Lab Assignment 1: BMI Calculator App (5%)

Lab Description

In this lab, students will develop a Body Mass Index (BMI) Calculator App, designed to calculate the BMI of a user based on their height and weight inputs, and provide feedback on their health status according to predefined BMI ranges. This exercise aims to teach students fundamental skills in Flutter, including input handling, user interface design, and data manipulation.

Lab Objective

➢ To apply Dart programming skills and Flutter widgets to create a functioning mobile app.
➢ To understand the concept of user input, processing data, and displaying output.
➢ To implement app features such as drop-down menus, text fields, and dynamic results based on user interaction.
➢ To practice design principles, ensuring usability and clear instructions within the app.

App Requirements

Your BMI Calculator app must include:

1. Drop-down Menu: Allow users to select their gender (Male/Female).
2. Text Input Fields: For the user to enter height (in cm) and weight (in kg).
3. Output Display: Use a Container to display the calculated BMI and the corresponding health status (Severe Thinness, Normal, Overweight, etc.).
4. Dynamic Content: Based on the gender selected, the app should show an appropriate image (male/female avatar).
5. Reset Functionality: Include a feature to reset the input fields and output.

Submission Instructions

1. Project Report: Submit a PDF that includes:

   o An app description.
   o A screenshot of your application in use.
   o A copy of the Dart code.
   o Any design notes and additional features implemented.

2. Demonstration: Present your app on an emulator or real device to the lab instructor during the lab session. The instructor will provide feedback and assess the app's functionality.
3. Backup: Retain a copy of your project workspace. You may be asked to submit this for further review during the marking process.

Marking Rubric

Component	Marks	Description
Presentation	50%	- Demonstrate the app in front of the instructor, showcasing the functionality and design.
Basic Functionality	35%	- App must meet all the basic requirements (BMI calculation, correct ranges, dropdowns, input fields, reset).
Usability & Design	15%	- Clear instructions on how to use the app, intuitive interface, and acceptable overall design.
TOTAL	100%	

Example of App Usage

1. The user selects their gender from a dropdown menu.
2. The user inputs their height and weight.
3. Upon clicking "Calculate," the app displays the BMI and health status.

HINT:
BMI = Mass(KG)/(Height*Height)m2
Classification: Normal BMI between (18.5 - 2)

Demo UI