Dijkstra's Algorithm

input: a graph with distances (weights) on the edges and a starting vertex, say soutput: the shortest distance between s and every vertex in the graphrough strategy: All vertices get tentative distances to vertex s. One-by-one, vertices are explored and tentative distances are updated until minimum distances are obtained.Steps:

- 1. (Initialization Step) Set the tentative distance to be zero for *s* and ∞ for all other vertices.
- 2. (Iterative Step) Find the vertex, say *x*, with the smallest tentative distance *that has not already been explored*.(Break any ties alphabetically.)
 - (a) For every edge between x and a vertex (say y) *that has not already been explored*, calculate the sum of the distance to x plus the distance along the edge to y. If this sum is **smaller** than the tentative distance at y, replace the tentative distance with the smaller value. Otherwise, leave the tentative distance of y unchanged.
 - (b) Mark x as **explored** and record its tentative distance to s as its **minimum** distance to s.
 - (c) If *x* is the last vertex then terminate the algorithm, otherwise return to the beginning of the iterative step.



output	
vertex	minimum distance tos
S	0
a	5
Ь	la
С	10
d	11
e	13