



Faculty of Engineering and Applied Science

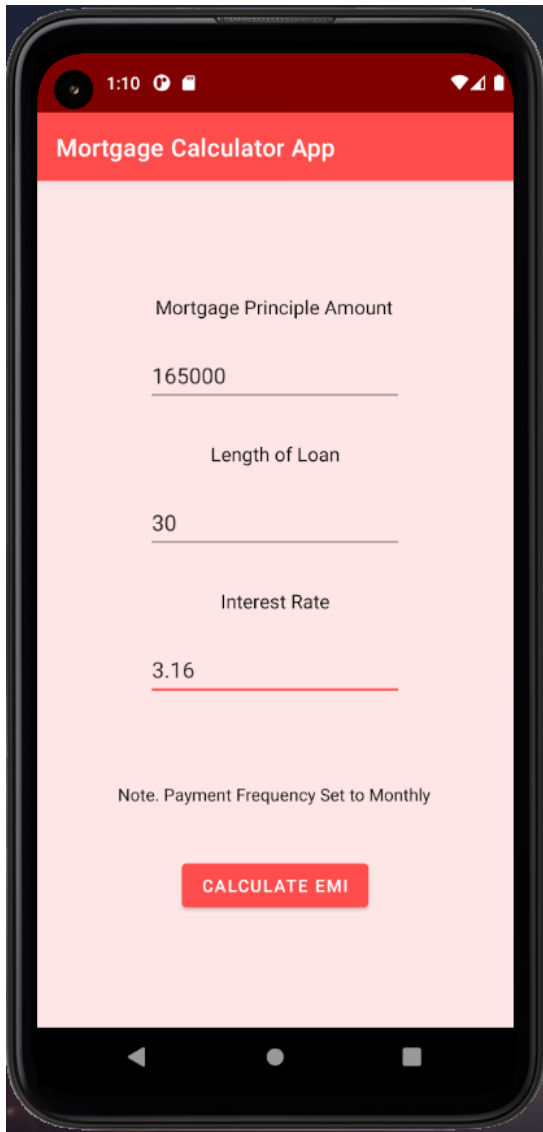
Course:	SOFE4640U: Mobile Application Development
Assignment:	#1
Topic:	Basic Android
Due date	Oct. 14, 2021 11:59 pm

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Assignment: Mortgage Calculator App

Github Link: <https://github.com/esam191/MortgageCalculatorApp>



Home Page: MainActivity.java

Layouts, Views, and Intents: I used the **ConstraintLayout** for the main activity page. I chose to use **ConstraintLayout** for this assignment because it's flexible and easy to use with the layout editor. I was able to create a large layout without any nested view groups as shown on the left.

The layout consists of four **TextViews**, for the mortgage principal amount, amortization period, interest rate, and payment frequency. The payment frequency is set to monthly by default as instructed in the lab manual for simplicity purposes. Three number views are used, for the users to enter the respective values to calculate the monthly mortgage payment.

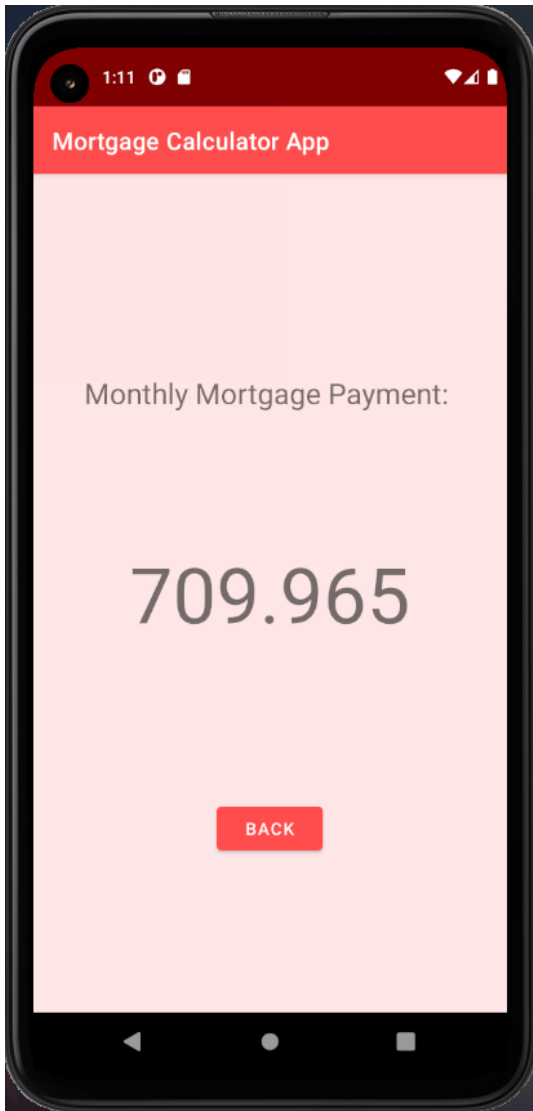
There is also a button used from which the users will be navigated to the 'result activity' where the mortgage monthly payment is displayed. Here, an **explicit intent** is used to navigate from one activity to another. When the user clicks on the button, an intent is created and the value of the result which is the monthly mortgage payment is passed to the 'result activity' by using the `putExtra()` method. Then lastly, the intent was started using the `startActivity()` method.

Component Tree

Layout:	Constraint Layout
Button:	- calculate_button
NumberView(dec):	- interest_box
NumberView:	- years_box
NumberView(dec):	- amount_box
TextView:	- interestText
TextView:	- mortgageText
TextView:	- yearsText
TextView:	- freqText

As shown in the image above, a principal amount of \$165,000 was filled, with an amortization period of 30 years, as well as an interest rate of 3.16%. The user then proceeds to click on the "CALCULATE EMI" button, and the calculation is displayed in the next activity as shown in the image on the following page.

The **component tree** on the left lists out all the views and buttons that the layout consists of.



Mortgage Page: ResultActivity.java

Layouts, Views, and Intents: I also used the ConstraintLayout for the result activity page for the same reasons. It's quite simple and flexible to use and all we really do in this activity is display the calculation. For that, there are two TextViews used, one for the Monthly Mortgage Payment text, and of course, another one to display the result.

There is also a back button used to go back to the previous activity where the user can calculate another payment if they wish to do so. Another explicit intent is used here to start the previous activity. The intent is created when the back button is clicked and the `getDoubleExtra()` method is used to receive the double value of the calculation that was passed in the previous activity. The `startActivity()` method is used again to start this intent. Finally, the result is displayed in the appropriate format.

For further information related to the code, please see the respective code files for both activities. In order to adhere to best coding practices, appropriate variable/method naming conventions were used and the high-level functionality is properly documented.

The component tree below lists all the TextViews and buttons that were used for this activity within the layout.

Component Tree

Layout:	Constraint Layout
Button:	- back_button
TextView:	- freqText
TextView:	- freqText