Assignment 1.2: Math and Conditionals

Due: 8am Monday, September 22nd, 2008

Directions

The problems for this assignment are described below. You will submit this assignment by emailing it to me as a Zip file. The file will be named **Assignment-1.1-LastName.zip**, where [LastName] is obviously your last name. All of your submitted assignments will be named in this fashion. The Zip file will contain a folder of the same name (so, Assignment-1.1-LastName), which will contain a folder for each of the subsequent problems. Each of these subfolders will have the assignment number and name of its particular problem (for example, **Assignment-1.2-quadFormula** or **Assignment-1.2-burgerJoint**). Each of these problem subfolders will contain all of the necessary files for that particular problem. It's very important that you follow all of these naming conventions exactly as specified, or you could lose credit.

Problems

1) quadFormula
You will create a small program to calculate the solutions to the quadratic formula,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a},$$

which yields the solution(s) of the quadratic equation

$$0 = ax^2 + bx + c$$

The program should prompt the user to enter the values of the coefficients a, b, & c and then do the calculation. It should print out the two solutions to the equation (x = ...and ...). For the same of this problem, you may assume that there will always be two solutions to the equation (although in reality, there may be two or one real or imaginary solutions, depending on the discriminant or $\sqrt{b^2 - 4ac}$). You will use the `Scanner` object to get input from the keyboard.

2) burgerJoint
You will create a program that takes a user's order at a fast food restaurant. You will use conditional control stuctures to ask the user if he would like a burger, fries, drink, etc. You will again use the `Scanner` object to get input from the keyboard.

Requirements

1. The first bit of text must be a welcome of sorts to the user, like "Welcome to Wulsin's Palace of Burgers."
2. This restaurant don't necessarily have to serve burgers. It can be any type of food that requires selecting different options. But, you must have *at least* 3 different types of food/drink (for example, burgers, fries, and drinks) that the user must make a decision about. Each type of food/drink should have at least two different options (with different prices).
3. You must test that the user enters the correct input (you should determine how to have the user indicate his choice). If the user accidentally enters an incorrect option, you should indicate as such.
4. As the user inputs his choices, you will keep track of the cost of his order and display it, the tax (assume 6.5%), and the grand total at the end of the order. You will prompt the user for how much he will pay calculate the change (if any).
5. The text in the Console must be formatted nicely, with appropriate spaces and line breaks to make the user interface look presentable.
6. You must use at least one `if...else if...else` control structure in your code.
7. Be creative! Once you get the basics down, feel free to make your menu as complicated as you wish.