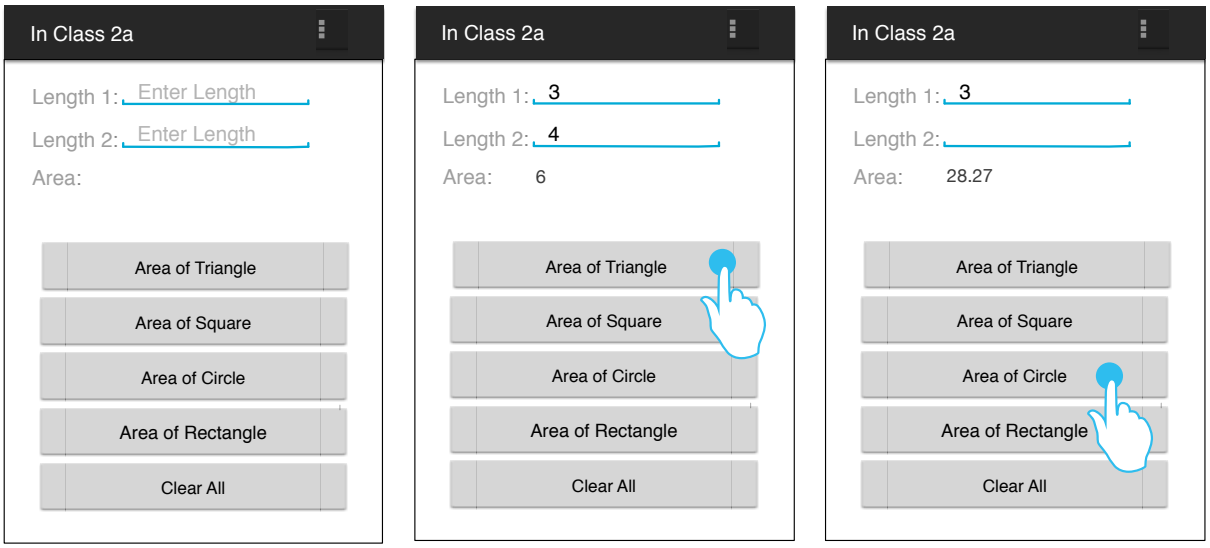
ITIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 2

Basic Instructions:

1. In every file submitted you MUST place the following comments:
   a. Assignment #.
   b. File Name.
   c. Full name
2. Each team is required to submit the assignment on Canvas.
3. Please download the support files provided with this assignment and use them when implementing your project.
4. Submission details:
   a. Compress the contents of your project folder. The file name is very important and should follow the following format: **InClass02.zip**
   b. Only one group member is required to submit on behalf of the whole group.
   c. You should submit the assignment through Canvas: Submit the zip file.
5. The required Android Virtual Device (AVD) should have **minimum SDK version set to 14 and target SDK at 23**.
6. **Failure to follow the above instructions will result in point deductions.**

In Class Assignment 2 (100 Points)

In this assignment you will build your first Android application. You will get familiar with some common Android components and how to interact with them. You will build an area calculator application comprising of a single activity. **The required Android Virtual Device (AVD) should have minimum SDK version set to 14 and target SDK at 23.**



(a) Initial Screen **(b) Area of a Triangle** **(c) Area of a Circle**

Figure 1, Application User Interface (Part 1)

Part 1 (50 Points): Using Buttons

The interface should be created to match the user interface presented in Figure 1(a). You will be using layout files, and strings.xml to create the user interface. The layout XML file can be modified through the raw xml, or through the GUI tools provided within Android Studio. To build the UI, please follow the following tasks:

1. Create a new android project called “In Class 2a”.
2. The string values used for the button labels should be read from the strings.xml file and should not be hardwired in the layout file.
3. This is a simple distance calculator that performs area calculation using given values of Length 1 and Length 2 fields. Each button will perform the logic of the corresponding area calculation and display the area in the Result TextView in the format shown in Figure 1(b) and Figure 1(c). The formula for calculating the area of Triangle, Square, Circle and Rectangle are as follows:
   a. Triangle: Area = 0.5 x base x height
   b. Square: Area = side x side
   c. Circle: Area = π x radius x radius
   d. Rectangle: Area = length x width
4. Use the “Hint” attribute to set the “Enter Length” grayed out hint in the EditView of the input field for Lengths.
5. Your code should check for special cases such as when no length is entered, invalid

number and special characters. In such cases, display a **Toast** message indicating the error, and prevent the conversion.

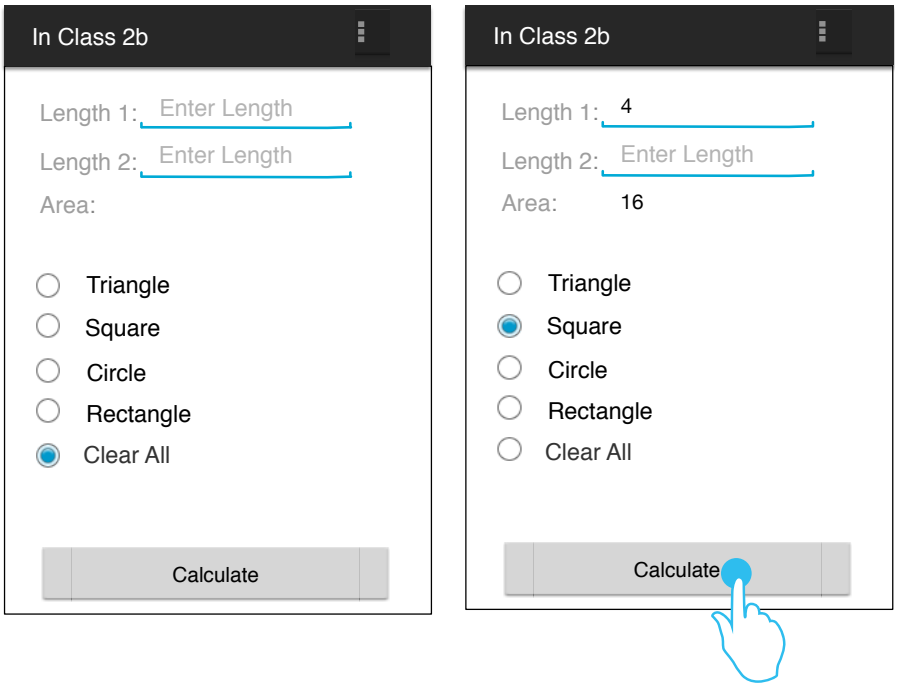
6. ClearAll: should clear the entered values and the result, and set them to their default grayed out hints “Length 1”, “Length 2” and “Area” respectively (See Figure 1(a)).

NOTE: If the area calculation only needs one dimension then the app should clear the contents of the second un-used edit text upon clicking the button or calculate in case of the radio button

Part 2 (50 Points): Using Radio Buttons

The interface should be created to match the user interface presented in Figure 2(a). You will be using layout files, and strings.xml to create the user interface. The layout XML file can be modified through the raw xml, or through the GUI tools provided within Android Studio. To build the UI, please follow the following tasks:

1. Create a new android project called “In Class 2b”.
2. The string values used for the button labels should be read from the strings.xml file and should not be hardwired in the layout file.
3. This is an app similar to the app in Part 1 with only one difference, instead Radio Buttons will be used instead of Buttons. You are asked to properly use Radio Group and Radio Buttons to check which operation is being selected and perform it accordingly when the user clicks the “Calculate” button.
4. The app should function similar to the app in part 1.



(a) Initial Screen **(b) Calculate the Area of a Square**

Figure 2, Application User Interface (Part 2)