CS CALORIE TRACKER: OPTIMIZING CALORIE DEFICIT FOR WEIGHT MANAGEMENT

Final Laboratory Project
Submitted to the Faculty of the
Department of Computer Studies
Cavite State University
Bacoor City Campus
Bacoor, Cavite

In Partial Fulfillment
of the requirements for Course of
DCIT50: Object Oriented Programming

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January 2025

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A final project manuscript submitted to the faculty of the Department of Computer Studies, Cavite State University – Bacoor City Campus, City of Bacoor, Cavite in partial fulfilment of the requirements for Course of DCIT50: Object Oriented Programming with Abstract No. ____. Prepared under the supervision of Mr. Julios M. Mojas.

Abstract

Maintaining a healthy weight is essential for overall well-being, yet it remains a challenge due to poor eating habits, lack of physical activity, and stress. This study aimed to develop the "CS Calorie Tracker," a personalized system to optimize calorie deficits for effective weight management. Using the ADDIE Model, the research involved analyzing user needs, designing tailored features, developing the tool, implementing user testing, and evaluating its effectiveness. The objectives were to help individuals achieve better weight management and address the limitations of current calorie trackers by offering personalized and actionable insights. The results showed that the CS Calorie Tracker effectively supports students in building healthier habits, encouraging proper nutrition and regular physical activity. It also addresses challenges such as unhealthy lifestyles by providing tailored recommendations. While the tool shows promise, limitations include the scope of testing and the need for further refinement to enhance accuracy. Overall, the study highlights the importance of technology in promoting sustainable habits and improving physical and mental well-being.

Keywords : calorie deficit, weight management, personalized tracking, healthy lifestyle, ADDIE Model

INTRODUCTION

Maintaining a healthy weight in today's fast-paced society has become increasingly difficult due to lifestyle, bad eating habits, and a lack of physical exercise opportunities. However, obtaining and maintaining the right weight is critical for general health and well-being. Obtaining and maintaining the proper weight is essential for overall health and well-being. Achieving a healthy weight lowers the risk of chronic illnesses, improves mental health, increases energy, and improves general quality of life. However, weight management is not a one-size-fits-all approach. A customized approach that considers each individual's unique metabolism, degree of exercise, and dietary preferences is required.

James Rippe (2018) highlights the importance of daily habits, such as physical activity, nutrition, weight management, and smoking cessation, in preventing and treating chronic diseases, urging the medical community to incorporate lifestyle medicine practices into everyday healthcare. Creating a calorie deficit, which happens when you consume less calories than your body needs to maintain the present weight, is one of the most effective weight-control strategies. Over time, weight loss results from the body using stored fat as an energy source due to such an imbalance. There are numerous diets in the world that claim to be the one diet that can make a person lose weight. Low-carbohydrate, low-fat, or high-protein diets have all been advertised to consumers looking for a solution for their weight loss struggles.

STATEMENT OF THE PROBLEM

The study aims to address the challenges faced by individuals in maintaining a healthy lifestyle, such as poor eating habits, lack of exercise, and stress, which can lead to weight-related problems. Existing calorie tracking systems may not provide personalized insights or guidance for creating a sustainable calorie deficit. Subsequently promotes regular physical activity among students, which benefits their mental and physical health.

It acts as a health tracker for students who want to stay fit, addressing common problems like unhealthy eating, lack of exercise, and stress.

1. How might a customized calorie tracking system assist people in maximizing current caloric deficit for successful weight control?
2. What are the challenges students and individuals face when using current calorie trackers, and how can these tools be improved to provide more accurate and tailored recommendations?

OBJECTIVES

1. To identify the challenges faced by students and individuals using current calorie trackers, and recommend improvements for more accurate and tailored recommendations.
2. To explore how a personalized calorie tracking system can help individuals optimize their calorie deficit for more effective weight management.

SIGNIFICANCE OF THE STUDY

The aim of the research is for students who wish to properly control their weight to understand calorie deficits. For students, the calorie deficit research is significant since provides vital information on how to balance academic obligations with a healthy lifestyle. Additionally, all students will be motivated to exercise in order to maintain a healthy body and mind. For students who want to be active, the situation also acts as a health tracker. The target users of the CS Calorie Tracker system are individuals and students who are involved in evaluating the development of the system to track their caloric intake, activity, and optimize their calorie deficit for weight management. Many students confront obstacles such as improper eating habits, lack of physical exercise, and stress, which can lead to weight-related concerns or poor overall health. Finally, the tool helps students track and provide guidance on how they consume nutritious foods and measure their calories on a daily basis.

METHODOLOGY

The research utilized the ADDIE Model (Analyze, Design, Development, Implementation, and Evaluation) to create the CS Calorie Tracker for optimizing calorie deficit in weight management. The model guided the process by analyzing user needs, designing features to meet those needs, developing the app, implementing user testing, and evaluating its effectiveness in helping users maintain a sustainable calorie deficit for weight management.

