

175. Write a c program to find the minimum path distance by using matrix form.

Test Cases:

1)

{0,10,15,20}

{10,0,35,25}

{15,35,0,30}

{20,25,30,0}

Output: 80

Program: def bellman_ford(matrix):

distances = [float('inf')] * len(matrix)

distances[0] = 0

for _ in range(len(matrix) - 1):

for u in range(len(matrix)):

for v in range(len(matrix)):

if matrix[u][v] > 0 and distances[u] + matrix[u][v] < distances[v]:

distances[v] = distances[u] + matrix[u][v]

return distances[-1]

Test Case 2

matrix2 = [

[0, 10, 10, 10],

[10, 0, 10, 10],

[10, 10, 0, 10],

[10, 10, 10, 0]

]

output2 = bellman_ford(matrix2)

print(output2)

Output:

Output

10

Timecomplexity: $O(n^2)$