Practical Question -13

13a –

```java
/** Main.java **/
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
public class Main {
    JLabel l;
    Main() {
        JFrame f = new JFrame("Swing Frame");
        l = new JLabel("", SwingConstants.CENTER);
        l.setBounds(15, 110, 260, 30);
        f.add(l);
        f.addMouseListener(new MouseAdapter() {
            @Override
            public void mouseClicked(MouseEvent e) {
                l.setText("Mouse Clicked");
            }
            @Override
            public void mouseEntered(MouseEvent e) {
                l.setText("Mouse Entered");
            }
            @Override
            public void mouseExited(MouseEvent e) {
                l.setText("Mouse Exited");
            }
        });
        f.setSize(300, 300);
        f.setLayout(null);
```
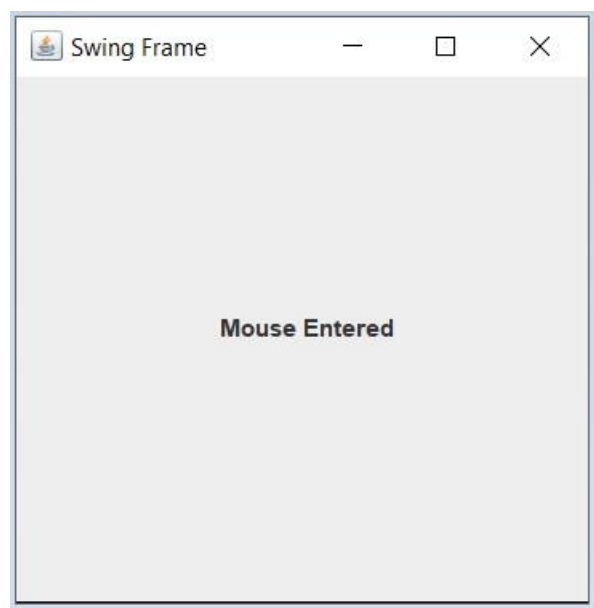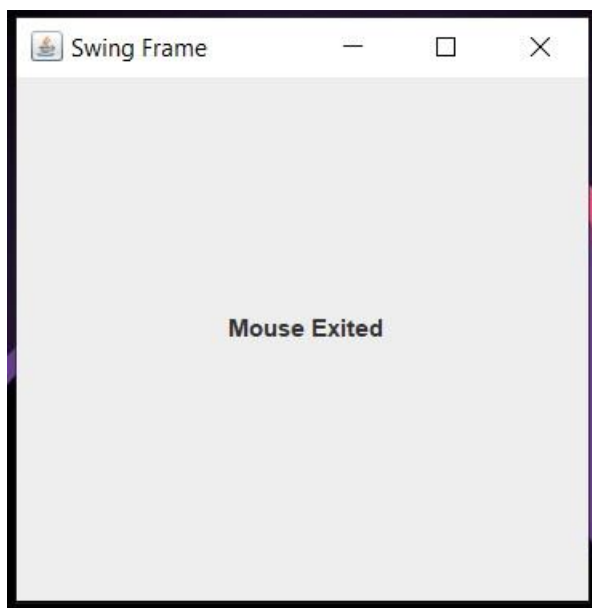
```java
        f.setVisible(true);

        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }

    public static void main(String[] args) {

        SwingUtilities.invokeLater(new Runnable() {

            public void run() {

                new Main();

            }

        });

    }

}
```

Output -

13b –

```java
/** Main.java **/
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
public class Main {
    JLabel l;
    Main() {
        JFrame f = new JFrame("Swing Pink");
        l = new JLabel("London on the Track", SwingConstants.CENTER);
```
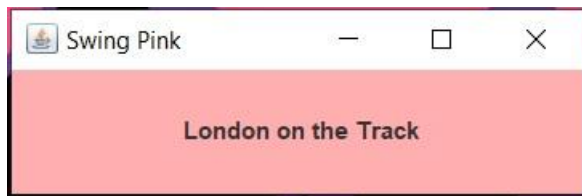
```
            l.setBounds(15, 15, 260, 30);
            f.add(l);
            f.getContentPane().setBackground(Color.PINK);
            f.setSize(300, 100);
            f.setLayout(null);
            f.setVisible(true);
            f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        }
        public static void main(String[] args) {
            SwingUtilities.invokeLater(new Runnable() {
                public void run() {
                    new Main();
                }
            });
        }
    }
```