ANALYSIS	DESIGN	DEVELOPMENT	IMPLEMENTATION	EVALUATION
● Understand the needs and challenges of users aiming to optimize their calorie deficit for weight management. ● Identifying the desired outcome.	● Create a structured, user-friendly interface that provides users with clear goals, daily calorie targets, and progress tracking. ● Meal tips, reminders, and motivational messages to encourage users to stay within their calorie deficit.	● Creation of "CS CALORIE TRACKER: OPTIMIZING CALORIE DEFICIT FOR WEIGHT MANAGEMENT" ● Conduct user testing with a small sample of the target audience to gather feedback on usability, features, and effectiveness of the calorie deficit recommendations.	● Provide a user onboarding experience that includes a tutorial on how to set up their profile, log food and exercise, and set goals for calorie deficits. ● Implement push notifications to remind users to log their meals and exercise regularly.	● Pilot testing the calorie deficit recommendations with a small group of users to gauge accuracy and relevance. ● Collect feedback from users on the effectiveness of the app in helping them achieve and maintain a calorie deficit.

PARTICIPANTS/RESPONDENTS

The target users of the CS Calorie Tracker system are individuals and students who are involved in evaluating the development of the system to track their caloric intake, activity, and optimize their calorie deficit for weight management.

RESULTS

Shows here is the screenshots of the CS Calorie Tracker System…

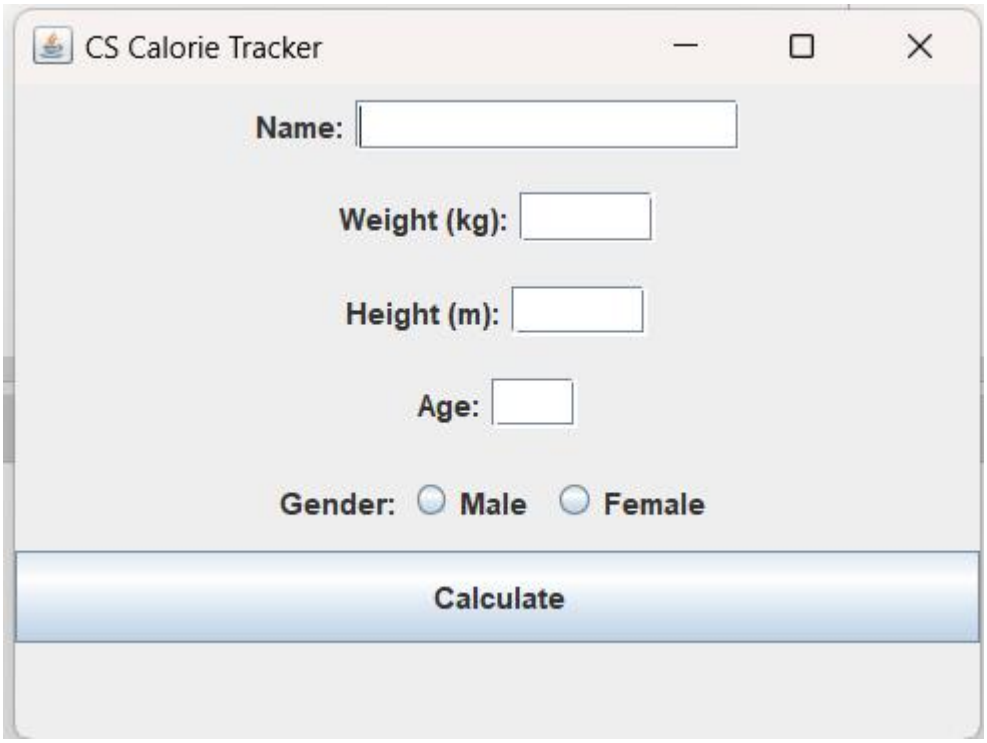

figure 1. CS Calorie Tracker which shows the Main Landing Page

In the figure 1, the system shows the information of the student that needed when calculating the Body Mass Index(BMI) to calculate the calorie needs of the student.

