JAVA PROJECT REPORT

(Project Term January-May 2023)

(BMI CALCULATOR)

Submitted by

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Course Code : CSE310

Under the Guidance of

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ACKNOWLEDGEMENT

Management is a profession wherein no work can be accomplished without the help and assistance of a large number of people, be it your superiors or subordinates. Completing a task is never a one man's effort. It is often the result of direct or indirect invaluable contribution of a number of individuals. I would like to thank Graphic Era 'Deemed to be University' for providing me with this great opportunity to work on this report. It is indeed a great pleasure to take the opportunity to extend my sincere thanks to all those whose help and guidance made this endeavour a successful one. I wish to express my sincere gratitude to Dr A.S Shukla, for his guidance and support during the study and preparation of the project and report

DECLARATION

We hereby declare that the project work entitled ("Title of the project") is an authentic record of our own work carried out as requirements of Capstone Project for the award of B.Tech degree in ___ CSE_____(Programme Name) from Lovely Professional University, Phagwara, under the guidance of (Name of Faculty Mentor), during August to November 2022. All the information furnished in this capstone project report is based on our own intensive work and is genuine.

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Date:20/04/2023

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Introduction

BMI stands for Body Mass Index. It's a value derived from an individual's height and weight.

With the help of BMI, we can find out whether an individual's weight is healthy or not.

Let's have a look at the formula for calculating BMI:

BMI = Weight in Kilograms / (Height in Meters * Height in Meters)

A person's categorized as Underweight, Normal, Overweight, or Obese based on the BMI range:

BMI Range	Category
< 18.5	Underweight
18.5 - 25	Normal
25 - 30	Overweight
> 30	Obese

For example, let's calculate the BMI of an individual with a weight equal to 100kg (Kilograms) and a height equal to 1.524m (Meters).

BMI = 100 / (1.524 * 1.524)

BMI = 43.056

Scope of the project

The major goal is to keep one's health in good shape. The BMI App provides us with all of the necessary information, such as health recommendations and advice on what to eat and what to avoid. When we enter our height and weight, we are given all relevant information, such as if we are overweight or underweight

A FEASIBILITY STUDY The proposed system should be focus on three primary areas:

1. Technical Feasibility
2. Economic Feasibility
3. Environmental Feasibility
4. Feasibility in Operation

1. Technical Feasibility: This research shows all of the technical details as well as the outcomes. Because of the below-mentioned feature, the project "BMI Calculator" is theoretically viable. The project was created in Android utilising the JAVA programming language, with a graphical user interface.

2. Economic Feasibility: The organisation must determine its overall financial status based on the estimates acquired in the previous portions of the study. There are financial benefits to the project as a result of better information reliability and accuracy. The system has little hardware requirements, which reduces the cost of hardware acquisition.

3. Environmental Feasibility: The method is simpler to use and does not necessitate any specific training. Any special events are alerted to the user through appropriate notifications and messages. The user will have little trouble adapting to the system. The system preserves exceptionally accurate records, and information may be accessible in a matter of seconds

