ITEC 120: Principles of Computer Science I

Homework 1

 >>>>>> **Due Date: Friday, January 24th at 10:00PM via Desire2Learn** <<<<<<

In doing this homework, remember to abide by the RU Honor Code.

Problem 1
5 points

Part 1
This homework assignment is meant to help you prepare for the rest of the semester. In order to do well in this class, you will need to setup your computer so that you can write and test Java code on it.

The first step to accomplish this is to install the Java Development Kit (JDK) on your computer. It can be found at the following URL:
http://java.sun.com/javase/downloads/index.jsp [Find the JDK 6 Update 23 section and click download JDK button]. Note: if you have a Mac, the JDK is already installed.

Double click the program once it is downloaded and follow its instructions for installation. Make sure you write down where it installed (needed for the next step).

Next, update your PATH variable so that it includes java. To do this you need to set the PATH variable to have the value "%PATH%;DIR" where DIR is the directory where the javac.exe was installed. This can probably be found in the c:\Program Files\Java\jdk_6_23\bin directory. If it isn't there, navigate around the Program Files folder until you find it.

You can find out how to set an environment variable at the following URL or by using google to find other insturctions:
http://support.tabs3.com/main/R10463.htm

Next, test to make sure you did this properly. Open up a command prompt and type javac. If you get a command not found type of error, then you didn't install java properly or didn't update the environmental variable correctly.

Next, install jEdit so you can use the same editor that is installed in Davis 225. You can download it at the following URL:
http://sourceforge.net/projects/jedit/files/jedit-devel/4.3pre17/jedit4.3pre17install.exe/download

Part 2

A friend of yours has signed up for a credit card and maxed it out. They don't think it is a big deal, but you want them to be aware of what it costs them if they don't pay it off.

The following formulas can be used to calculate the amount of money owed to a credit card company:

AmountOwed = Principal + (Rate*Principal/12)*NumMonths

Your job is to calculate how much your friend will owe after one month, six months, and a year if they do not pay off their credit card immediately. Your friend has charged $2000 to their credit card, and it has an interest rate of 18%. To further emphasize your point, you also need to calculate how much is owed for the three time periods with an interest rate of 28%.

Example output

At 18%
The amount owed after one month is ???
The amount owed after six months is ???
The amount owed after one year is ???
At 28%
The amount owed after one month is ???
The amount owed after six months is ???
The amount owed after one year is ???

Hints:
1. Write down the formulas necessary to calculate each interest payment
2. Translate the formula into corresponding java variables and operations
3. Use a calculator to check and see if you are right
4. Make sure you clearly print out what each piece of data being printed out
5. Come see me in office hours if you are having trouble completing this.

After you are finished writing and testing your program, log into Desire2Learn (learn.radford.edu) and submit the .java file for the homework 1 assignment under the correct place in the dropbox menu. You may come by my office the next school day after this assignment is due to demonstrate your homework to me. If you choose to come by, I can give you personalized feedback on the assignment. If you haven't gotten the assignment work properly, I can help you fix it.

Grading rubric

2 points – Compiles
1 point – Calculates amount owed after one month properly
1 point – Calculates amount owed after six months properly
1 point – Calculates amount owed after one year properly