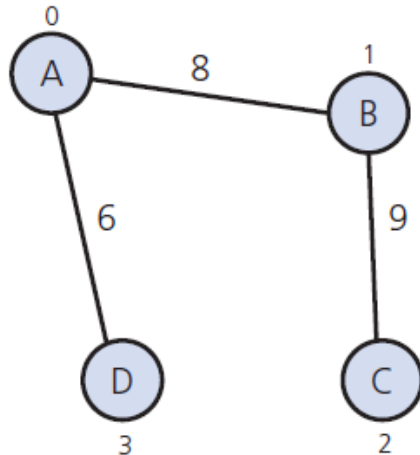# Lab 13

Implement search(..) method in BFS class. The pseudocode for the breadth first search algorithm is given in the following slides.
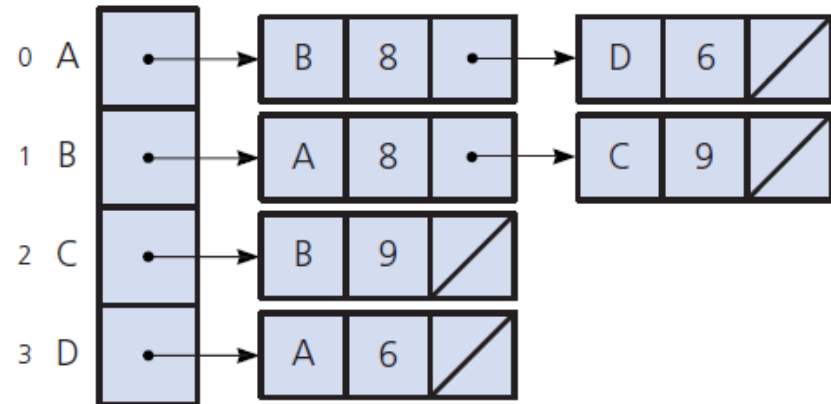
Write a main method, create the graph shown in a).

Add print statements to your search method to show the order of visited nodes.
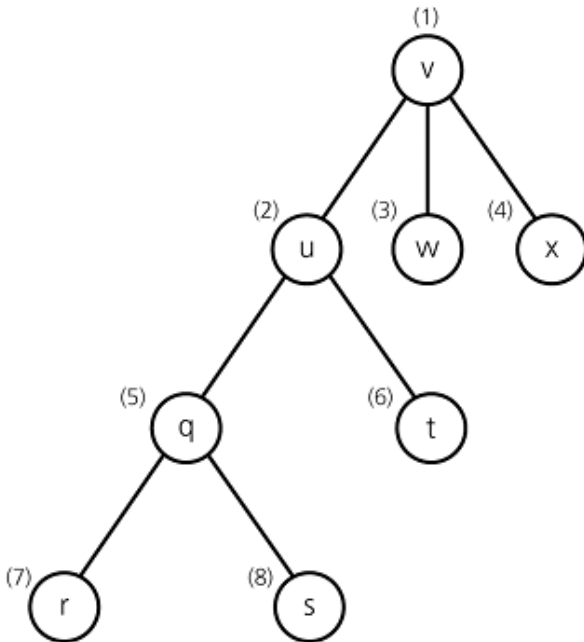

(a)

(b)

Breadth-First Traversal

- BFS is a first visited, first explored strategy
  - Contrast DFS as last visited, first explored

• A breadth-first traversal of the graph starting from vertex v.

• Visit a vertex, then visit all vertices adjacent to that vertex before going forward.

Iterative Breadth-First Traversal Algorithm

```
bft(in v:Vertex) {
// Traverses a graph beginning at vertex v
// by using breadth-first strategy: Iterative Version
    q.createQueue();
    // add v to the queue and mark it
    Mark v as visited;
    q.enqueue(v);
    while (!q.isEmpty()) {
        q.dequeue(w);
        for (each unvisited vertex u adjacent to w) {
            Mark u as visited;
            q.enqueue(u);
        }
    }
}
```