Bluetooth Analysis Project - Part 2: Graph Analysis

Comment out the print line of the data

1. Locate the line in BTanalysis that prints the data:

```
System.out.println(data);
```

2. This line is using the toString function of BTdata to print all data from the file
   Comment out or delete the line

```
// System.out.println(data);
```

Add the method to create a graph of contact data

1. Add this method to BTanalysis:

```
public void contactGraph(String name) {
    System.out.println(name);
}
```

2. Add this call to the method in BTmain:

```
analysis.contactGraph("Contact Graph");
```

3. Run the project
   The contactGraph method should output "Contact Graph" to the console

Add a loop to read the data

1. Add this method to the contactGraph method in BTanalysis:

```
BTcontact contact;
data.resetIndex();
while(data.hasNext()) {
    contact = data.readNext();
    System.out.println(contact);
}
```

2. Run the project
   The contactGraph method should output the contact data to the console

Create the JUNG graph from the contact data

1. Add these variables to the contactGraph method in BTanalysis
   Also add the line to initialize the graph field of BTanalysis

```
BTuser user1, user2;
graph = new BTgraph();
```

2. In the while loop from the previous step
   Replace the println statement with these lines to create the graph

```
user1 = new BTuser(contact.getUserID());
user2 = new BTuser(contact.getSeenID());
graph.addVertex(user1);
graph.addVertex(user2);
graph.addEdge(contact);
```

3. In the contactGraph method in BTanalysis,
    To display the graph, add this line after the while loop

    ```
    graph.viewGraph("Contact Graph");
    ```

4. Run the project
    The contactGraph method should now display the graph
    As you view the graph, you can press p or t for pick or transform mode
    When in pick mode, you can click on nodes and drag them around
    When in transform mode, you can drag the graph, or shift drag to rotate
    Also in transform mode, you can use a wheel mouse to zoom

Create JUNG graphs of disease transmission

1. Add the integer field userCount to the BTanalysis class

    ```
    int userCount;
    ```

2. Add these lines to the end of the contactGraph method

    ```
    userCount = graph.getVertexSize();
    System.out.println(userCount);
    ```

3. Download and open the file BTanalysis project part 3.doc
    Copy the method infectionGraph from the BTanalysis class
    Paste the method into your BTanalysis class

4. Add the following lines main method in the BTmain class

    ```
    analysis.infectionGraph("User01", 0.2);
    analysis.infectionGraph("User02", 0.2);
    analysis.infectionGraph("User03", 0.2);
    ```

5. Run the project to view the infection graphs
    You should get the contacts graph showing all contacts
    Then you should get three infection graphs
    The infection graphs use the infectiousness, so they will vary

6. You can also create multiple infection graphs with a loop statement

    ```
    for(int i=1; i<=5; i++) {
        analysis.infectionGraph("User01", 0.3);
    ```