

ITIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 02

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 (if there is any) 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_Group#.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.
 - d. You will have two zip files in this assignment. So, zip them again into one zip to submit.
5. The required Android Virtual Device (AVD) should have **minimum SDK version set to 14**.
6. **Failure to follow the above instructions will result in point deductions.**

In Class Assignment 02 (100 points)

This is the first graded assignment. You will be developing two applications with your partner. First, the BMI calculator and next, the Weight Estimator. Both of the applications will be utilizing the variations of the same formula. The formula for calculating Body Mass Index (BMI) is:

$$\text{BMI} = (\text{Weight in Pounds} / (\text{Height in inches} \times \text{Height in inches})) \times 703$$

1 foot = 12 inches

Part A (BMI Calculator, 50 points):

The wireframe shows a smartphone screen with a black header bar containing the text "BMI Calculator". Below the header is a white content area. At the top of this area is the text "Body Mass Index (BMI)" followed by a blue horizontal line. There are three input fields: "Weight" with the value "176" and the unit "lb", "Height" with the value "5" and the unit "feet", and another "Height" field with the value "7" and the unit "inches". Below these fields is a grey button labeled "Calculate BMI". At the bottom of the screen, it displays "Your BMI: 27.6" and "You are Overweight".

Figure 1: BMI Calculator Wireframe

The interface should be created to match the user interface presented in Figure 1. Try to design it as similar as possible, however, it is recommended to give more time to implement the logics first. Please follow the following instructions:

1. Create a new android project named "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 the first application you will develop. Here you will develop the BMI calculator using the aforementioned formula.

4. First, use a TextView to display the String, “Body Mass Index (BMI).”
5. Next, use another TextView to display the String “Weight”.
6. Then, use an EditText to create an input form for taking Weight input.
7. Subsequently, display Height TextView, two EditTexts to take Height inputs.
8. Display a button having the String, “Calculate BMI”.
9. Finally, Display your results using two TextViews.
 - a. First, display your BMI.
 - b. Second, you need to display the current BMI status. BMI Categories are:
 - Underweight = <18.5
 - Normal weight = 18.5–24.9
 - Overweight = 25–29.9
 - Obesity = BMI of 30 or greater
10. When you click on the button, you should calculate and display the result accordingly. Display a Toast having the message, “BMI Calculated”.

Weight Estimator

Target Weight

BMI Ranges

☐ < 18.5

☒ 18.5 to 24.9

☐ 25.0 to 29.9

☐ > 29.9

Height

5 feet

7 inches

Calculate Weight

Your weight should be in between
121.0 to 159 lb

Figure 2: Weight Estimator Wireframe

Part B (Weight Estimator, 50 points):

The interface should be created to match the user interface presented in Figure 2. Please follow the following instructions:

1. Create a new android project named "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 the second application you develop. Here you will develop the Weight Estimator using a variation of the aforementioned formula. Rearrange the formula yourself to calculate the weight in Pounds.
4. First, use a TextView to display the String, "Target Weight."
5. Next, use another TextView to display the String "BMI Ranges".
6. Then, use Radio buttons to create four ranges of BMIs:
 - <18.5 : Underweight
 - 18.5 to 24.9 : Normal
 - 25 to 29.9 : Overweight
 - >29.9 : Obese
7. Subsequently, display Height TextView, two EditTexts to take Height inputs.
8. Display a button having the String, "Calculate Weight".
9. Finally, Display your results using a TextView.
10. When you click on the button, you should calculate and display the result accordingly. Here, you get four ranges of BMIs.
 - For <18.5 you should display the message, "Your weight should be less than <CALCULATED_VALUE> amount".
 - For > 29.9 you should display the message, "Your weight should be greater than <CALCULATED_VALUE> amount".
 - For any range in between, display two calculated marginal weight values according to Figure 2.
11. Display a Toast having the message, "Weight Calculated".

NOTE: All the inputs must be non negative Real numbers. You need to check for any anomaly in case for inputs. If any invalid input is given, your applications should Toast a message, "Invalid Inputs."

Good Luck!