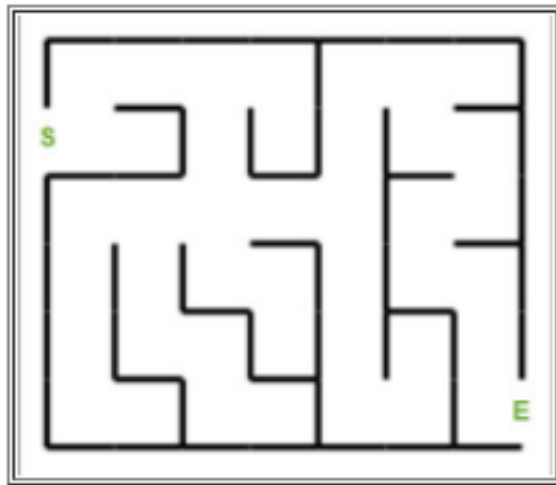


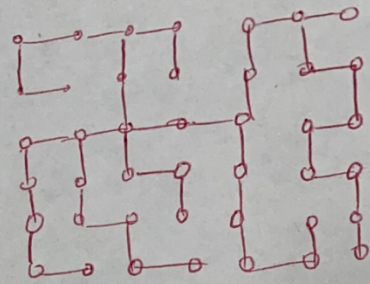
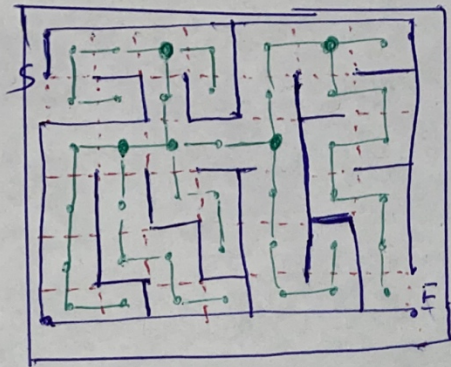
CS455 Week 10 Homework
Shoumya Singh
ID-19566

Q6. Use Dijkstra's Algorithm to find the [shortest path](#) of the following maze .

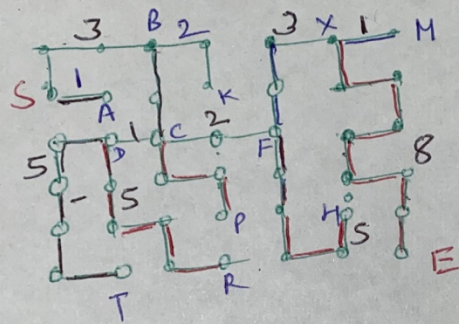


Process

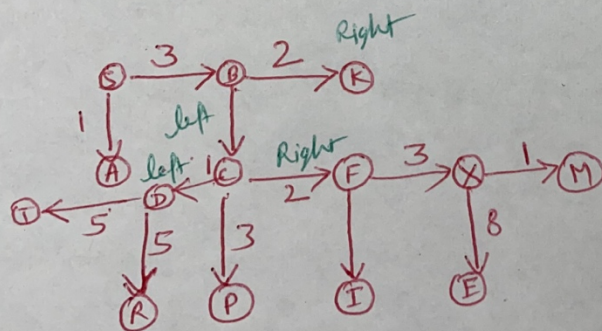
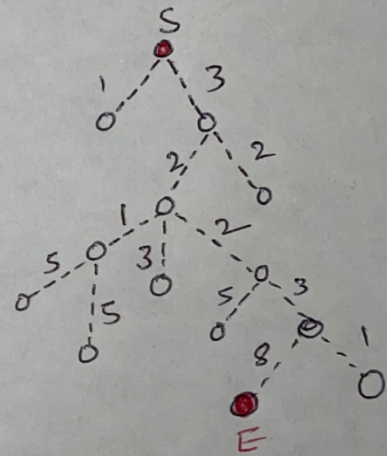
- Step 1: Applying Dijkstra's Algorithm to find the [shortest path](#). Your answer should include
 - Each node of the tree representation of the maze should be labeled sequentially and each edge should have a number indicating the distance.
- Your answer should include the path and the total distance.
- References
 - [Maze](#)
 - [Shortest Path](#)



step 2



Step-3



V: the current visiting node
 V: the next node to visit
 V: this node has been visited

Vertex(a ccumula ted path)	Initial	Step1 S	Step 2 (S,B)	Step 3 (S,B,C)	Step 4 (S,B,C,D)	Step 5 (S,B,C,D, F)	Step 6 (S,B,C,D, F,X)	Step 7 (S,B,C,D, F,X,E)
	Next Step S	Next Step B	Next Step C	Next Step D	Next Step F	Next Step X	Next Step E	
S	0	0	0	0	0	0	0	0
B	In	3	3	3	3	3	4	4
A	In	1	1	1	1	1	1	1
C	In	In	5	5	5	5	5	5
K	In	In	5	5	5	5	5	5
P	In	In	In	8	8	8	8	8
D	In	In	In	6	6	6	6	6
F	In	In	In	7	7	7	7	7
R	In	In	In	In	11	11	11	11
T	In	In	In	In	11	11	11	11
I	In	In	In	In	In	12	12	12
X	In	In	In	In	In	10	10	10
M	In	In	In	In	In	In	11	11
E	In	In	In	In	In	In	18	18

Stop if the destination node E is reached you will find the minimum distance of **E** from **S** is **18**.

The path is **S>B>C>D>F>X>E**