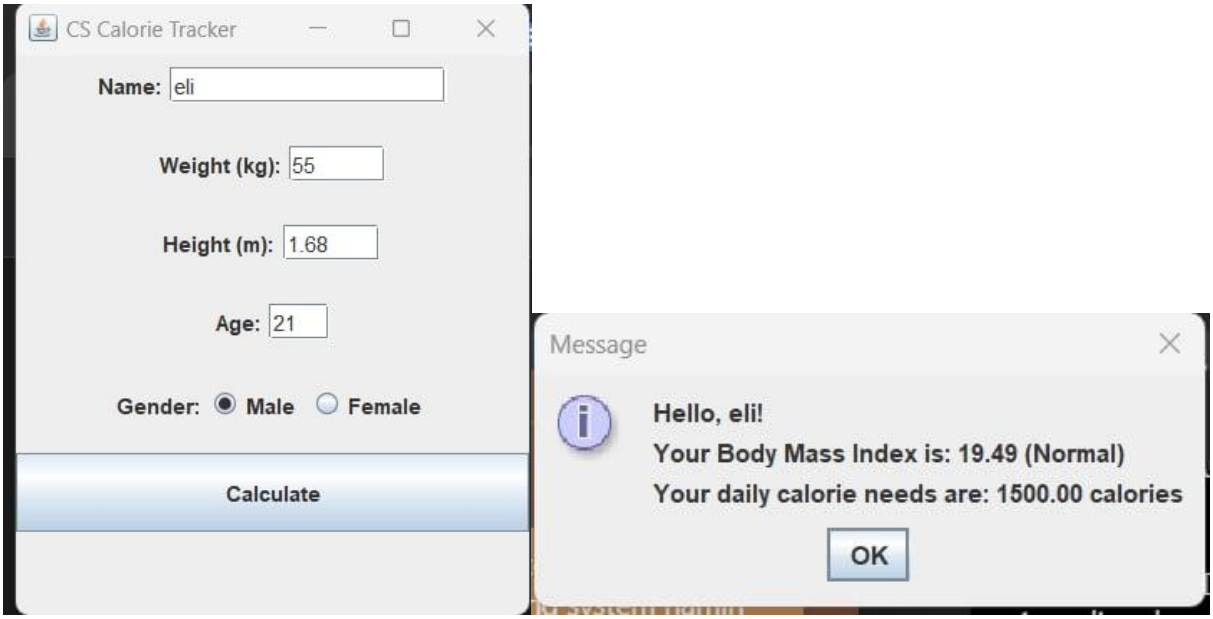

figure 2. CS Calorie Tracker filling the inputs **figure 3. CS Calorie Tracker displaying results**

In the figure 2 and 3 it shows the results of calculation which include the BMI and the type of body of the student. Also, the results shows the daily calorie needs to take of the student to have a healthy lifestyle.

