CMPE 261: Large Scale Programming
Worksheet 2A

Istanbul Bilgi University

Fall 2023

Tasks

You are expected to implement a BMI (body-mass index) calculator application with the following minimum specifications,

1. Implement two classes, `BMICalculator` and `BMICalculatorApp`.
   (a) `BMICalculator` class is where you do the actual calculations, implement a method called `calculate` that takes `height` (cm) and `weight` (kg) input, converts cm to meters, and performs the following calculation: $\frac{weight}{height^2}$. The method must return a double value.
   (b) Implement another method called `BMItoCategory` which takes a double value (output of `calculate`) and returns a string depending on the value,
      i. below 18.5 is `"underweight"`
      ii. between 18.5 and 24.9 is `"healthy"`
      iii. between 25 and 29.9 is `"overweight"`
      iv. 30 or over is `"obese"`
   (c) `BMICalculatorApp` class will be where you implement your GUI elements, its design is up to you, however it should have the following requirements at minimum,
      i. Input fields for `weight` and `height` inputs.
      ii. Buttons for `reset` and `calculate`. `calculate` should use the `BMICalculator` class in order the perform the BMI calculations and display the result string (eg. 17.3 - Underweight) in the GUI. `reset` button should empty the input fields and result.
      iii. `JLabel`s as indicators for input and outputs.
      iv. *Optionals: You can use JPanel to organize your GUI, implement key events in order the calculate with key presses etc.*

Do not forget to submit and present your work during class.
Explain your code with comments.