# *Programming V (420-B51-HR)*

# *Assignment 1 – Android Multiple Activities*

Date assigned: Wednesday, September 20, 2017

Date due: Wednesday**, October 4, 2017**

**Learning Objectives**

Upon successful completion of this assignment, the student will be able to:

* Create an Android application with multiple activities
* Use Dialog and Toast messages
* Use different Android widgets

To do:

1. You are going to create an app which calculates the present or future value of an amount based on the input parameters.
   1. Future value is the value that an investment will be worth after a given time at a given interest rate. It is calculated using the formula FV = (PV)\*(1+*i*)^*t*. Where PV is the starting value, *i* is the interest rate per time period and *t* is the number of interest periods.
   2. Present value is the current value of an amount of money at some point in the future. It is calculated using the formula PV = FV / (1+*i*)^*t* where the letters are as above.
2. In this app, start with an activity which allows the user to enter the following values: Either the present or future value, the annual interest rate (as a % of 100), the frequency at which the interest is calculated and the number of years. You must perform error checking on the fields to make sure that proper values are entered.
   1. Interest rate must be between .5% and 10%.
   2. Time must be between 1 and 50 years
   3. Frequency of interest calculation is: monthly, quarterly, semi-annually or annually.
3. When the values have been filled out correctly do the following:
   1. If calculating the Present Value, call a new activity with the values to calculate the present value of the amount. Make sure you display it properly as currency.
   2. If the Future Value is requested, call a new activity to display the future value of amount entered. IN ADDITION display a table to the year, interest and future value for each YEAR of the investment, like:

|  |  |  |
| --- | --- | --- |
| Year | Interest | Total |
| 1 | $20.00 | $1,020.00 |
| 2 | $20.40 | $1,040.40 |
| 3 | $20.81 | $1,061.21 |

**Notes**

1. Design both the code using effective programming strategies.
2. You must use appropriate controls and appropriate design so that the screen is properly displayed.
3. Use appropriate Toast messages to display information for the user.
4. Proper naming conventions are required.
5. An appropriate icon is required.
6. Use external references for all strings, colours, images, dimensions, etc.

**To submit**

When you have completed the assignment, submit a zip file with all the files from the document folder to the Moodle page for this course.