

Single Source Shortest Path Problem.

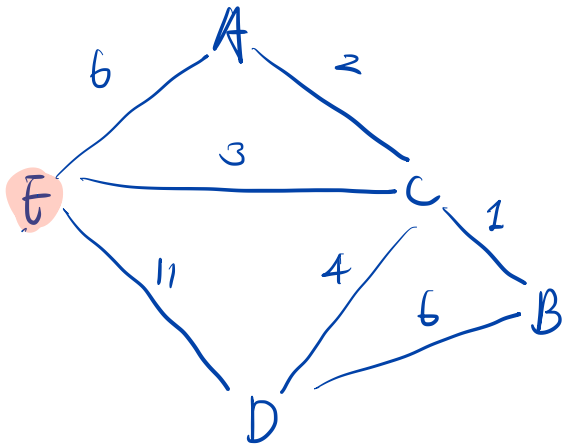
Unweighted graph.

BFS

Weighted graph

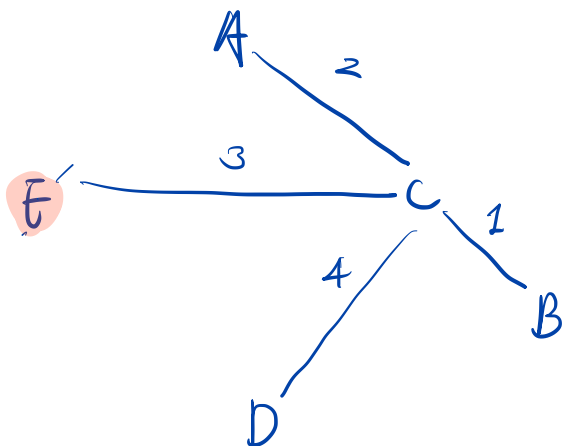
?

Can Dijkstra solve SSSP on weighted graph?

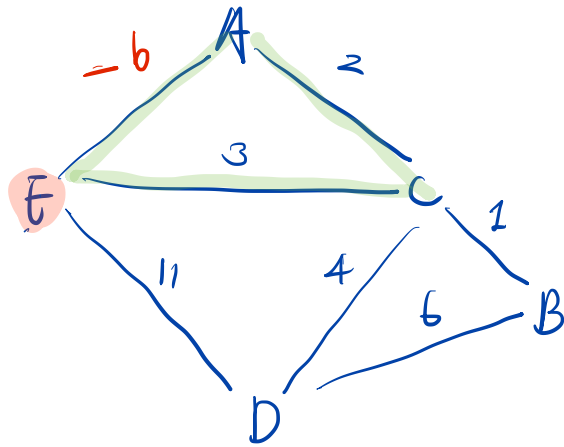


Let's take a look at the late example. (Please note this is undirected graph, which is different from your HW).

Can Dijkstra solve SSSP given the source E?



How about the following graph? Can Dijkstra give us the shortest paths to all other vertices from E?



Extensional Material Keywords:
Bellman-Ford Algorithms

Pokémon Go



Satoshi knows the location of Mew, but he does not have the map.

How can Satoshi arrive where Mew is at?

Question 3. Suppose that we have an infinite supply of pennies (worth 1 cent), nickels (worth 5 cents), dimes (worth 10 cents), and quarters (worth 25 cents). We would like to make change for $n \geq 0$ cents by using the fewest number of coins possible. Use an exchange argument to show that for any $n \geq 0$, an optimal solution to this problem uses either no nickels or one nickel.