

Shortest paths with negative edge weights

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Only finite number of paths to consider.

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sPath(s,t){  
  if  $s = t$  return {}  
  for each out-neighbour  $s_i$  of  $s$   
     $P_i = s$  || sPath( $s_i, t$ )  
  end for  
  return the shortest among  $P_i$   
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Not proper recursion: Instances on which recursive calls are made are not "simpler" than original instance.

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sPath(i,v){ // shortest v-t path of at most i edges
  if i = 0 and v = t then return null
  if i = 0 and v != t then return "invalid"

  P0 = sPath(i-1,v) // if length(shortest path) < i
  for each out-neighbour vj of v
    Pi = v || sPath(i-1,vj)
  end for

  return shortest valid path among Pi.
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