CSC 225: Spring 2018: Lab 9
BFS, DFS, and Their Applications

March 18, 2018

1 Breadth First Search

Implement BFS using the template in "BFS.java". `Hint: use iterative algorithm and a queue.`

2 Iterative Depth First Search

Take the recursive DFS you implemented in the last lab and convert it to the iterative version. You can also use the template in "DFS_iterative.java" in case you don't have your code from the previous lab available. `Hint: use a stack.`

3 Application of DFS and BFS: Bipartite graphs

Write an algorithm to check if a graph is bipartite or not. If the graph is bipartite then print out the two partitions of the vertices. You should use the template in "bipartite.java". You have to implement two methods: "isBipartite" and "printPartitions". Two graphs are provided to test your code. "graph1.txt" contains a graph that is not bipartite whereas "graph2.txt" contains a bipartite graph.