

## Time complexity:

Considering  $N$  as vertices and  $M$  as roads,  
if the following algorithm will take  $O(N^2)$  time as  
there are two nested loops.

1st loop  $\Rightarrow$  while not  $Q$ .empty  $\Rightarrow N$

2nd loop  $\Rightarrow$  for  $v$  in graph( $v$ ):  $\Rightarrow N$

Here, if all weights are exactly 1, the algorithm  
which is suitable for this problem is B.F.S.