

Floyd's Algorithm

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

Input: The weight matrix W of a graph having vertices $[1, 2, \dots, n]$
Output: The distance matrix D of the shortest paths' lengths
 $D \leftarrow W$ // initially copy W to D
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)