



Dijkstra's Algorithm:

DijkstraAlgorithm(graph, source):

distances[source] = 0

priorityQueue = createPriorityQueue()

for each vertex in graph:

if vertex != source:

distances[vertex] = infinity

priorityQueue.add(vertex)

while priorityQueue is not empty:

current = priorityQueue.extractMin()

for each neighbor of current:

tempDistance = distances[current] + distance between current and neighbor

if tempDistance < distances[neighbor]:

distances[neighbor] = tempDistance

return distances

output:

Distances from A:

A: 0

B: 4

C: 7

D: 13

E: 3

F: 6

G: 8

Bellman Ford:

BellmanFordAlgorithm(graph, source):

distances[source] = 0

for i from 1 to |V| - 1:

for each edge in graph:

if distances[edge.start] + edge.weight < distances[edge.end]:

distances[edge.end] = distances[edge.start] + edge.weight

for each edge in graph:

if distances[edge.start] + edge.weight < distances[edge.end]:

// Negative weight cycle detected

return "Graph contains negative weight cycle"

return distances

Output:

Distances from A:

A: 0

B: 4

C: 7

D: 13

E: 3

F: 6

G: 8