

Let's begin at 9:02 PM

L85

Graph Traversals (BFS & DFS)

Join Discord - <https://bit.ly/ly-discord>

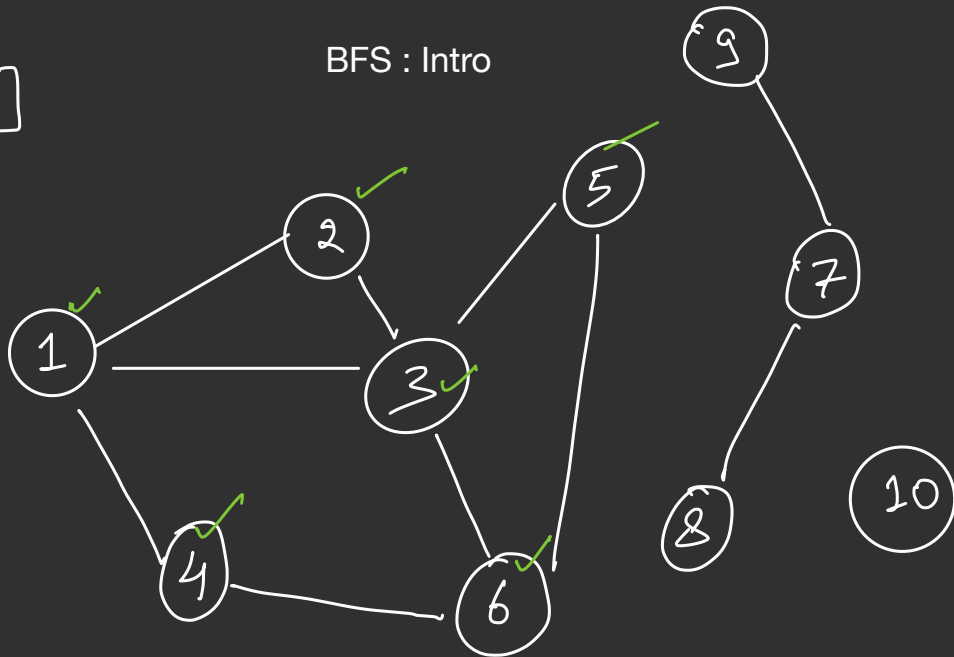
RECAP

Adj. Matrix

Adj. List

BFS : Intro

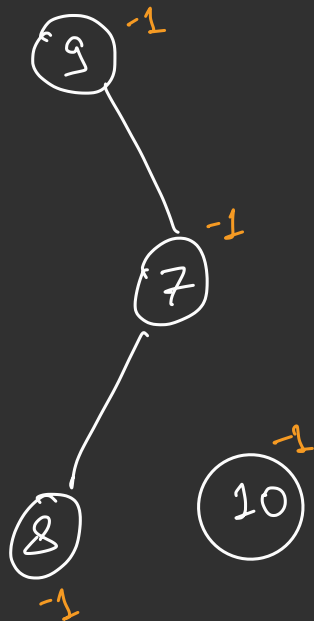
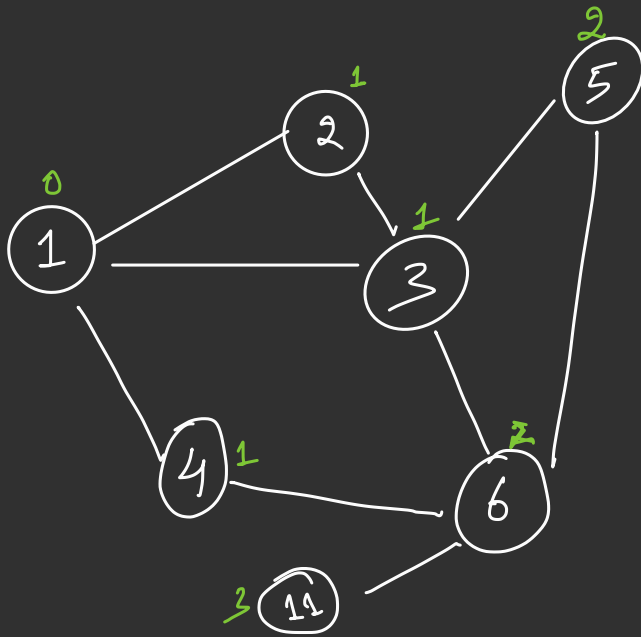
$q = []$