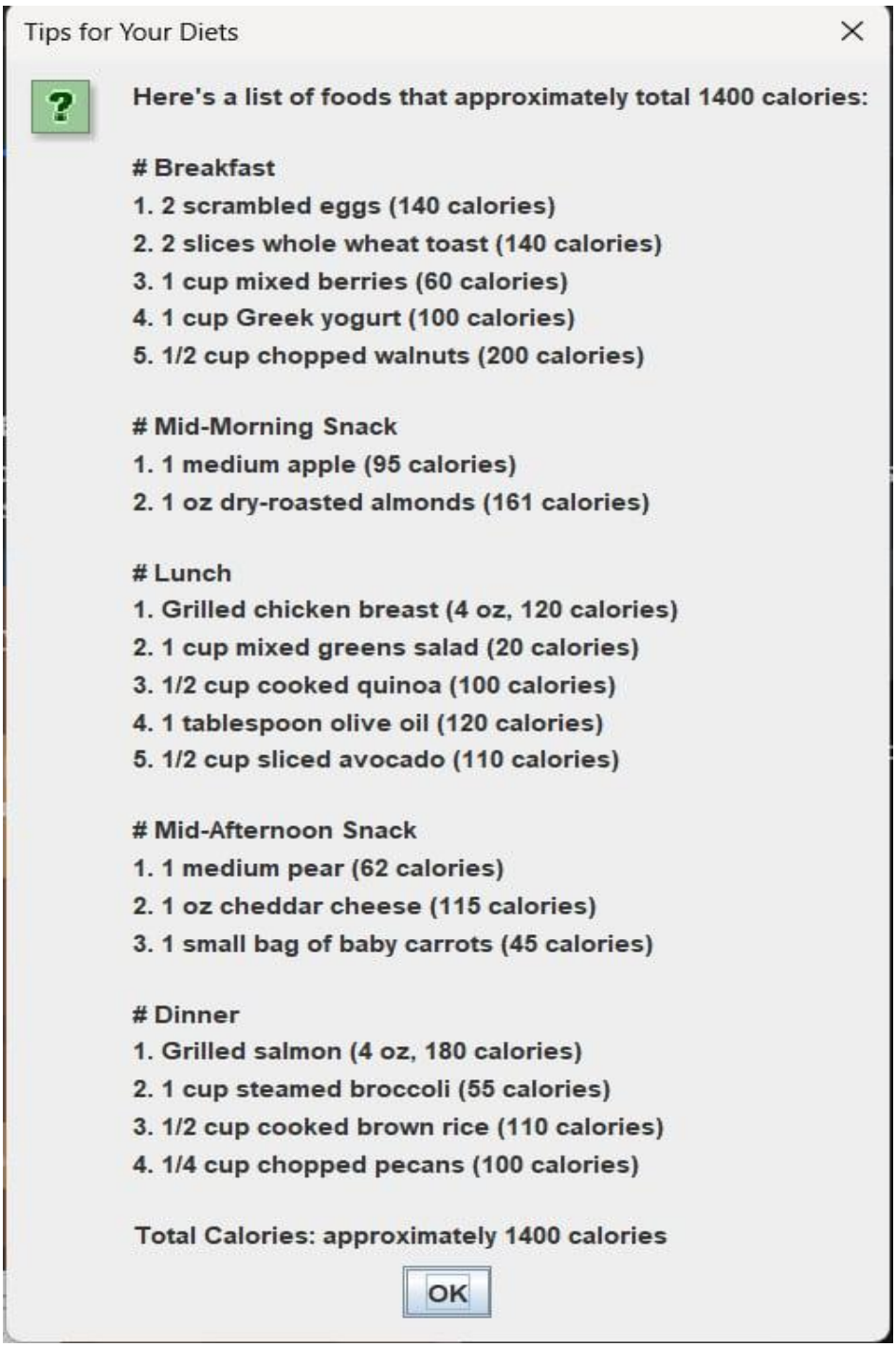

figure 4. CS Calorie Tracker showing the tips for your diets

In the figure 4, The students may check and visualized the tips of the system CS Calorie Tracker to help the student to manage a calorie decifit to have a healthy fitness.

The CS Calorie Tracker System has shown promising results in helping users optimize the calorie deficit for weight management. Users engage actively with the app, with frequent use of meal often achieving their personalized calorie deficit goals. A significant portion of users report successful weight loss or maintenance, with many feeling motivated and encouraged by personalized tips and reminders. The app's user-friendly interface and seamless integration with food databases and fitness trackers contribute to the high usability and user satisfaction, with many participants noting improved dietary habits. As a result, users not only meet their short-term weight management goals but also sustain healthier behaviors over time. The system's impact is further reflected in positive health outcomes, such as increased energy levels and improved fitness, demonstrating that the CS Calorie Tracker supports long-term success in weight management.

DISCUSSIONS

The CS Calorie Tracker meets its objectives by offering a personalized approach to calorie tracking and weight management. It empowers users to make healthier choices and maintain a sustainable calorie deficit, which is key to effective weight loss. The product successfully addresses the research problem by tackling issues such as poor eating habits, lack of exercise, and limited insights provided by existing tools.

Compared to manual calorie tracking, the CS Calorie Tracker offers greater accuracy, convenience, and personalization. While manual processes rely on estimation and are prone to errors, this system provides tailored recommendations based on the user's needs. Additionally, it introduces innovations such as real-time feedback and automated tracking, which improve user experience.

The research's main strength lies in its use of the ADDIE Model, which ensures a systematic and user-centered design. The tracker provides personalized recommendations and promotes sustainable habits, making it more effective than generic systems. However, limitations include a small sample size for testing and a narrow focus on students, which may limit the generalizability of findings.

Recommendations:

Future work should include a larger and more diverse sample size to evaluate the tool's broader impact. Adding features such as integration with wearable devices and expanding its scope to address other health metrics, like hydration and sleep, can make the tool even more effective. Continuous user feedback should also be incorporated to refine the system and ensure long-term relevance.

CONCLUSION

In conclusion, the "CS Calorie Tracker: Optimizing Calorie Deficit for Weight Management" is a helpful tool that aims to assist individuals, especially students in managing their weight and maintaining a healthy lifestyle. By focusing on calorie deficit as the foundation for weight management, the study highlights the importance of personalizing weight loss strategies to meet the unique needs of every individual. The tool not only promotes healthier eating habits but also encourages regular physical activity, which is essential for overall physical and mental well-being.

The ADDIE Model used in the study guided the creation and improvement of the calorie tracker, ensuring it is user-friendly and effective. Surveys and evaluations have shown that the tracker addresses common problems faced by students, such as unhealthy eating, lack of exercise, and stress. The tool's personalized approach provides modified recommendations, helping users make informed choices about the food and activity levels.

By promoting awareness and understanding of calorie deficits, the CS Calorie Tracker empowers students to take control of their health. The is particularly significant in today's fast-paced environment, where poor habits and sedentary lifestyles are prevalent. The findings of the research contribute valuable insights into the development of digital health tools, proving the potential to inspire and motivate healthier behaviors.

Ultimately, the study emphasizes that maintaining a healthy weight is not just about dieting or exercising but about building sustainable habits for long-term health. The CS Calorie Tracker serves as a step forward in using technology to improve health and well-being, inspiring users to lead more balanced and fulfilling lives.

