Dijkstra's Algorithm

```
procedure dijkstra(G,W,s)

    for each vertex v ∈ V[G] do
        d[v] ← ∞
        π[v] ← NIL
    end for
    outside ← V[G]

    d[s] ← 0
    while outside ≠ φ do
        u ← Extract_Min(outside)
        for each v adjacent to u do
            if v ∈ outside and d[u] + W[u,v] < d[v] then
                d[v] ← d[u] + W[u,v]
                π[v] ← u
            end if
        end for
    end for

end procedure
```

```
procedure dijkstra(G,W,s)

    for each vertex v ∈ V[G] do
        d[v] ← ∞
        outside[v] ← true
        π[v] ← NIL
    end for
    d[0] ← ∞

    d[s] ← 0
    for i = 1 to n do
        u ← 0
        for v = 1 to n do if outside[v] and d[v] ≤ d[u] then u ← v
        outside[u] := false
        for v = 1 to n do if outside[v] and d[u] + W[u,v] < d[v] then
            d[v] ← d[u] + W[u,v]
            π[v] ← u
        end for
    end for

end procedure
```

```
procedure dijkstra(G,W,s)

    for each vertex v ∈ V[G] do
        d[v] ← ∞
        π[v] ← NIL
    end for
    outside ← V[G]

    d[s] ← 0
    while outside ≠ φ do
        u ← Extract_Min(outside)
        for each v ∈ adj[u] do
            if v ∈ outside and d[u] + W[u,v] < d[v] then
                d[v] ← d[u] + W[u,v]
                π[v] ← u
            end if
        end for
    end for

end procedure
```