Java Mini Project

Source Code:

```
import javax.swing.*;

import java.awt.*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.util.Scanner;

import java.util.Timer;

import java.util.TimerTask;


abstract class Calculator {
   abstract void calculate(); // Abstract method to be implemented by subclasses


   void showMessage(String message) {
      JOptionPane.showMessageDialog(null, message);
   }


   int getIntegerInput(String prompt) {
      try {
         return Integer.parseInt(JOptionPane.showInputDialog(prompt));
      } catch (NumberFormatException ex) {
         showMessage("Please enter a valid integer.");
         return 0;
      }
   }


   double getDoubleInput(String prompt) {
      try {
         return Double.parseDouble(JOptionPane.showInputDialog(prompt));
```

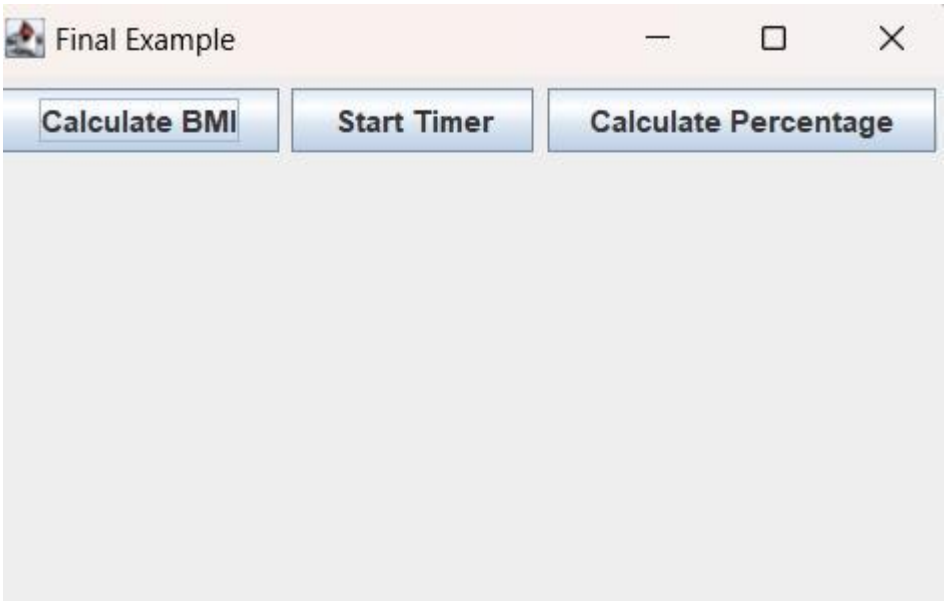
```
        } catch (NumberFormatException ex) {
            showMessage("Please enter a valid numeric value.");
            return 0.0;
        }
    }
}

class BMICalculator extends Calculator {
    @Override
    void calculate() {
        double height = getDoubleInput("Enter height (m):");
        double weight = getDoubleInput("Enter weight (kg):");

        double bmi = weight / (height * height);

        showMessage("Your BMI is: " + bmi);
    }
}

class TimerTaskRunner extends Calculator {
    @Override
    void calculate() {
        int inputSeconds = getIntegerInput("Enter seconds for Timer:");

        Timer timer = new Timer();

        TimerTask task = new TimerTask() {
            int counter = inputSeconds;

            @Override
            public void run() {
```

```
            if (counter > 0) {
                System.out.println(counter + " seconds");
                counter--;
            } else {
                showMessage("Task Complete!");
                timer.cancel();
            }
        }
    };

    // Schedule the timer task
    timer.scheduleAtFixedRate(task, 0, 1000);
  }
}

class PercentageCalculator extends Calculator {
  @Override
  void calculate() {
    int maths = getIntegerInput("Enter marks for Maths:");
    int english = getIntegerInput("Enter marks for English:");
    int hindi = getIntegerInput("Enter marks for Hindi:");
    int sst = getIntegerInput("Enter marks for SST:");
    int science = getIntegerInput("Enter marks for Science:");

    int percentage = ((maths + english + hindi + sst + science) / 5);
    showMessage("Percentage: " + percentage + "%");
  }
}

public class FinalExample extends JFrame {
```

```
private JButton bmiButton;
private JButton timerButton;
private JButton percentageButton;

public FinalExample() {
    setTitle("Final Example");
    setSize(400, 250);
    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    setLayout(new FlowLayout());

    bmiButton = new JButton("Calculate BMI");
    timerButton = new JButton("Start Timer");
    percentageButton = new JButton("Calculate Percentage");

    bmiButton.addActionListener(new ActionListener() {
        @Override
        public void actionPerformed(ActionEvent e) {
            BMICalculator bmiCalculator = new BMICalculator();
            bmiCalculator.calculate();
        }
    });

    timerButton.addActionListener(new ActionListener() {
        @Override
        public void actionPerformed(ActionEvent e) {
            TimerTaskRunner timerTaskRunner = new TimerTaskRunner();
            timerTaskRunner.calculate();
        }
    });

    percentageButton.addActionListener(new ActionListener() {
```

