JAVA PRACTICALS PROGRAM

Program no1:

Key Pressed, Key Released, Key Typed

```
import java.applet.Applet;

import java.awt.Graphics;

import java.awt.event.KeyEvent;

import java.awt.event.KeyListener;

public class KeyStatusApplet extends Applet implements KeyListener {


  String msg = "";

  int x = 10, y = 50;


  public void init() {

    addKeyListener(this); // Register key listener

    requestFocus(); // Request focus to receive key events

  }


  public void keyPressed(KeyEvent ke) {

    msg = "Key Pressed: " + ke.getKeyChar();

    repaint();

  }
```

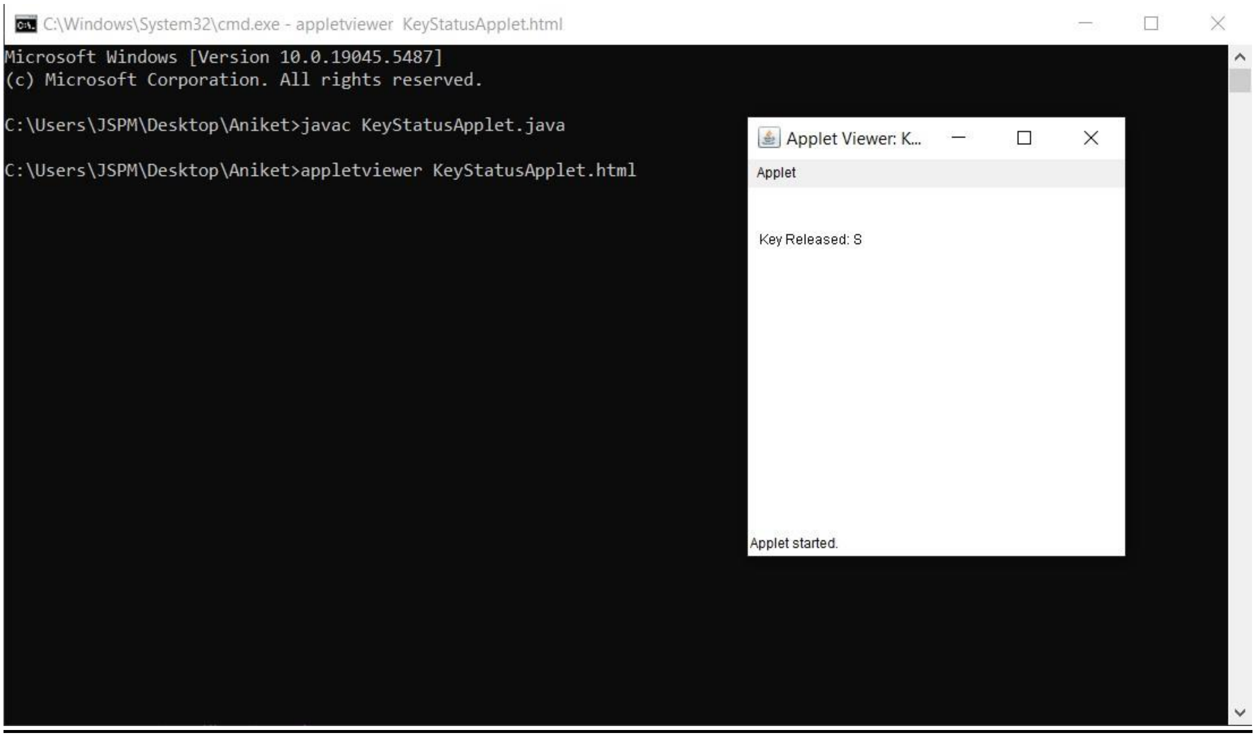
```
    public void keyReleased(KeyEvent ke) {

        msg = "Key Released: " + ke.getKeyChar();

        repaint();

    }


    public void keyTyped(KeyEvent ke) {

        msg = "Key Typed: " + ke.getKeyChar();

        repaint();

    }


    public void paint(Graphics g) {

        g.drawString(msg, x, y);

    }

}
```

Html file

```
<html>

<body>

<applet code=”KeyStatusApplet.class” width=”300” height=”300”>

</applet>

</body>

</html>
```

