

JAVA PROJECT REPORT

(Project Term January-May 2023)

(Quetelet index calculator)

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DECLARATION

We hereby declare that the project work entitled (“**Quetelet index calculater**”) is an authentic record of our own work carried out as requirements of Capstone Project for the award of B.Tech degree in cse from Lovely Professional University, Phagwara, under the guidance of (**Dr. Ranjith Kumar**), during January to April 2023. All the information furnished in this capstone project report is based on our own intensive work and is genuine.

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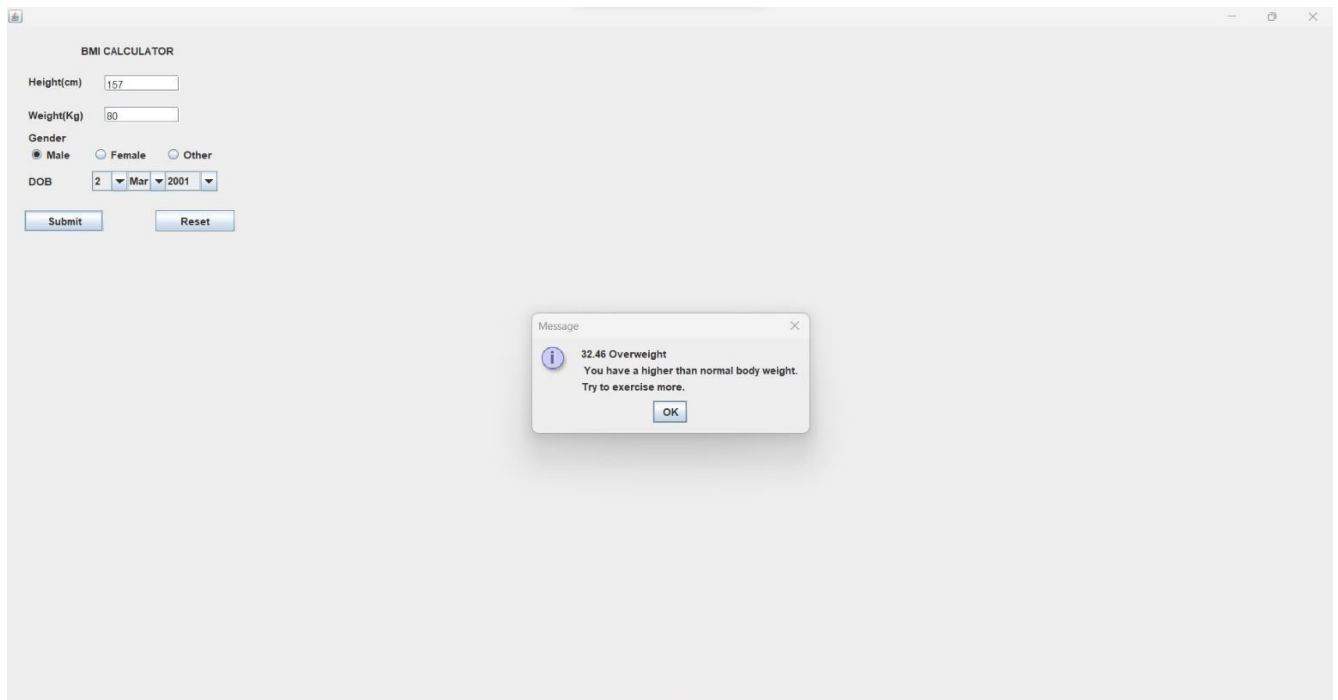
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1. INTRODUCTION :-

Overweight and obesity are significant public health issues in developed and developing countries, not only for adults but also increasingly for children. The issue of body weight as a risk factor for chronic diseases such as diabetes, heart disease, stroke and cancer has increased dramatically over the last decade in Malaysia. In our study, a system has been developed to calculate a person's BMI. In this study, we have developed the system using the java concept in the phase of Graphical user interface programming (GUI) . In this project we have created a BMI (Body Mass Index) calculator using Java program . The program has a graphical user interface (GUI) created using the Swing framework. The user inputs their height (in cm), weight (in kg), gender, and date of birth. Upon clicking the submit button, the program calculates the user's BMI and displays it in a new window, along with a corresponding message about the user's weight status .The program consists of a main method and several helper methods, including the initialize method, which creates the GUI components and sets up event listeners, and the calculate_bmi method, which performs the BMI calculation and displays the result.The program makes use of several Swing components, including JLabels, JTextFields, JRadioButtons, JButtons, JComboBoxes, and JScrollPanes. It also uses a ButtonGroup to ensure that only one gender radio button can be selected at a time. Overall, this program provides a simple and user-friendly way for individuals to calculate their BMI and learn more about their weight status.