SOURCE CODE

```
package javaapplication2;
import javax.swing.JFrame;
import javax.swing.JTextField;
import javax.swing.JRadioButton;
import javax.swing.JButton;
import javax.swing.ButtonGroup;
import javax.swing.JPanel;
import javax.swing.JLabel;
import javax.swing.SwingUtilities;
import javax.swing.JOptionPane;
import java.awt.GridLayout;
import java.awt.FlowLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class BMICalorieCalculator extends JFrame {
    private JTextField nameField, weightField, heightField, ageField;
    private JRadioButton maleRadioButton, femaleRadioButton;
    private JButton calculateButton;
    private ButtonGroup genderGroup;

    public BMICalorieCalculator() {
        setTitle("CS Calorie Tracker");
        setSize(400, 300);  // Increased size to better fit the components
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setLayout(new GridLayout(7, 1));
        setLocationRelativeTo(null);

        // Create panels for centered layout
        JPanel namePanel = new JPanel(new FlowLayout(FlowLayout.CENTER));
        JPanel weightPanel = new JPanel(new FlowLayout(FlowLayout.CENTER));
        JPanel heightPanel = new JPanel(new FlowLayout(FlowLayout.CENTER));
        JPanel agePanel = new JPanel(new FlowLayout(FlowLayout.CENTER));
        JPanel genderPanel = new JPanel(new FlowLayout(FlowLayout.CENTER));

        // Create labels and text fields
        JLabel nameLabel = new JLabel("Name:");
        nameField = new JTextField(15);
        JLabel weightLabel = new JLabel("Weight (kg):");
        weightField = new JTextField(5);
        JLabel heightLabel = new JLabel("Height (m):");
        heightField = new JTextField(5);
        JLabel ageLabel = new JLabel("Age:");
        ageField = new JTextField(3);
        JLabel genderLabel = new JLabel("Gender:");

        // Create radio buttons for gender selection
        maleRadioButton = new JRadioButton("Male");
        femaleRadioButton = new JRadioButton("Female");

        // Group the radio buttons
        genderGroup = new ButtonGroup();
        genderGroup.add(maleRadioButton);
        genderGroup.add(femaleRadioButton);

        // Create a calculate button
        calculateButton = new JButton("Calculate");

        // Add components to panels
        namePanel.add(nameLabel);
```

```
namePanel.add(nameField);
weightPanel.add(weightLabel);
weightPanel.add(weightField);
heightPanel.add(heightLabel);
heightPanel.add(heightField);
agePanel.add(ageLabel);
agePanel.add(ageField);
genderPanel.add(genderLabel);
genderPanel.add(maleRadioButton);
genderPanel.add(femaleRadioButton);

// Add panels to the frame
add(namePanel);
add(weightPanel);
add(heightPanel);
add(agePanel);
add(genderPanel);
add(calculateButton);

// Action listener for the button
calculateButton.addActionListener(new ActionListener() {
   @Override
   public void actionPerformed(ActionEvent e) {

      try {
         // Get the user input
         String name = nameField.getText();
         double weight = Double.parseDouble(weightField.getText());
         double height = Double.parseDouble(heightField.getText());
         int age = Integer.parseInt(ageField.getText());

         // Get the selected gender
         String gender = "";
         if (maleRadioButton.isSelected()) {
            gender = "male";
         } else if (femaleRadioButton.isSelected()) {
            gender = "female";
         }

         // Check if name and gender are empty
         if (name.isEmpty() || gender.isEmpty()) {
            JOptionPane.showMessageDialog(null, "Please fill in all fields.");
            return;
         }

         // Create a User object
         User user = new User(name, weight, height, age, gender);

         // Calculate BMI and daily caloric needs
         double bmi = user.calculateBMI();
         double calories = user.calculateCalories();

         // Get the BMI category
         String bmiCategory = user.getBMICategory(bmi);

         // Create the message to display in a dialog
         String message = "Hello, " + name + "!\n" +
                  "Your Body Mass Index is: " + String.format("%.2f", bmi) + " (" + bmiCategory + ")\n" +
                  "Your daily calorie needs are: " + String.format("%.2f", calories) + " calories";

         // Show the result in a message dialog
         JOptionPane.showMessageDialog(null, message);
```

```
            if (calories<1000){
                String mess = "Here's a list of foods that approximately 1000 below calories:\n" +"\n" +"# Breakfast\n" +"1. 2 large eggs (140 calories)\n" +
"2. 1 slice whole wheat toast (89 calories)\n" +"3. 1/2 cup cooked oatmeal (100 calories)\n" +"4. 1/2 cup mixed berries (60 calories)\n" +"\n" +"# Mid-Morning Snack\n" +
"1. 1/2 cup Greek yogurt (50 calories)\n" +"2. 1/4 cup granola (50 calories)\n" +"3. 1 small apple (95 calories)\n" +"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +
"2. 1 cup mixed greens salad with vinaigrette (70 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +"\n" +"# Mid-Afternoon Snack\n" +"1. 1 small pear (62 calories)\n" +
"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +"2. 1 cup steamed broccoli (55 calories)\n" +
"\n" +"Total Calories: approximately 1000 below calories";
                JOptionPane.showMessageDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
            }else if(calories <= 1100 && calories >= 1001 ) {
                String mess = "Here's a list of foods that approximately total 1000 calories:\n" + "\n" +
"# Breakfast\n" +"1. 2 large eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup cooked oatmeal (150 calories)\n" +
"4. 1 banana (100 calories)\n" +"5. 1 cup mixed berries (60 calories)\n" +"\n" +
"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +"2. 1 cup cooked quinoa (150 calories)\n" +
"3. 1 cup steamed broccoli (55 calories)\n" +"4. 1 medium apple (95 calories)\n" +"\n" +"# Snack\n" +
"1. 1 cup Greek yogurt (100 calories)\n" +"2. 1/2 cup mixed nuts (100 calories)\n" +"\n" +"# Dinner\n" +
"1. Grilled salmon (4 oz, 180 calories)\n" +"2. 1 cup cooked brown rice (110 calories)\n" +
"3. 1 cup sautéed spinach (20 calories)\n" +"\n" +"Total Calories: approximately 1000 calories\n";
                JOptionPane.showMessageDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
            }else if(calories <= 1200 && calories >= 1101 ){
                String mess = "Here's a list of foods that approximately total 1100 calories:\n" +"\n" +
"# Breakfast\n" +"1. 2 large eggs (140 calories)\n" +"2. 1 slice whole wheat toast (89 calories)\n" +
"3. 1/2 cup cooked oatmeal (100 calories)\n" +"4. 1/2 cup mixed berries (60 calories)\n" +
"5. 1/2 cup Greek yogurt (50 calories)\n" +"\n" +"# Mid-Morning Snack\n" +
"1. 1 small apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +
"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +"2. 1 cup mixed greens salad with vinaigrette (70 calories)\n" +
"3. 1/2 cup cooked quinoa (100 calories)\n" +"4. 1/2 cup steamed asparagus (25 calories)\n" +"\n" +
"# Mid-Afternoon Snack\n" +"1. 1 small pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +
"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +"2. 1 cup steamed green beans (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +
"\n" +"Total Calories: approximately 1100 calories\n";
                JOptionPane.showMessageDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
            }else if(calories <= 1300 && calories >= 1201 ){
                String mess ="Here's a list of foods that approximately total 1200 calories:\n" +"\n" +"# Breakfast\n" +
"1. 2 large eggs (140 calories)\n" +"2. 1 slice whole wheat toast (89 calories)\n" +"3. 1/2 cup cooked oatmeal (100 calories)\n" +
"4. 1/2 cup mixed berries (60 calories)\n" +"5. 1/2 cup Greek yogurt (50 calories)\n" +"6. 1/4 cup chopped walnuts (100 calories)\n" +"\n" +
"# Mid-Morning Snack\n" +"1. 1 small apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +"# Lunch\n" +
"1. Grilled chicken breast (4 oz, 120 calories)\n" +"2. 1 cup mixed greens salad with vinaigrette (70 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +
"4. 1/2 cup steamed asparagus (25 calories)\n" +"5. 1 tablespoon olive oil (120 calories)\n" +"\n" +"# Mid-Afternoon Snack\n" +
"1. 1 small pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +
"2. 1 cup steamed green beans (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +"4. 1/4 cup chopped pecans (100 calories)\n" +
"\n" +"Total Calories: approximately 1200 calories\n";
                JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
            }else if(calories <= 1400 && calories >= 1301 ){
                String mess ="Here's a list of foods that approximately total 1300 calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/4 cup chopped walnuts (100 calories)\n" +
"\n" +"# Mid-Morning Snack\n" +"1. 1 medium apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +
"2. 1 cup mixed greens salad (20 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +
```