Output –

13c –

```
import java.awt.*;
import java.awt.event.*;
    import javax.swing.*;
     public class Main {
  JButton btnRed, btnBlue;
  Main() {
    JFrame f = new JFrame("Swing Buttons");
    btnRed = new JButton("Red");
    btnRed.setBounds(16, 20, 250, 30);
    btnRed.addActionListener(new ActionListener() {
      @Override
      public void actionPerformed(ActionEvent e) {
        f.getContentPane().setBackground(Color.RED);
```

```java
            }
        });
        f.add(btnRed);
        btnBlue = new JButton("Blue");
        btnBlue.setBounds(16, 65, 250, 30);
        btnBlue.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                f.getContentPane().setBackground(Color.BLUE);
            }
        });
        f.add(btnBlue);
        f.setSize(300, 160);
        f.setLayout(null);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }

    public static void main(String[] args) {
        SwingUtilities.invokeLater(new Runnable() {
            public void run() {
                new Main();
            }
        });
    }
}
```
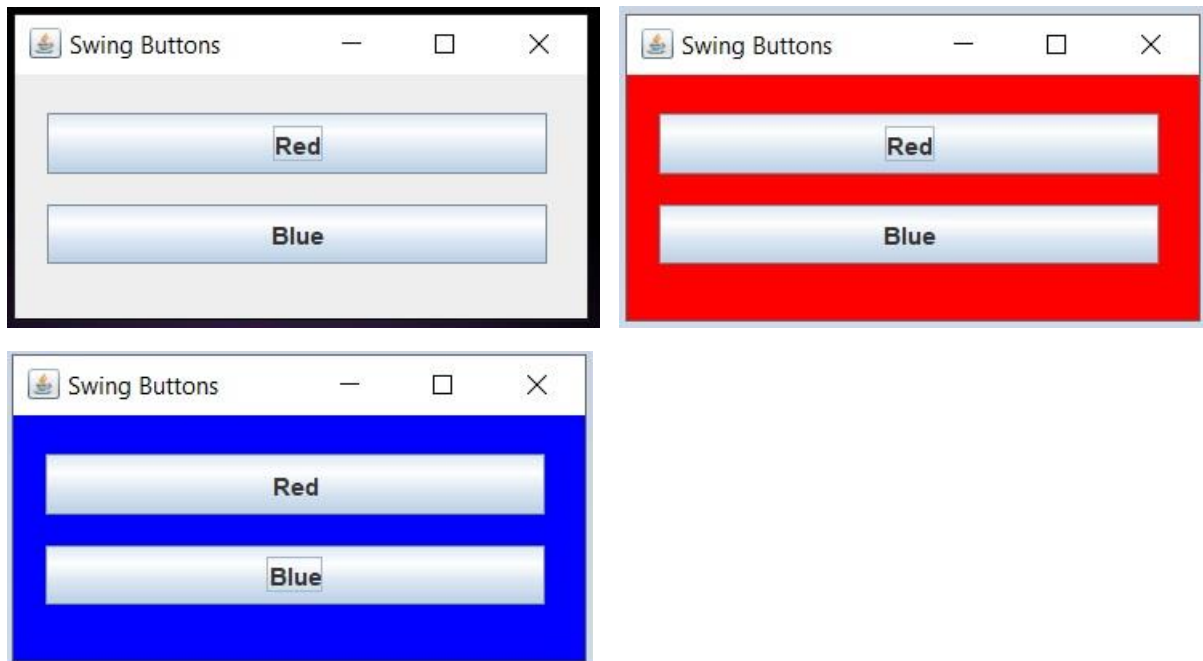
Output –

