Assignment 3:
BMI and Heart Rate Calculator

Learning Objectives:

1. Create more than one activity in an app
2. Build ViewModel classes and create ViewModel instances to interact with activities in an app

Requirements

The app needs to extend Assignment 2 in order to have a second screen that allows the user to enter their age and then calculate and display their maximum and target heart range rates.

For the **main** screen of your app, you need to satisfy the below requirements.

1. The user should be able to enter their **weight** and **height** in English units (pounds and inches). When the user presses the Calculate button, the app calculates and displays the **BMI**. And the app should also display a message such as "Normal" or "Obese" or any other message based on the BMI calculation. Note that this requirement should have been accomplished in your previous assignment.

2. Your app needs to have *three* buttons. (This should be designed in your previous assignment.) First, your app should be able to perform the calculation when the user presses the first button **Calculate**. Second, when a user presses the second button **Clear**, your app would clear the user input and display boxes. Third, when a user presses the third button **Calculate Heart Rate**, your app should be able to take the user to a new screen (**the second screen required by the assignment**) where the user can enter age and then calculate and display maximum and target heart range rates. (In your previous assignment, your third button doesn't act upon the user's interaction. For this assignment, you need to wire up the button so that it can act upon user interactions.)

For the second screen, you need to satisfy the below the requirements:

3. Your app allows the user to enter their age and then calculate and display their maximum and target heart range rates.

The formula for calculating your maximum heart rate is: ***220 - age in years***
Your target heart rate is in a range of *50 to 85 percent of your maximum rate*.

Note that these numbers are just estimates and will vary depending upon the person's health, fitness, and gender, and that everyone should consult their doctor before starting a new exercise plan.

Below is the reference UI you could consider (UI without user input as well the one with input and output)
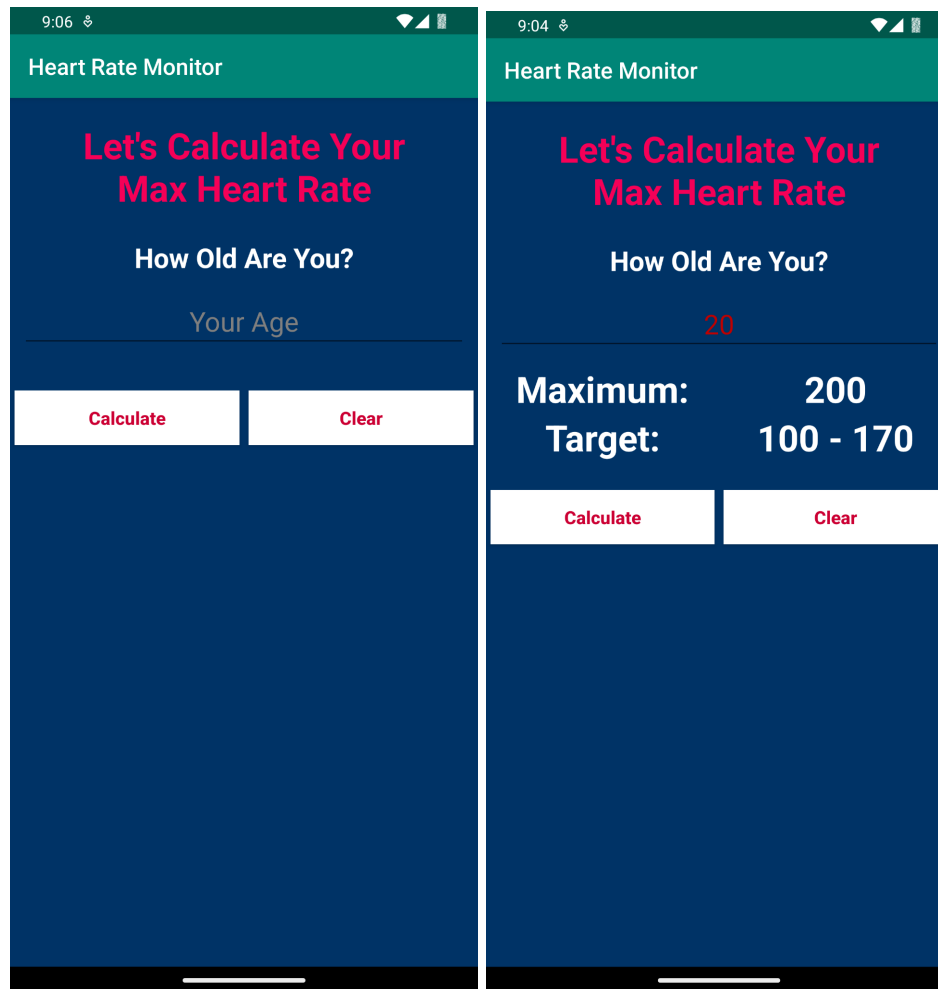
4. You will also need a **Clear** button on the second screen to the user to clear the input and output.

5. After the user conducts a heart-rate calculation at the second screen and back to the first screen, if the user presses the **Calculate Heart Rate button** again, the app should be able to "**remember**" the previous age input from the user. (Note that your app only needs to remember the age input that has been processed. That means, if the user only made input without pressing the Calculate or Clear button, your app doesn't need to remember the age input.)

Lastly, use your own good judgment in designing the app's layout, but make sure everything is labeled and easy to understand. If you aren't sure, ask.

Notes on Numeric Output Formatting

Floating point numeric output in a text box or log will display decimal places - but you can't control how many without some work. One technique to control the number of decimal places displayed is by making use of a special Java class. Do the following:

import java.text.DecimalFormat;
Create a DecimalFormat object as follows:
df: DecimalFormat = DecimalFormat("#.0") // for 1 decimal places
When you want to display a number, pass it to the *format()* method of this object:
"Number is " + df.format(adouble) // or anything that wants a String

The *format()* method takes a double and returns a String, which is the text representation of the double's value, formatted as specified in the constructor of the DecimalFormat object.

Turn-in

Turn in your application package to Assignment Dropbox folder Assignment 3 BMI and Heart Rate Calculator. You should turn in everything included in your app to the dropbox. You can use the File menu of Android Studio and choose Export to Zip. And then send the zip package to Assignment Dropbox Assignment 3 BMI and Heart Rate Calculator.