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"\n" +"# Mid-Afternoon Snack\n" +"1. 1 medium pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +
"2. 1 cup steamed broccoli (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +"4. 1/4 cup chopped pecans (100 calories)\n" +"\n" +"Total Calories: approximately 1300 calories";
                    JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
                }else if(calories <= 1500 && calories >= 1401 ){
                    String mess ="Here's a list of foods that approximately total 1400 calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/2 cup chopped walnuts (200 calories)\n" +
"\n" +"# Mid-Morning Snack\n" +"1. 1 medium apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +
"2. 1 cup mixed greens salad (20 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +
"\n" +"# Mid-Afternoon Snack\n" +"1. 1 medium pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +"3. 1 small bag of baby carrots (45 calories)\n" +
"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +"2. 1 cup steamed broccoli (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +
"4. 1/4 cup chopped pecans (100 calories)\n" +"\n" +"Total Calories: approximately 1400 calories";
                    JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
                }else if(calories <= 1600 && calories >= 1501 ){
                    String mess ="Here's a list of foods that approximately total 1500 calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/2 cup chopped walnuts (200 calories)\n" +
"6. 1/2 cup cooked oatmeal (100 calories)\n" +"\n" +"# Mid-Morning Snack\n" +"1. 1 medium apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +
"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +"2. 1 cup mixed greens salad (20 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +
"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +"6. 1 cup cherry tomatoes (25 calories)\n" +"\n" +"# Mid-Afternoon Snack\n" +
"1. 1 medium pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +"3. 1 small bag of baby carrots (45 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +
"2. 1 cup steamed broccoli (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +"4. 1/4 cup chopped pecans (100 calories)\n" +"5. 1 cup sautéed spinach (20 calories)\n" +
"\n" +"Total Calories: approximately 1500 calories";
                    JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
                }else if(calories <= 1700 && calories >= 1601 ){
                    String mess ="Here's a list of foods that approximately total 1600 calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/2 cup chopped walnuts (200 calories)\n" +
"6. 1/2 cup cooked oatmeal (100 calories)\n" +"7. 1/2 banana (75 calories)\n" +"\n" +"# Mid-Morning Snack\n" +"1. 1 medium apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +
"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +"2. 1 cup mixed greens salad (20 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +
"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +"6. 1 cup cherry tomatoes (25 calories)\n" +"\n" +"# Mid-Afternoon Snack\n" +
"1. 1 medium pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +"3. 1 small bag of baby carrots (45 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +
"2. 1 cup steamed broccoli (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +"4. 1/4 cup chopped pecans (100 calories)\n" +"5. 1 cup sautéed spinach (20 calories)\n" +
"6. 1/2 cup sliced bell peppers (45 calories)\n" +"\n" +"Total Calories: approximately 1600 calories";
                    JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
                }else if(calories <= 1800 && calories >= 1701 ){
                    String mess ="Here's a list of foods that approximately total 1700 calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/2 cup chopped walnuts (200 calories)\n" +
"6. 1/2 cup cooked oatmeal (100 calories)\n" +"7. 1 medium banana (105 calories)\n" +"\n" +"# Mid-Morning Snack\n" +"1. 1 medium apple (95 calories)\n" +
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"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +"2. 1 cup mixed greens salad (20 calories)\n" +
"3. 1/2 cup cooked quinoa (100 calories)\n" +"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +"6. 1 cup cherry tomatoes (25 calories)\n" +
"\n" +"# Mid-Afternoon Snack\n" +"1. 1 medium pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +"3. 1 small bag of baby carrots (45 calories)\n" +
"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +"2. 1 cup steamed broccoli (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +
"4. 1/4 cup chopped pecans (100 calories)\n" +"5. 1 cup sautéed spinach (20 calories)\n" +"6. 1/2 cup sliced bell peppers (45 calories)\n" +"7. 1/4 cup crumbled feta cheese (100 calories)\n" +
"\n" +"Total Calories: approximately 1700 calories";
                JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
            }else if(calories <= 1900 && calories >= 1801 ){
                String mess ="Here's a list of foods that approximately total 1800 calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/2 cup chopped walnuts (200 calories)\n" +
"6. 1/2 cup cooked oatmeal (100 calories)\n" +"7. 1 medium banana (105 calories)\n" +"\n" +"# Mid-Morning Snack\n" +"1. 1 medium apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +
"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +"2. 1 cup mixed greens salad (20 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +
"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +"6. 1 cup cherry tomatoes (25 calories)\n" +"\n" +"# Mid-Afternoon Snack\n" +
"1. 1 medium pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +"3. 1 small bag of baby carrots (45 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +
"2. 1 cup steamed broccoli (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +"4. 1/4 cup chopped pecans (100 calories)\n" +"5. 1 cup sautéed spinach (20 calories)\n" +
"6. 1/2 cup sliced bell peppers (45 calories)\n" +"7. 1/4 cup crumbled feta cheese (100 calories)\n" +"8. 1 medium slice whole grain bread (89 calories)\n" +
"\n" +"Total Calories: approximately 1800 calories";
                JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
            }else if(calories <= 2000 && calories >= 1901 ){
                String mess ="Here's a list of foods that approximately total 1900 calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/2 cup chopped walnuts (200 calories)\n" +
"6. 1/2 cup cooked oatmeal (100 calories)\n" +"7. 1 medium banana (105 calories)\n" +"8. 1/2 cup sliced strawberries (50 calories)\n" +"\n" +"# Mid-Morning Snack\n" +
"1. 1 medium apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +
"2. 1 cup mixed greens salad (20 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +
"6. 1 cup cherry tomatoes (25 calories)\n" +"\n" +"# Mid-Afternoon Snack\n" +"1. 1 medium pear (62 calories)\n" +"2. 1 oz cheddar cheese (115 calories)\n" +
"3. 1 small bag of baby carrots (45 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +"2. 1 cup steamed broccoli (55 calories)\n" +
"3. 1/2 cup cooked brown rice (110 calories)\n" +"4. 1/4 cup chopped pecans (100 calories)\n" +"5. 1 cup sautéed spinach (20 calories)\n" +"6. 1/2 cup sliced bell peppers (45 calories)\n" +
"7. 1/4 cup crumbled feta cheese (100 calories)\n" +"8. 1 medium slice whole grain bread (89 calories)\n" +"9. 1 tablespoon hummus (100 calories)\n" +"\n" +
"Total Calories: approximately 1900 calories";
                JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
            } else {
                String mess ="Here's a list of foods that approximately 2000 above calories:\n" +"\n" +"# Breakfast\n" +"1. 2 scrambled eggs (140 calories)\n" +
"2. 2 slices whole wheat toast (140 calories)\n" +"3. 1 cup mixed berries (60 calories)\n" +"4. 1 cup Greek yogurt (100 calories)\n" +"5. 1/2 cup chopped walnuts (200 calories)\n" +
"6. 1/2 cup cooked oatmeal (100 calories)\n" +"7. 1 medium banana (105 calories)\n" +"8. 1/2 cup sliced strawberries (50 calories)\n" +"9. 1 tablespoon honey (64 calories)\n" +
"\n" +"# Mid-Morning Snack\n" +"1. 1 medium apple (95 calories)\n" +"2. 1 oz dry-roasted almonds (161 calories)\n" +"\n" +"# Lunch\n" +"1. Grilled chicken breast (4 oz, 120 calories)\n" +
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"2. 1 cup mixed greens salad (20 calories)\n" +"3. 1/2 cup cooked quinoa (100 calories)\n" +"4. 1 tablespoon olive oil (120 calories)\n" +"5. 1/2 cup sliced avocado (110 calories)\n" +
"6. 1 cup cherry tomatoes (25 calories)\n" +"7. 1/4 cup crumbled feta cheese (100 calories)\n" +"\n" +"# Mid-Afternoon Snack\n" +"1. 1 medium pear (62 calories)\n" +
"2. 1 oz cheddar cheese (115 calories)\n" +"3. 1 small bag of baby carrots (45 calories)\n" +"\n" +"# Dinner\n" +"1. Grilled salmon (4 oz, 180 calories)\n" +
"2. 1 cup steamed broccoli (55 calories)\n" +"3. 1/2 cup cooked brown rice (110 calories)\n" +"4. 1/4 cup chopped pecans (100 calories)\n" +"5. 1 cup sautéed spinach (20 calories)\n" +
"6. 1/2 cup sliced bell peppers (45 calories)\n" +"7. 1/4 cup crumbled feta cheese (100 calories)\n" +"8. 1 medium slice whole grain bread (89 calories)\n" +
"9. 1 tablespoon hummus (100 calories)\n" +"\n" +"# Evening Snack\n" +"1. 1 small container air-popped popcorn (100 calories)\n" +"2. 1 small banana (90 calories)\n" +
"\n" +"Total Calories: approximately 2000 above calories";
                    JOptionPane.showConfirmDialog(null, mess, "Tips for Your Diets",JOptionPane.DEFAULT_OPTION);
                }
            } catch (NumberFormatException ex) {
                JOptionPane.showMessageDialog(null, "Please enter valid numeric values for weight, height, and age.");
            }
        }
    });
  }