2. Proposed Technique

This project is a GUI-based BMI (Body Mass Index) calculator that takes user inputs for height, weight, gender, and date of birth to calculate the BMI and provide a result.



3. Code

```
import java.awt.EventQueue;
import javax.swing.JFrame;
import javax.swing.JTextField;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import java.awt.Font;
import javax.swing.JComboBox;
import javax.swing.JRadioButton;
import javax.swing.ButtonGroup;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.text.DecimalFormat;
import java.awt.event.ActionEvent;
import javax.swing.JScrollPane;
import javax.swing.JPanel;

public class Bmi_Calculator {

    private JFrame frame;
    private JTextField textField;
    private JTextField textField_1;
    private JComboBox comboBox;
```

```

private JComboBox comboBox_1;
private JComboBox comboBox_2;
String day, year, month;
String height = "", weight = "", gen = "", result = "";
private ButtonGroup gengp;
private String dates[] = { "1", "2", "3", "4", "5",
    "6", "7", "8", "9", "10",
    "11", "12", "13", "14", "15",
    "16", "17", "18", "19", "20",
    "21", "22", "23", "24", "25",
    "26", "27", "28", "29", "30",
    "31" };
private String months[] = { "Jan", "feb", "Mar", "Apr",
    "May", "Jun", "July", "Aug",
    "Sep", "Oct", "Nov", "Dec" };
private String years[] = { "1987", "1988", "1989", "1990",
    "1991", "1992", "1993", "1994",
    "1995", "1996", "1997", "1998",
    "1999", "2000", "2001", "2002",
    "2003", "2004", "2005", "2006",
    "2007", "2008", "2009", "2010",
    "2011", "2012", "2013", "2014",
    "2015", "2016", "2017", "2018",
    "2019", "2020", "2021", "2022", "2023" };
public static void main(String[] args) {
    EventQueue.invokeLater(new Runnable() {
        public void run() {
            try {
                Bmi_Calculator window = new Bmi_Calculator();
                window.frame.setVisible(true);
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    });
}
public Bmi_Calculator() {
    initialize();
}
private void initialize() {
    frame = new JFrame();
    frame.setBounds(100, 100, 310, 310);
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    frame.getContentPane().setLayout(null);

    JLabel lblNewLabel = new JLabel("BMI CALCULATOR");
    lblNewLabel.setBounds(86, 12, 142, 33);
    frame.getContentPane().add(lblNewLabel);
}

