**CMSC203**

**Assignment #1**

Wi-Fi Diagnosis

We all need internet connectivity in this age of lockdowns. What steps should you go through when you do not have connectivity?

**Assignment Description**

Build an application that will step through some possible problems to restore internet connectivity. Assume that your computer uses wi-fi to connect to a router which connects to an Internet Service Provider (ISP) which connects to the Internet.

**Concepts tested by this assignment**

* A driver and a utility class
* UML class diagram or pseudo-code
* Java fundamentals, including decision structures
* Java objects & classes
* Following a flow-chart
* Command-line processing

**Classes**

**Driver Class – WiFiDriver**

* Student created
* This is the driver class that contains a main method.
* The driver is responsible to:
  + print a header
  + ask the user for information about each attempted fix.
  + exit if the user states that the step fixed the problem.
* Add any necessary methods if desired to modularize your code.

**Assignment Details**

The diagnosis will be based on the following flow-chart:

A close up of a map

Description automatically generated

Prompt the user at each step, and if they respond that the step they took fixed the problem, exit the program.

You are required to run the application from the command line and from an IDE (like Eclipse). Take screenshots of two runs of your program with different inputs, one from the command line and one from your IDE.

**Examples/Sample Runs**

If you have a problem with internet connectivity, this WiFi Diagnosis might work.

First step: reboot your computer

Are you able to connect with the internet? (yes or no)

no

Second step: reboot your router

Now are you able to connect with the internet? (yes or no)

no

Third step: make sure the cables to your router are plugged in firmly and your router is getting power

Now are you able to connect with the internet? (yes or no)

yes

Checking the router's cables seemed to work

If you have a problem with internet connectivity, this WiFi Diagnosis might work.

First step: reboot your computer

Are you able to connect with the internet? (yes or no)

yes

Rebooting your computer seemed to work

If you have a problem with internet connectivity, this WiFi Diagnosis might work.

First step: reboot your computer

Are you able to connect with the internet? (yes or no)

no

Second step: reboot your router

Now are you able to connect with the internet? (yes or no)

no

Third step: make sure the cables to your router are plugged in firmly and your router is getting power

Now are you able to connect with the internet? (yes or no)

no

Fourth step: move your computer closer to your router

Now are you able to connect with the internet? (yes or no)

no

Fifth step: contact your ISP

Make sure your ISP is hooked up to your router.

**Deliverables**

**Deliverables / Submissions:**

Design: UML class diagram or pseudo-code (algorithm)

Implementation: Submit a compressed file containing the follow: The Java application (it must compile and run correctly); Javadoc files in a directory; a write-up as specified below. Be sure to review the provided project rubric to understand project expectations. The write-up will include:

* Screen shots
  + One screenshot of the application running from the comand prompt.
  + One screenshot of the application running in your IDE.
* Final design: UML diagram or pseudo-code (revised from initial design if necessary) – as part of write-up or submitted separately, as desired.
* Javadoc
* In three or more paragraphs, highlights of your learning experience
* Screen shot of Java code in your GitHub repo

**Deliverable format:** The above implementation deliverables will be packaged as follows. Two compressed files in the following formats:

* LastNameFirstName\_Assignment2\_Complete.zip, a compressed file in the zip format, with the following:
  + Write up (Word document) - reflection paragraphs, test cases, screenshots
  + Screen shot of WiFiDiagnosis.java in GitHub repository
  + Final design: UML Diagram or pseudo-code (Word or jpg document)
  + doc (directory) – Javadoc
    - * sub-directories as they exist
      * File1.html (example)
      * File2.html (example)
  + src (directory) 
    - * WiFiDiagnosis.java
      * WiFiDiagnosisTest.java
* LastNameFirstName\_Assignment2\_Moss.zip, a compressed file containing one or more Java files:
  + - * WiFiDiagnosis.java

This folder should contain Java source files only