

## BFS

- 1) a) ~~Dijkstra's~~ Algorithm on an unweighted graph.
- b) Array A keeps track of vertices in the queue. 'X' means the vertex ~~has~~ is not in the queue and has not been visited. 'Y' means the vertex is in the queue. 'Z' means the ~~set~~ vertex has been in the queue before, dequeued and visited.
- c) ~~Array B~~ keeps track of the current for a connected graph, every index of array A will be 'Z' at the end.
- c) Array B keeps track of the current shortest distance of the vertex from the vertex S. At the end  $B[S]$  will be 0 and every other index will represent ~~the~~ the shortest distance from S to the vertex that has the value of that index.
- d) C keeps track of the vertex that was previously visited for each vertex in the loop. It keeps track of the previous vertex on the shortest path to each vertex. At the end, C will contain the previous vertex on the final shortest path to each vertex.