```

```
JLabel lblHeight = new JLabel("Height(cm)");
lblHeight.setBounds(25, 57, 87, 15);
frame.getContentPane().add(lblHeight);

textField = new JTextField();
textField.setBounds(113, 57, 87, 19);
frame.getContentPane().add(textField);
textField.setColumns(10);

JLabel lblWeight = new JLabel("Weight(Kg)");
lblWeight.setBounds(25, 96, 87, 15);
frame.getContentPane().add(lblWeight);

textField_1 = new JTextField();
textField_1.setColumns(10);
textField_1.setBounds(113, 94, 87, 19);
frame.getContentPane().add(textField_1);

JLabel lblGender = new JLabel("Gender");
lblGender.setBounds(25, 123, 70, 15);
frame.getContentPane().add(lblGender);

JRadioButton rdbtnMale = new JRadioButton("Male");
rdbtnMale.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        gen = "Male";
    }
});
rdbtnMale.setBounds(25, 139, 70, 23);
frame.getContentPane().add(rdbtnMale);

JRadioButton rdbtnFemale = new JRadioButton("Female");
rdbtnFemale.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        gen = "Female";
    }
});
rdbtnFemale.setBounds(99, 139, 87, 23);
frame.getContentPane().add(rdbtnFemale);

JRadioButton rdbtnOther = new JRadioButton("Other");
rdbtnOther.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        gen = "Other";
    }
});
rdbtnOther.setBounds(183, 139, 81, 23);
```

```

frame.getContentPane().add(rdbtnOther);
gengp = new ButtonGroup();
gengp.add(rdbtnMale);
gengp.add(rdbtnFemale);
gengp.add(rdbtnOther);
JLabel lblAge = new JLabel("DOB");
lblAge.setBounds(25, 174, 70, 15);
frame.getContentPane().add(lblAge);

JButton btnSubmit = new JButton("Submit");
btnSubmit.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent arg0) {
        calculate_bmi();
    }
});
btnSubmit.setBounds(20, 215, 92, 25);
frame.getContentPane().add(btnSubmit);

JButton btnReset = new JButton("Reset");
btnReset.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        height = "";
        weight = "";
        result = "";
        day = "";
        month = "";
        year = "";
        gen = "";
        textField.setText("");
        textField_1.setText("");
        comboBox.setSelectedIndex(0);
        comboBox_1.setSelectedIndex(0);
        comboBox_2.setSelectedIndex(0);
        rdbtnMale.setSelected(true);
    }
});
btnReset.setBounds(172, 215, 92, 25);
frame.getContentPane().add(btnReset);
comboBox = new JComboBox(dates);
comboBox.setBounds(99, 169, 42, 24);
frame.getContentPane().add(comboBox);
comboBox_1 = new JComboBox(months);
comboBox_1.setBounds(139, 169, 47, 24);
frame.getContentPane().add(comboBox_1);
comboBox_2 = new JComboBox(years);
comboBox_2.setBounds(183, 169, 61, 24);
frame.getContentPane().add(comboBox_2);
}

```



```

public void calculate_bmi() {
    if (textField.getText().isEmpty() || textField_1.getText().isEmpty() ||
gen.isEmpty()) {
        error();
        return;
    }
    double h, w, r;
    height = textField.getText();
    weight = textField_1.getText();
    day = dates[comboBox.getSelectedIndex()];
    month = months[comboBox_1.getSelectedIndex()];
    year = years[comboBox_2.getSelectedIndex()];
    h = Double.parseDouble(height);
    w = Double.parseDouble(weight);
    r = w / Math.pow((h / 100), 2);
    DecimalFormat df = new DecimalFormat("###.##");
    result = "";
    result += String.valueOf(df.format(r));
    if (r >= 25)
        result += "\t Overweight \n You have a higher than normal body weight.
\nTry to exercise more.";
    else if (r > 18.5)
        result += "\t Normal \n You have normal body weight.\n Good Job!.";
    else
        result += "\t Underweight \n You have a lower than normal body weight.\n
You can eat a it more.";
    JFrame f = new JFrame();
    JOptionPane.showMessageDialog(f, result);
}

public void error() {
    JFrame f = new JFrame();
    JOptionPane.showMessageDialog(f, "Fill all the details", "Alert",
JOptionPane.WARNING_MESSAGE);
}
}

```

4. Conclusion: -

In conclusion, this BMI calculator will give a lot of benefits which consists quick relation between weight and height for people. This system is simple and it would make their works to become easier.

The system also saves cost and time. The purpose of it to make sure that the people can maintain

their health and live in healthy life. By knowing the BMI, people will be able to know real condition of their body where somehow who look fat in real but have the normal BMI and vice versa. During people leisure time, it is important for people to calculate their BMI so that they know the condition that their body are in. Now a days people do not have much time to do some exercise. Thus, with BMI calculator, it is easier for people to plan their activities to prevent from obesity and overweight.

5. Future Enhancements: -

To improve this project, we can include a feature that suggests a healthy range for the user's BMI based on their age, gender, and other factors. This could provide helpful information and encourage the user to strive for a healthy weight. Additionally, it could be useful to include a feature that tracks the user's progress over time and allows them to set goals and track their BMI over a period. This could help motivate the user to maintain a healthy weight and lifestyle.