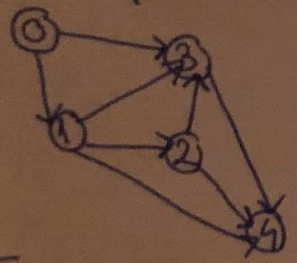
Manual execution

Graph



From 0 to 4

minimum_path(0)

tail = []

predecessor = [ ]

visited = [ ]

[0]

[None, None, None, None, None]

[0] => x = 0

out_neighbours = {1, 3}

[0, 1]

[1]

y = 1 (not visited)

[None, 0, None, None, None]

[0, 1, 3]

[1, 3]

y = 3 (not visited)

[None, 0, None, 0, None]

[1, 3] => x = 1

out_neighbours = {3, 2, 4}

y = 3 (visited) => SKIP

[3, 2]

y = 2 (not visited)

[0, 1, 3, 2]

[None, 0, 1, 0, None]

[3, 2, 4]

y = 4 (not visited)

[0, 1, 3, 2, 4]

[None, 0, 1, 0, 1]

[3, 2, 4] => x = 3

out_neighbours = {4}

y = 4 (visited) => SKIP

[2, 4] => x = 2

out_neighbours = {3, 4}

y = 3 (visited) => SKIP

y = 4 (visited) => SKIP

[4] => x = 4

out_neighbours = { } =>

=> SKIP

[] - empty

return: [0, 1, 3, 2, 4]

[None, 0, 1, 0,]

Final result:
the minimum path is:
p[4] = 1 => 1
p[1] = 0 => 0
So the path is:
0 -> 1 -> 4
The length is:
2