Floyd's Algorithm

Algorithm to find solution to All-Pairs Shortest-Paths Problem

Input: The weight matrix W of a graph having vertices [1..n]
Output: The distance matrix D of the shortest paths' lengths between every pair of vertices [1..n]
$D \leftarrow W$ `// initially copy the weight matrix into distance matrix`
for $k \leftarrow 1$ *to* n **do**
    for $i \leftarrow 1$ *to* n **do**
        for $j \leftarrow 1$ *to* n **do**
            $D[i,j] \leftarrow min\{D[i,j], D[i,k] + D[k,j]\}$
        end
    end
end
return D

Algorithm 1: Floyd(W [1..n, 1..n])