction, is opposite the order of the function’s exploration. The if statements appear in south, east, north, west order, so the stack implementation explores in the opposite order: west, north, east, south.

The queue implementation, on the other hand, explores south, then east, north, and west in that order. Due to the first in, last out order of a queue, the function will explore branching paths in the same order that the if statements appear in within the function: south, east, north, then west.