**# Testing when start and end goals are at the corners of the graph**

***Input File***

world\_map5 = [

[0, 0, 0, 0, 0],

[0, 0, 0, 0, 0],

[0, 0, 1, 1, 0],

[0, 0, 1, 0, 0],

[0, 1, 0, 0, 0],

[0, 1, 0, 0, 1],

[0, 1, 0, 0, 0]

]

adjacency5 = True

start\_goal5 = (0,0)

end\_goal5 = (6,4)

***Output***

Map = [

[8, 8, 8, 8, 8]

[7, 7, 7, 7, 7]

[6, 6, 1, 1, 6]

[6, 5, 1, 5, 5]

[6, 1, 4, 4, 4]

[7, 1, 4, 3, 1]

[8, 1, 4, 3, 2]

]

Path = [(1, 1), (1, 0), (2, 1), (2, 0), (3, 1), (4, 2), (5, 3), (6, 4)]

**# When end goal is around the middle region.**

***Input File***

world\_map4 = [

[0, 0, 0, 0, 0],

[0, 0, 0, 0, 0],

[0, 0, 1, 1, 0],

[0, 0, 1, 0, 0],

[0, 1, 0, 0, 0],

[0, 1, 0, 0, 1],

[0, 1, 0, 0, 0]

]

adjacency4 = True

start\_goal4 = (3,0)

end\_goal4 = (3,3)

***Output***

Map = [

[7, 6, 5, 5, 5]

[6, 6, 5, 4, 4]

[5, 5, 1, 1, 3]

[5, 4, 1, 2, 3]

[5, 1, 3, 3, 3]

[6, 1, 4, 4, 1]

[7, 1, 5, 5, 5]

]

Path = [(3, 1), (4, 2), (3, 3)]

**# When end and start goals are at the opposite corners of the graph**

***Input File***

world\_map3 = [

[0, 0, 0, 0, 0],

[0, 0, 0, 0, 0],

[0, 0, 1, 1, 0],

[0, 0, 1, 0, 0],

[0, 1, 0, 0, 0],

[0, 1, 0, 0, 1],

[0, 1, 0, 0, 0]

]

adjacency3 = False

start\_goal3 = (0,0)

end\_goal3 = (6,4)

***Output***

Map = [

[14, 13, 12, 11, 10]

[13, 12, 11, 10, 9]

[14, 13, 1, 1, 8]

[15, 14, 1, 6, 7]

[16, 1, 6, 5, 6]

[17, 1, 5, 4, 1]

[18, 1, 4, 3, 2]

]

Path = [(1, 0), (0, 1), (1, 1), (0, 2), (1, 2), (0, 3), (1, 3), (0, 4), (1, 4), (2, 4), (3, 4), (4, 4), (3, 3), (4, 3), (5, 3), (6, 3), (6, 4)]

**# When start and end goals are on the same column**

***Input File***

world\_map2 = [

[0, 0, 0, 0, 0],

[0, 0, 0, 0, 0],

[0, 0, 1, 1, 0],

[0, 0, 1, 0, 0],

[0, 1, 0, 0, 0],

[0, 1, 0, 0, 1],

[0, 1, 0, 0, 0]

]

adjacency2 = False

start\_goal2 = (3,4)

end\_goal2 = (5,4)

***Output***

Map = [

[11, 10, 9, 8, 7]

[10, 9, 8, 7, 6]

[11, 10, 1, 1, 5]

[12, 11, 1, 5, 4]

[13, 1, 5, 4, 3]

[14, 1, 4, 3, 2]

[15, 1, 5, 4, 3]

]

Path = [(4, 4), (5, 4)]

**# When start and end goals are on the same column with an obstacle between them**

world\_map1 = [

[0, 0, 0, 0, 0],

[0, 0, 0, 0, 0],

[0, 0, 1, 1, 0],

[0, 0, 1, 0, 0],

[0, 1, 0, 0, 0],

[0, 1, 0, 0, 1],

[0, 1, 0, 0, 0]

]

adjacency1 = False

start\_goal1 = (0,3)

end\_goal1 = (5,3)

***Output***

Map = [

[12, 11, 10, 9, 8]

[11, 10, 9, 8, 7]

[12, 11, 1, 1, 6]

[13, 12, 1, 4, 5]

[14, 1, 4, 3, 4]

[15, 1, 3, 2, 1]

[16, 1, 4, 3, 4]

]

Path = [(1, 3), (0, 4), (1, 4), (2, 4), (3, 4), (4, 4), (3, 3), (4, 3), (5, 3)]