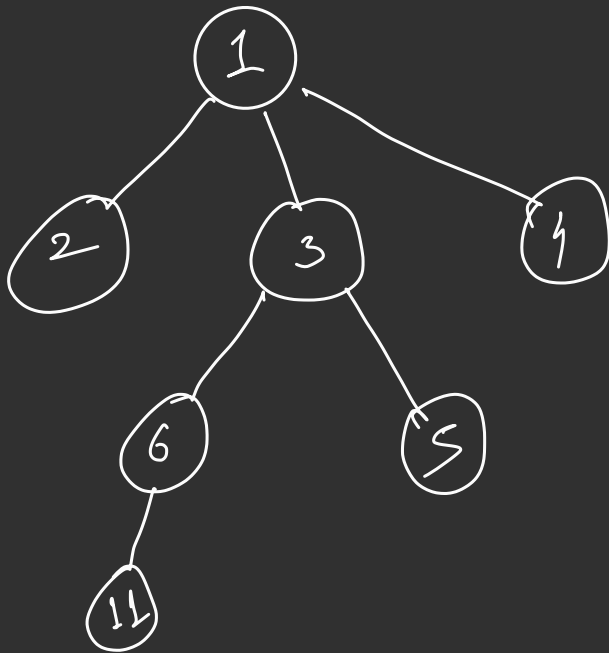
1, 2, 3, 4, 6, 5

BFS for shortest distances

$q = []$



BFS Tree



BFS



Time

$$O(N+M)$$

Space

$$O(N)$$

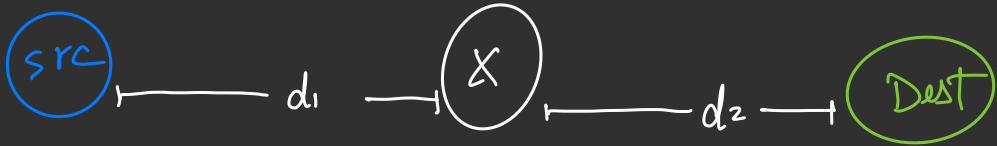
Warm Up Problem

1. Given a graph, an *src* and a *dest* node, print all the nodes which are a part of at least one shortest path from *src* to *dest*. Print -1 if there is no path from *src* to *dest*.

$$1 \leq N, M \leq 10^5$$

$$1 \leq \text{src}, \text{dest} \leq N$$

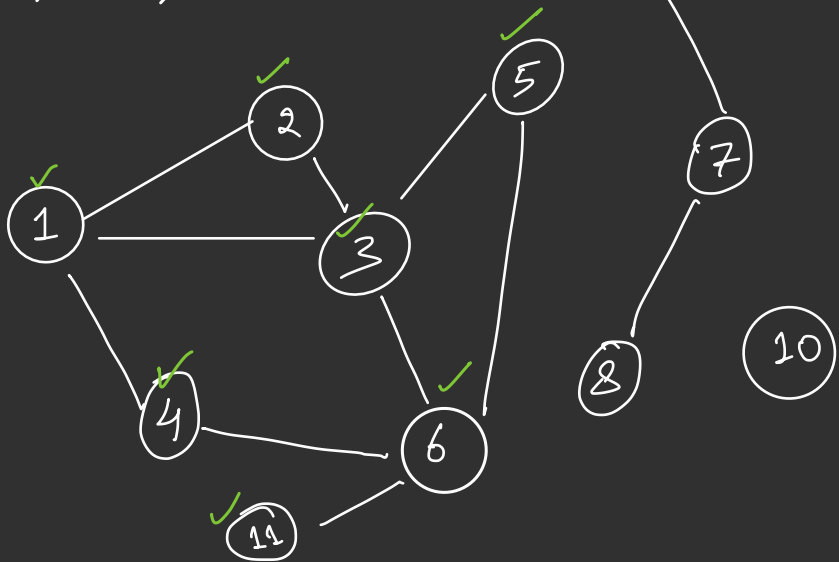
shortest Distance (src & dest) $\Rightarrow d$



if $(d_1 + d_2 == d)$
 $\Rightarrow \text{print}(x)$

1, 2, 3, 5, 6, 4, 11

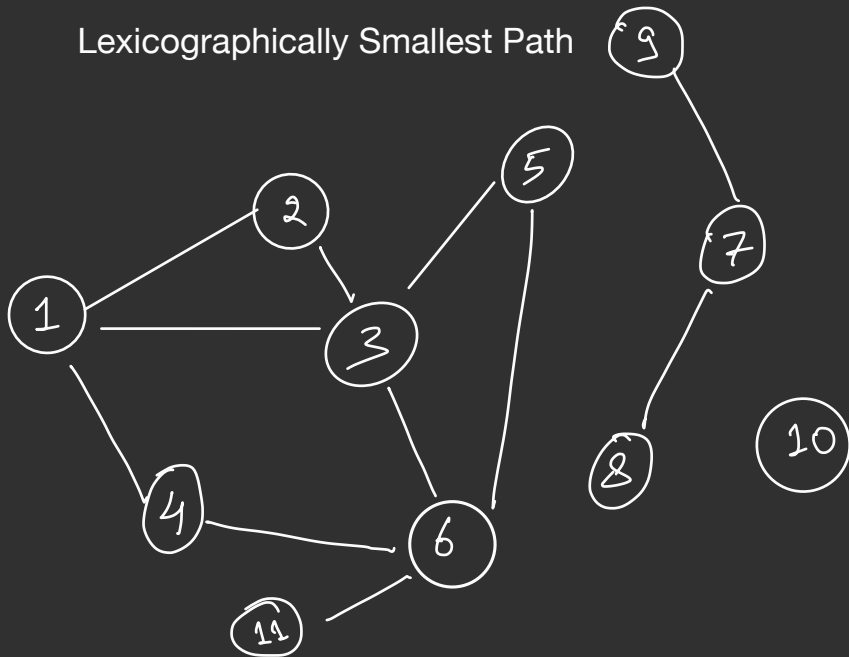
DFS : Intro

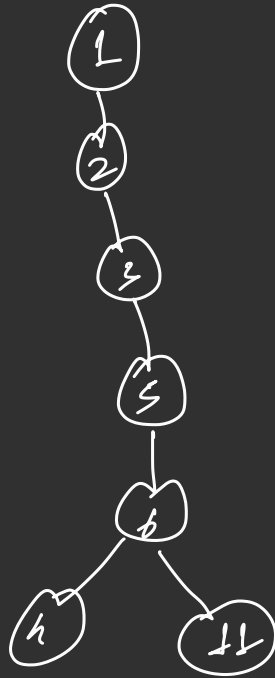


Lexicographically Smallest Path

src = 1

dest = 6





Thank You!

Reminder: Going to the gym & observing the trainer work out can help you know the right technique, but you'll muscle up only if you lift some weights yourself.

So, PRACTICE, PRACTICE, PRACTICE!