Lab 12

In this lab, you will develop your *undirected* graph package of software. Based on direction from the slides, finish the implementation of the operations on a Graph:

```
boolean areAdjacent(Vertex u, Vertex v)
List getListOfAdjacentVerts (Vertex u)
Graph getSpanningTree()
List getConnectedComponents()
boolean isConnected()
boolean hasPathBetween(Vertex u, Vertex v)
boolean containsCycle()
boolean isTree()
```

DFS and the spanning tree algorithm have already been implemented. You will need to use observations given in the slides to provide the connected components of the graph, determine whether the graph has a cycle, and to determine if there is a path joining two given vertices.

You will also implement BFS.

I have provided a second constructor in Graph that accepts an array of Edges (in the form of Objects). One use for this constructor is that it allows you to return a spanning tree as a Graph object after performing your spanning tree algorithm.

Submit your work on the following classes:

1. BFS.java
2. ConnectedComponents.java
3. Graph.java (updated with new implementations)