

**Mobile App Development**  
In-Class Assessment 1 (1 Hour)

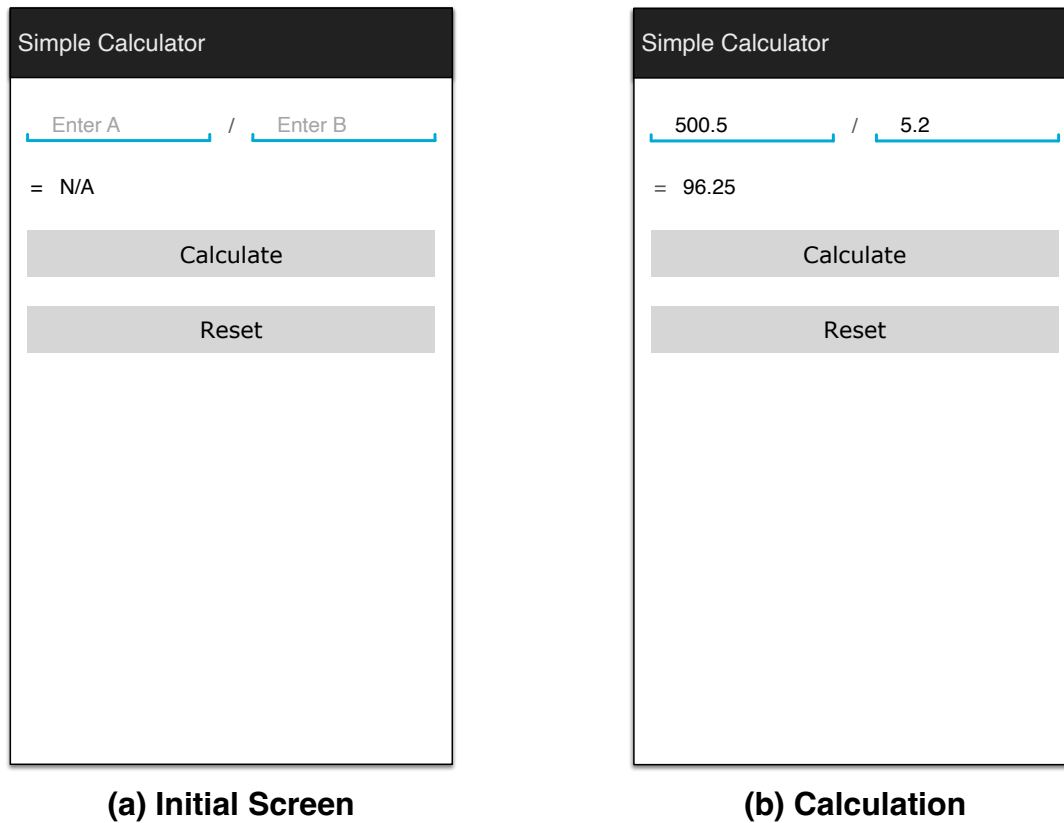
**Basic Instructions:**

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1. This is an In Class Assessment, which will count for 10% of the total course grade.
2. This assessment is an individual effort. Each student is responsible for her/his own assessment and its submission.
3. Once you have picked up the assessment, you may not discuss it in any way with anyone until the assessment period is over.
4. During the assessment, you are allowed to use the course videos, slides, and your code from previous home works and in class assignments. You can use the internet to search for answers. You are NOT allowed to use code provided by other students or solicit help from other online persons.
5. Answer all the assessment parts, all the parts are required.
6. During the assessment the teaching assistants and Instructors will pass by each student and ask them to demonstrate their application. Your interaction with the teaching assistants and instructors will be taken into consideration when grading your assessment submission.
7. Please download the support files provided with the assessment and use them when implementing your project.
8. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will lose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
9. Create a zip file which includes all the project folder, any required libraries, and your presentation material. Submit the exported file using the provided canvas submission link.
- 10. Do not try to use any Social Messenger apps, Emails, Or Cloud File Storage services in this exam.**
- 11. Failure to follow the above instructions will result in point deductions.**
- 12. Any violation of the rules regarding consultation with others will not be tolerated and will result disciplinary action and failing the course.**

### **In-Class Assessment 1 (100 Points)**

In this assignment you will build your first Android application. You will get familiar with some common Android components. You will build a discount calculator application.



**Figure 1, Application User Interface**

#### **Part 1 (100 Points):**

The interface should be created to match the user interface presented in Fig 1. You will be using layout files, and strings.xml to create the user interface. To build the UI, please follow the following tasks:

1. The string values used for all the labels used in this application and should not be hardcoded in the layout file.
2. Use the "Hint" attributes for the EditText should be setup as shown in Fig 1.
3. Clicking the "Calculate" button should:
  - a. If A or B are missing then show a Toast message indicating the error.
  - b. If B is zero show an error message indicating the error (cannot divide by zero)
  - c. If A and B are entered correctly then calculate  $A/B$  and present the result as shown in Fig 1(b). The result should be formatted to 2 decimal places.
4. Clicking the "Clear" button should clear the form and bring it back to the initial state shown in Fig 1(a).

<b>Section:</b>	
<b>Student Name:</b>	
<b>Student ID:</b>	

Part #	Features	Total	Grade	Comments
P1	UI and constraints setup correctly	30		
P1	Input validation and errors reported correctly	30		
P1	Displayed result formatted to 2 decimal places	20		
P1	Clear button and bring back the UI to initial state	20		
	<b>Total</b>	<b>100</b>		

**Table 1: Grading Key**

### Bonus (20 Points):

Update the interface to match Fig 2, the requirements are:

- Similar to Fig 1 but enables the user to pick the operation.
- Clicking the “Calculate” button should:
  - Same error checking Fig 1.
  - If A and B are entered correctly then calculate based on the operation ( $A+B$ , or  $A-B$  or  $A*B$  or  $A/B$ ) and present the result as shown in Fig 1(b). The result should be formatted to 2 decimal places.
- Clicking the “Clear” button should clear the form and bring it back to the initial state shown in Fig 1(a).

Simple Calculator

+

= N/A

Operation: ☒ Add

☐ Subtract

☐ Multiply

☐ Divide

Calculate

Reset

**Figure 2, Bonus Part**