Execution of code:

```
C\:>javac KeyStatusApplet.java

C\:>appletviewer KeyStatusApplet.html
```



C:\Windows\System32\cmd.exe - appletviewer KeyStatusApplet.html

```
Microsoft Windows [Version 10.0.19045.5487]
(c) Microsoft Corporation. All rights reserved.

C:\Users\JSPM\Desktop\Aniket>javac KeyStatusApplet.java

C:\Users\JSPM\Desktop\Aniket>appletviewer KeyStatusApplet.html
```

Applet Viewer: K...
Applet

```
Key Released: S
```

```
Applet started.
```

Program no2:

MouseKeyEvent Implementation

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

public class FrameMouseEvents extends Frame implements MouseListener {
    Label label;

    public FrameMouseEvents() {
        super("AWT Mouse Events Example");

        // Set up the frame
        label = new Label("Move the mouse to interact", Label.CENTER);
        label.setBounds(50, 100, 200, 30);
        this.add(label);
        this.setSize(300, 300);
        this.setLayout(null);
        this.setLocationRelativeTo(null); // Center the frame on the screen
        this.setVisible(true); // Make frame visible initially
    // Add MouseListener
    this.addMouseListener(this);

    // Close window on exit
    this.addWindowListener(new WindowAdapter() {
        public void windowClosing(WindowEvent e) {
            dispose();
        }
    });
}

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

@Override
public void mouseClicked(MouseEvent e) {
    label.setText("Mouse Clicked");
}

@Override
public void mouseEntered(MouseEvent e) {
    label.setText("Mouse Entered");
    }

    @Override
    public void mouseExited(MouseEvent e) {
        label.setText("Mouse Exited");
    }

    @Override
    public void mousePressed(MouseEvent e) {
        // Not used
    }

    @Override
    public void mouseReleased(MouseEvent e) {
        // Not used
    }
}
```

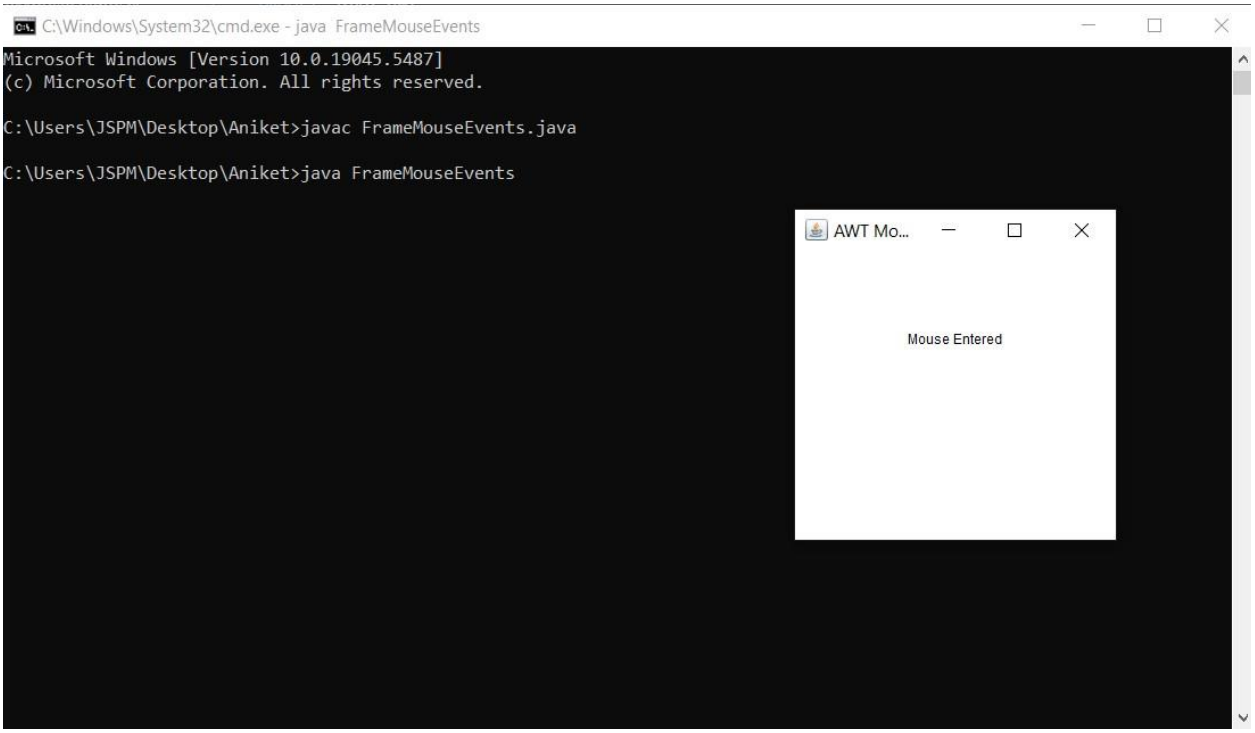
Html file

