

## 1. Single Source Shortest Path (SSSP) : [ Unweighted + BFS ]

How short a distance from all nodes to a selected node.

It will be by using BFS because it traverses level wise which is the shortest path. For this we need a level array.

$\text{Level}[\text{source}] = 0$

While exploring unvisited node we need to update that node's level too.

$\text{Level}[\text{adjacent}] = \text{Level}[\text{prev/head}] + 1$

So distance of all nodes from source will be  $\text{level}[\text{source}] - \text{level}[\text{selected}]$

For **Weighted** graph, BFS won't work, for this we need **Dijkstra Algorithm**

## 2. SSSP in Code : Implementation

## 3. Grid Traversal : 2D Grid/ Maze

First off all Convert the maze into a graph.

Point out source and destination.

Without maintaining adjacency list just by checking up, down, right, left we can traverse.

## 4. Grid Traversal in code : Implementation

Problem solving from CSES : [Labyrinth / Maze](#)