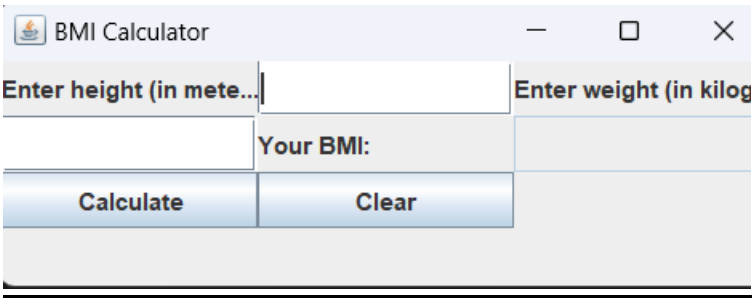
Objective of the Project

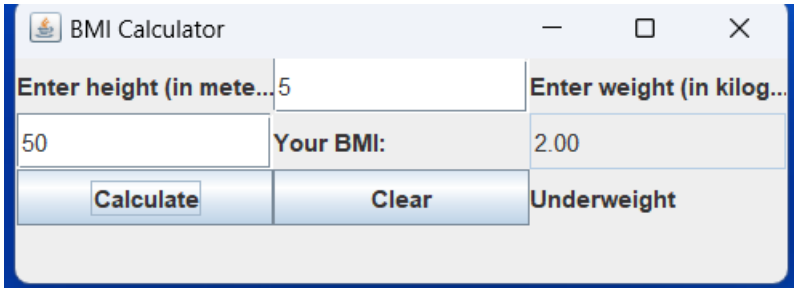
The objective of a BMI (Body Mass Index) calculator is to provide an estimate of a person's body fat based on their height and weight. The calculation is done by dividing a person's weight in kilograms by their height in meters squared. The resulting number provides an indication of whether a person's weight is within a healthy range or if they are overweight or underweight.

The BMI calculation is widely used in the medical field as a screening tool for assessing a person's risk for various health conditions, such as cardiovascular disease, diabetes, and certain cancers. However, it should be noted that BMI is not a perfect measure of body fat and does not take into account factors such as muscle mass or body composition

Despite its limitations, the BMI calculator remains a popular and accessible tool for individuals who are interested in monitoring their weight and overall health status.

Screenshot of the output program





Java program to calculate BMI

The Java program consists of the formula for calculating BMI and simple *if–else* statements. Using the formula and the table above, we can find out the category an individual lies in:

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;

public class BMICalculator extends JFrame implements ActionListener {

    private JLabel heightLabel, weightLabel, bmiLabel, resultLabel;
    private JTextField heightField, weightField, bmiField;
    private JButton calculateButton, clearButton;

    public BMICalculator() {
        setTitle("BMI Calculator");
        setLayout(new GridLayout(4, 2));
        setSize(400, 150);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        heightLabel = new JLabel("Enter height (in meters):");
        weightLabel = new JLabel("Enter weight (in kilograms):");
        bmiLabel = new JLabel("Your BMI:");
        resultLabel = new JLabel("");

        heightField = new JTextField(10);
        weightField = new JTextField(10);
        bmiField = new JTextField(10);
        bmiField.setEditable(false);

        calculateButton = new JButton("Calculate");
        calculateButton.addActionListener(this);
        clearButton = new JButton("Clear");
        clearButton.addActionListener(this);

        add(heightLabel);
        add(heightField);
        add(weightLabel);
        add(weightField);
        add(bmiLabel);
        add(bmiField);
        add(calculateButton);
        add(clearButton);
        add(resultLabel);
```

```
        setVisible(true);
    }

    public void actionPerformed(ActionEvent e) {
        if (e.getSource() == calculateButton) {
            double height = Double.parseDouble(heightField.getText());
            double weight = Double.parseDouble(weightField.getText());
            double bmi = weight / (height * height);
            bmiField.setText(String.format("%.2f", bmi));
            if (bmi < 18.5) {
                resultLabel.setText("Underweight");
            } else if (bmi < 25) {
                resultLabel.setText("Normal weight");
            } else if (bmi < 30) {
                resultLabel.setText("Overweight");
            } else {
                resultLabel.setText("Obese");
            }
        } else if (e.getSource() == clearButton) {
            heightField.setText("");
            weightField.setText("");
            bmiField.setText("");
            resultLabel.setText("");
        }
    }

    public static void main(String[] args) {
        new BMICalculator();
    }
}
```

Conclusion and Result

The package was created in such a way that future changes are simple to implement. The following conclusions can be drawn from the project's progress. The efficiency of the entire system is improved by automating it. It has a user-friendly graphical user interface that outperforms the current system. It grants authorised users appropriate access based on their permissions. It effectively solves the problem of time complexity. It has never been easier to keep information up to date. The most notable features are system security, data security, and dependability. If necessary, the System has enough flexibility to be modified in the future.

Reference: 1)Wikipedia and Some reference books
2)Youtube and Google.

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