  public static void main(String[] args) {
    SwingUtilities.invokeLater(new Runnable() {
      @Override

      public void run() {
        BMICalorieCalculator frame = new BMICalorieCalculator();
        frame.setVisible(true);
      }
    });
  }
}

package javaapplication2;

class User {
  private String name;
  private double weight; // in kilograms
  private double height; // in meters
  private int age;
  private String gender;

  public User(String name, double weight, double height, int age, String gender) {
    this.name = name;
    this.weight = weight;
    this.height = height;
    this.age = age;
    this.gender = gender;
  }

  // Method to calculate BMI
  public double calculateBMI() {
    return weight / (height * height);
  }

  // Method to calculate the BMI category
  public String getBMICategory(double bmi) {
    if (bmi < 18.5) {
      return "Underweight";
    } else if (bmi >= 18.5 && bmi <= 24.9) {
      return "Normal";
```

```
        } else if (bmi >= 25.0 && bmi <= 29.9) {
            return "Overweight";
        } else if (bmi >= 30.0 && bmi <= 34.9) {
            return "Obese";
        } else {
            return "Extremely Obese";
        }
    }

    public double calculateCalories() {
        double bmr;
        if (gender.equalsIgnoreCase("male")) {
            bmr = 10 * weight + 6.25 * (height * 100) - 5 * age + 5;
        } else {
            bmr = 10 * weight + 6.25 * (height * 100) - 5 * age - 161;
        }
        return bmr;
    }
    public String getName() {
        return name;
    }
}
```

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