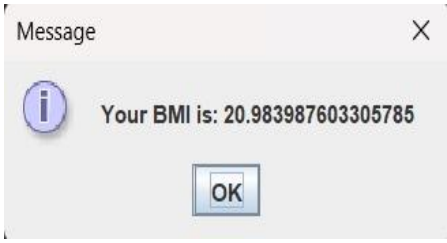
```
        @Override
        public void actionPerformed(ActionEvent e) {
            PercentageCalculator percentageCalculator = new PercentageCalculator();
            percentageCalculator.calculate();
        }
    });



    add(bmiButton);
    add(timerButton);
    add(percentageButton);

    setVisible(true);
  }

  public static void main(String[] args) {
    SwingUtilities.invokeLater(new Runnable() {
      @Override
      public void run() {
        new FinalExample();
      }
    });
  }
}
```

Project :

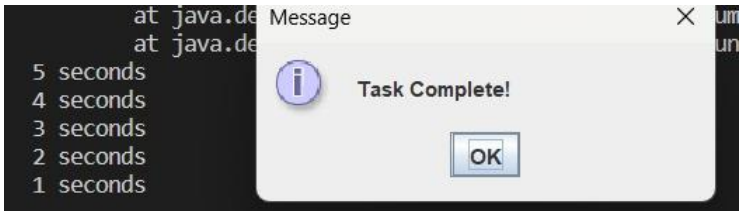

Final Example
Calculate BMI
Start Timer
Calculate Percentage

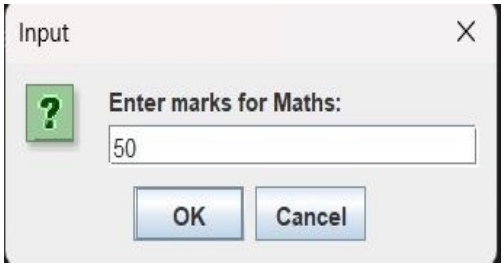

Input
Enter weight (kg):
65
OK
Cancel


Input
Enter height (m):
1.76
OK
Cancel

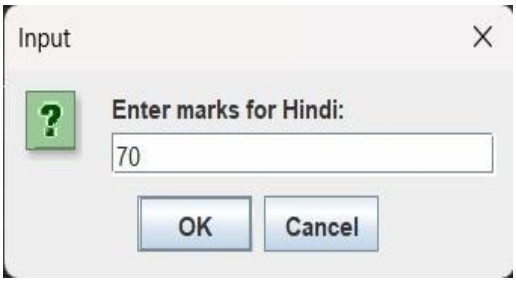

Message
Your BMI is: 20.983987603305785
OK


Input
Enter seconds for Timer:
5
OK
Cancel

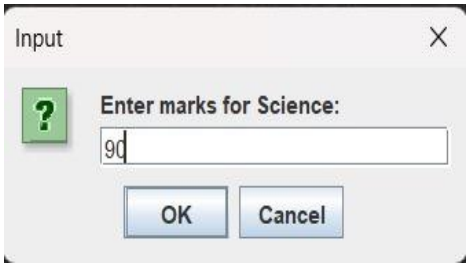

5 seconds
4 seconds
3 seconds
2 seconds
1 seconds
Message
Task Complete!
OK


Input
Enter marks for Maths:
50
OK
Cancel


Input
Enter marks for English:
60
OK
Cancel


Input
Enter marks for Hindi:
70
OK
Cancel


Input
Enter marks for SST:
80
OK
Cancel


Input
Enter marks for Science:
90
OK
Cancel


Message
Percentage: 70%
OK