```
<html>
<body>
<applet code=”FrameMouseEvents.class” width=”300” height=”300”>
</applet>
</body>
```

```
</html>
```

Execution of code:

```
C\:>javac FrameMouseEvents.java

C\:>appletviewer FrameMouseEvents.html
```



```
Microsoft Windows [Version 10.0.19045.5487]
(c) Microsoft Corporation. All rights reserved.

C:\Users\JSPM\Desktop\Aniket>javac FrameMouseEvents.java

C:\Users\JSPM\Desktop\Aniket>java FrameMouseEvents
```

Mouse Entered

Program no3:

GUI Programming

```
import javax.swing.*;

import java.awt.*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;



public class StudentMarksApp extends JFrame implements ActionListener {

    private JTextField nameField, subject1Field, subject2Field, subject3Field, subject4Field,
subject5Field;

    private JButton submitButton;



    public StudentMarksApp() {

        // Frame properties

        setTitle("Student Marks Entry");

        setSize(400, 300);

        setLayout(new GridLayout(7, 2, 10, 10));
```

```
setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

// Creating labels and text fields
add(new JLabel("Student Name:"));
nameField = new JTextField(20);
add(nameField);

add(new JLabel("Marks for Subject 1:"));
subject1Field = new JTextField(5);
add(subject1Field);

add(new JLabel("Marks for Subject 2:"));
subject2Field = new JTextField(5);
add(subject2Field);

add(new JLabel("Marks for Subject 3:"));
subject3Field = new JTextField(5);
add(subject3Field);

add(new JLabel("Marks for Subject 4:"));
subject4Field = new JTextField(5);
add(subject4Field);

add(new JLabel("Marks for Subject 5:"));
```

```
        subject5Field = new JTextField(5);
        add(subject5Field);

        // Submit button
        submitButton = new JButton("Show Result");
        submitButton.addActionListener(this);
        add(submitButton);

        setVisible(true);
    }

    // Action listener to process button click
    public void actionPerformed(ActionEvent e) {
        try {
            // Get input values
            String name = nameField.getText();
            int marks1 = Integer.parseInt(subject1Field.getText());
            int marks2 = Integer.parseInt(subject2Field.getText());
            int marks3 = Integer.parseInt(subject3Field.getText());
            int marks4 = Integer.parseInt(subject4Field.getText());
            int marks5 = Integer.parseInt(subject5Field.getText());

            // Calculate total and percentage
            int total = marks1 + marks2 + marks3 + marks4 + marks5;
            double percentage = (double) total / 5;


            // Determine grade
            String grade;
            if (percentage >= 90) {
                grade = "A+";
            } else if (percentage >= 80) {
                grade = "A";
            } else if (percentage >= 70) {
                grade = "B";
            } else if (percentage >= 60) {
                grade = "C";
            } else if (percentage >= 50) {
                grade = "D";
            } else {
                grade = "F";
            }


            // Show result in a new window
            showResult(name, total, percentage, grade);


        } catch (NumberFormatException ex) {
            JOptionPane.showMessageDialog(this, "Please enter valid numeric marks!", "Error",
JOptionPane.ERROR_MESSAGE);
```

