**Assignment #1 - Android UI Design**

Date assigned: Monday, October 31, 2011
Date due: Monday, November 7, 2011
Points: 50

You are to write an Android application that helps people with their home buying by performing simple calculations on a home mortgage. Below you will see the application that I would like you to develop. There are two buttons that are not visible which are Compute and Clear.
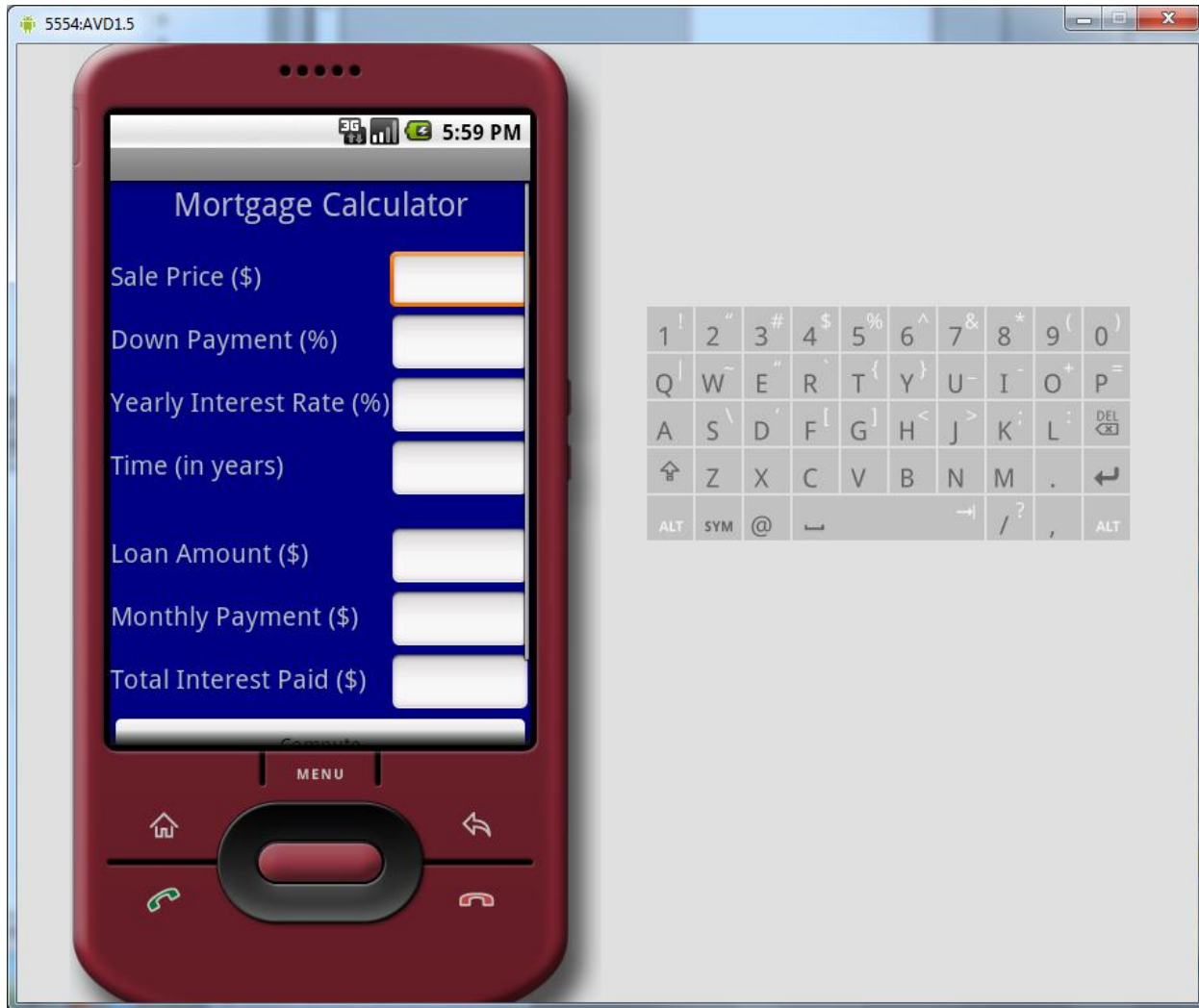
There are three main visible UI widgets in this application:
- TextView
- EditText
- Button

You can see that there are eight TextView widgets, seven EditText widgets, and two Button widgets. For each TextView widget you create, use an id that begins with **txt** and then a good description. For example, the first TextView widget might be called **txtSalePrice**. The EditView widget to the right is called **editSalePrice**. The Compute button widget is called **btnCompute**.

Please note the spacing in the UI. Also, there are several things with this UI that are not visible but that I want you to make sure is taken care of in this application.

1) The first four EditText widgets are to allow the user the ability to enter only legal dollar amounts. If the user hits return, move to the next EditText widget.

2) The next three EditText widgets should not allow the user the ability to enter anything in the widget. These three widgets will be used to output values that the application computes from the user's input.

3) Make sure that the entire UI is inside of a ScrollView as the entire UI might not be displayed on the entire screen.

4) The main activity is to implement a menu with two menu options:

> (a) About – this simple activity merely displays developer information:
> > Developer Name: (your name)
> > Developer Company: (Pacific University)
> > Email Contact: (your email address)

> (b) Amortization Table – this activity is more complicated in that you are to display a monthly amortization table for each month for the life of the loan based on the user input. You will need to design the view in code based on the user input. A limited amount of information needs to be passed between activities. The amortization table is to show: (1) the balance of the loan for the given month, and (2) the month. Use some coloring scheme so that odd rows have the same color and even rows have the same color. Use colors that contrast well with each other.

Goals for Assignment #1:
1. Implement a simple UI in Android
2. Gain experience with reading and understanding the developers guide
3. Use the design tool for laying out XML inflatable code
4. Design a view using Java code
5. Organize and nest widgets and controls properly
6. Pass information between activities
7. Understand each of the components making up an Android application
8. Use the emulator and an actual device to run your Android application

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Specifics:

1. Save your Android project in a project folder called PUNetIDMortgage. Then drop the entire folder into the **CS260-01 Drop** folder by 4:15pm 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 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.   You are to print out each .java file fully documented using the Java Coding Standards V1.0.

6.   Run your UI on the Nexus One and make sure the UI works in Portrait and Landscape mode. I want to see your running application by 4:15pm on the day in which the assignment is due.

Mortgage Information:

The formula to compute the monthly payment is: $M = PR(1+R)^N/((1+R)^N-1)$ where P is the amount of the loan, R is the monthly interest rate, N is the number of monthly payments, and M is the monthly payment.

So for a loan of $87,000 at 7.75% for a period of 30 years (360 months) the loan balance on a mortgage goes like the following:

LOAN BALANCE	MONTHLY PAYMENT	INTEREST PORTION	PRINCIPAL PORTION	FINAL BALANCE	MONTH
$87,000.00	$623.28	$561.88	$61.40	$86,938.60	1
$86,938.60	$623.28	$561.48	$61.80	$86,876.80	2