

Lab Assignment 2: A Simple Calculator (5%)

Introduction

The calculator is one of the essential applications in any mobile device. In this lab assignment, you will design, develop, and test a simple calculator.

Objectives

After completing Lab Assignment 2, you will be able to:

- Write design specs for a mobile app
- Identify design challenges
- Prepare a test plan
- Build a simple calculator
- Deliver on-time

App Description:

In this lab, you will develop a Simple Calculator App. The **minimum** calculator requirements are:

- supports addition, multiplication, subtraction and division.
- supports memory call, memory add, memory subtract and memory recall features.
- a separate Equal button.
- supports a decimal point (4-digit precision) and negative sign.
- You should identify the maximum number of digits that can be displayed in the TextView for results.

A full list of the requirements is outlined in the marking rubric table below.

Assignment Submission

Instructions

- Submit a project report that contains a copy of the XML and JAVA code along with screenshots of your app as a PDF file to LMS
- Submit a copy of your application.apk to LMS

Marking Rubric

Your mark will be determined by the level of functionality you achieve for your Simple Calculator Application created in Android, as outlined in the following marking rubric table.

Component	Marks	Description
Presentation/Documentations	5	Code must be clearly commented and documented. Full mark will be given for adequate commenting and professional presentation of deliverables.
Basics functionality	45	All bare basic requirements of a calculator are satisfied and basic functionality is working perfectly. Requirements for basic functionality include: <ul style="list-style-type: none">• Support for "running" calculations, as usual: $1+33-18*3$, showing the intermediate result and history of operations every time you hit the next operator.• Display text field and numeric buttons, "+/-", and decimal point• Basic operational buttons, including equal, clear, and backspace.
Usable calculator	25	Basic and complete calculator. In addition to above, includes: <ul style="list-style-type: none">• Simple memory (store, recall, clear, add-to), the usual.• Excellent design, including clear feedback on button pushes, and status of operation. Could include sound, flashing, highlighting, color, etc.• Adapts/scales reasonably to changes in device screen orientation.
User Interface quality	25	Credit will be given for the inclusion of one or more extra features, such as: <ul style="list-style-type: none">• Flash window that shows your name and a welcome message as it starts.• Full scientific calculator• Allow switch between decimal, hex, and octal, and binary.• Allow switch between normal, fixed point, and scientific notation.• "Settings" screen: can set decimals places, coloring options for negative values, etc.• Your own idea for a feature that is useful and interesting...
TOTAL	100	