```
        }
    }

    // Method to show result in a new window
    private void showResult(String name, int total, double percentage, String grade) {
        JFrame resultFrame = new JFrame("Student Result");
        resultFrame.setSize(300, 200);
        resultFrame.setLayout(new GridLayout(5, 1, 10, 10));

        resultFrame.add(new JLabel("Student Name: " + name));
        resultFrame.add(new JLabel("Total Marks: " + total));
        resultFrame.add(new JLabel("Percentage: " + String.format("%.2f", percentage) + "%"));
        resultFrame.add(new JLabel("Grade: " + grade));

        resultFrame.setVisible(true);
    }

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

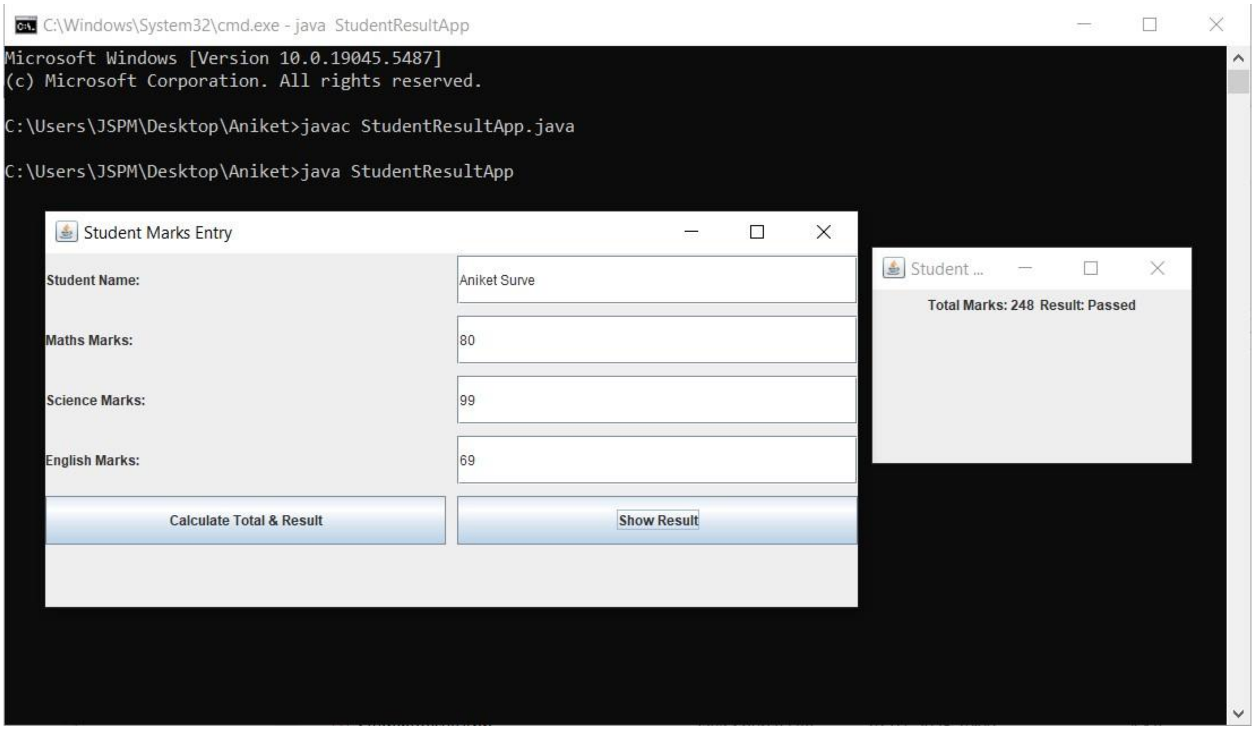
Html file

```
<html>
```

```
<body>

<applet code=”StudentMarksApp.class” width=”300” height=”300”>

</applet>

</body>

</html>
```

Execution of code:

```
C\:>javac StudentMarksApp.java

C\:>java StudentMarksApp
```



```
Microsoft Windows [Version 10.0.19045.5487]
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C:\Users\JSPM\Desktop\Aniket>javac StudentResultApp.java

C:\Users\JSPM\Desktop\Aniket>java StudentResultApp
```

Student Name: Aniket Surve

Maths Marks: 80

Science Marks: 99

English Marks: 69

```
Total Marks: 248  Result: Passed
```