```
Dijkstra(graph, start):
 // Create a set of unvisited vertices
 unvisitedVertices = set of all vertices in the graph
 // Create a dictionary to store the shortest distances from the start vertex
  distances = {}
 for each vertex in graph:
      distances[vertex] = infinity
  distances[start] = 0
 while unvisitedVertices is not empty:
      // Find the vertex with the smallest distance
      currentVertex = vertex in unvisitedVertices with the smallest distance
      // Remove currentVertex from unvisitedVertices
      remove currentVertex from unvisitedVertices
      // Update distances to neighboring vertices through currentVertex
      for each neighbor of currentVertex:
          // Calculate the tentative distance
          tentativeDistance = distances[currentVertex] + distance between currentVertex and neighbor
         // If the tentative distance is less than the current distance, update it
          if tentativeDistance < distances[neighbor]:</pre>
              distances[neighbor] = tentativeDistance
  return distances
```

## BellmanFord:

```
BellmanFord(graph, start):
 // Create a list to store the shortest distances from the start vertex
 distances = []
 for each vertex in graph:
     distances[vertex] = infinity
 distances[start] = 0
 // Relax edges repeatedly (V-1) times
 for i from 1 to |V| - 1:
      for each edge (u, v) in graph:
         if distances[u] + weight(u, v) < distances[v]:
             distances[v] = distances[u] + weight(u, v)
 // Check for negative weight cycles
 for each edge (u, v) in graph:
      if distances[u] + weight(u, v) < distances[v]:</pre>
          // A negative weight cycle exists in the graph
return distances
```

## FloyedWarshal:

```
FloydWarshall(graph):
 // Initialize the distance matrix with infinity for all pairs of vertices
 n = number of vertices in graph
 distances = create a 2D array of size n x n
 for each vertex u in graph:
     for each vertex v in graph:
         if u == v:
             distances[u][v] = 0
         else if edge (u, v) exists:
             distances[u][v] = weight(u, v)
          else:
             distances[u][v] = infinity
 // Calculate shortest paths
 for each vertex k in graph:
      for each vertex i in graph:
         for each vertex j in graph:
             if distances[i][k] + distances[k][j] < distances[i][j]:</pre>
                  distances[i][j] = distances[i][k] + distances[k][j]
  return distances
```