Assignment #4 - Android Credit Card Implementation

Date assigned: Tuesday, March 2, 2010
Date due: Tuesday, March 9, 2010
Points: 35

When you get a Credit Card statement for the month, the card shows, among other things, the current card balance, a yearly interest rate, and a minimum payment amount. Assuming that the user of the card is going to make the minimum payment for the given month and not purchase any additional items, you are to add functionality to the Credit Card Helper application as follows:

1) Compute the Final Card Balance for the given month by taking the Card Balance value and subtracting off the Minimum Payment. For example, if the Card Balance entered was $10,000 and the Minimum Payment amount was $150, then the Final Card Balance would be $10,000 minus $150 which equals $9,850.

2) Using the Final Card Balance of $9,850 and Minimum Payment of $150, you are to compute how many months it would take to pay off the Credit Card. The number of months is to be a whole number.

3) Calculate the total amount of Interest Paid until the credit card is paid off.

4) Program the COMPUTE button to calculate the Final Card Balance, Months Remaining, and Interest Paid. Place each of these values into the proper widgets on the screen.

5) Program the CLEAR button to clear all EditText fields.

6) Find an appropriate graphic to use as an icon for your application. Note in your code where you found the graphic unless you decide to create your own graphic.

Notes:

1) When the user selects the COMPUTE button, make sure the user has valid entries for the Card Balance, Yearly Interest Rate, and Minimum Payment. If any of these fields are empty, you are to display an Alert. So for instance, if the user failed to enter a value for the Credit Card Balance, you are to pop up an Alert as follows:

The Alert title is to be called: **Input Error**

The Alert is to read **Enter Card Balance ($) needs a positive value (such as 1000.00)**. Notice the **Enter Card Balance ($)** is the exact same string as the string shown in the Credit Card Helper application. The other two alerts are to use the same strings as shown in the application UI.

2) Assume the interest is calculated on a monthly basis.

3) Output all interest and monetary values as doubles to two decimal places.

4) When the user hits the COMPUTE or CLEAR buttons, set the focus to the EditText widget to the right of the text Enter Card Balance ($).

5) I don't want to see duplicate code in your solution. Use well-defined methods to make your code easily readable, easy to debug, and to eliminate duplicate code.

Goals for Assignment #4:

1. Provide functionality for an Android UI
2. Better understand event-driven programming
3. Write exception handling code
4. Learn about alerts and write code to handle alerts
5. Use more of the Java API
6. Use string resource variables instead of hard coding text in the properties field

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1. Save your Android project in a project folder called PUNetIDCreditCard. Then drop the entire folder into the CS360AndroidDrop folder by 1pm on the day in which the assignment is due.

2. Your code is to be written using the development tools specified in the syllabus. Remember, I will be testing your app in a Windows emulator.

3. If you come to me with a question regarding your solution, I will have you load your project onto a machine in the CS lab. I will not look at your code on your computer or on paper as it just takes me too long to get at the problem. Further, I want you to bring in your textbook and lecture notes in case I want you to look up something. Remember, I'm not just a tell you the answer guy. Make sure you understand how to use the developer tools and that you can run your program on the emulator.

4. If you want help with a compiler error, you must be able to tell me exactly what statement you put in your code that caused the error and be able to isolate the error. If you have typed in a bunch of code and have not tested your code as you've gone along, I'm not going to help you sort out the mess. You've been warned!!

5. Print out all code generated for this assignment. Do not print out any XML code.