13d –

```java
 import java.awt.*;

import java.awt.event.*;

import javax.swing.*;

class KbdAdapter extends KeyAdapter {

  JLabel l;

  KbdAdapter(JLabel l) {

    this.l = l;

  }

  @Override

  public void keyTyped(KeyEvent e) {

    l.setText("Typed character is: " + e.getKeyChar());

  }

  @Override

  public void keyPressed(KeyEvent e) {

    System.out.println("Pressed character is: " + e.getKeyChar());

  }
```

```java
        @Override
        public void keyReleased(KeyEvent e) {
            System.out.println("Released character is: " + e.getKeyChar());
        }
    }
    public class Main {
        JLabel l;
        Main() {
            JFrame f = new JFrame("AWT Keyboard");
            l = new JLabel("", SwingConstants.CENTER);
            l.setBounds(15, 20, 250, 30);
            f.addKeyListener(new KbdAdapter(l));
            f.add(l);
            f.setSize(300, 110);
            f.setLayout(null);
            f.setVisible(true);
            f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        }
        public static void main(String[] args) {
            SwingUtilities.invokeLater(new Runnable() {
                public void run() {
                    new Main();
                }
            });
        }
    }
```

Output –

13e –

```java
/** Main.java **/
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
public class Main implements ActionListener {
    JButton btnInfo, btnCGPA;
    Main() {
        JFrame f = new JFrame("Student Details");
        btnInfo = new JButton("A");
        btnInfo.setBounds(18, 100, 450, 100);
        btnInfo.addActionListener(this);
        f.add(btnInfo);
        btnCGPA = new JButton("B");
        btnCGPA.setBounds(18, 270, 450, 100);
        btnCGPA.addActionListener(this);
        f.add(btnCGPA);
        f.setSize(500, 500);
        f.setLayout(null);
        f.setVisible(true);
```

```java
        f.setLocationRelativeTo(null);

        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    }

    public static void main(String[] args) {

        SwingUtilities.invokeLater(new Runnable() {

            public void run() {

                new Main();

            }

        });

    }

    @Override

    public void actionPerformed(ActionEvent e) {

        if (e.getSource() == btnInfo) {

            new Information(

                "Harsh Meena",

                "BSc (Hons) Computer Science",

                "88028",

                "ARSD College"

            );

        } else if (e.getSource() == btnCGPA) {

            new CGPA("9.5");

        }

    }

}


/** Information.java **/

import java.awt.*;

import java.awt.event.*;

import javax.swing.*;

class Information {

    JButton btnClose;
```
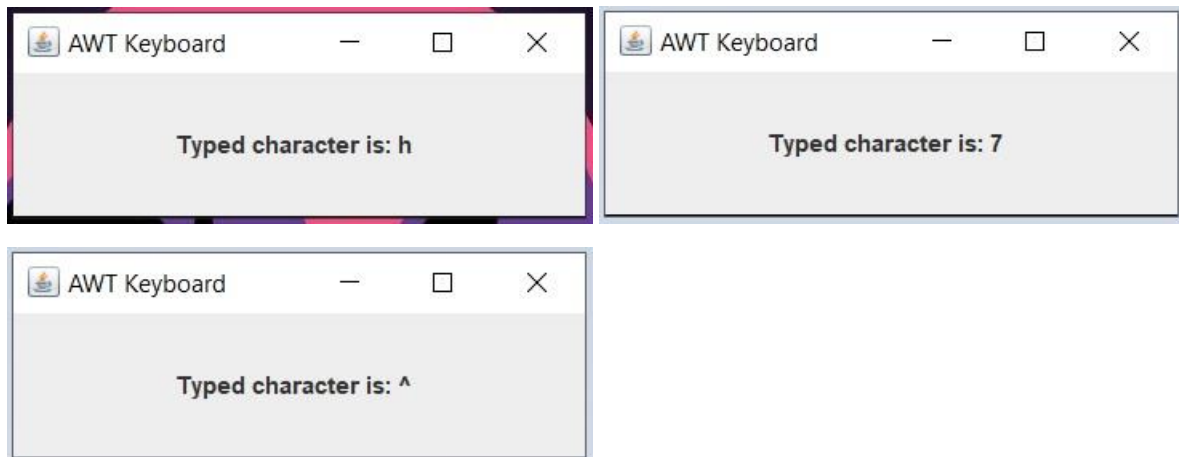
```java
JPanel panelForm;

JLabel labelName, labelCourse, labelRollNo, labelCollege;

JTextField fieldName, fieldCourse, fieldRollNo, fieldCollege;

Information(String name, String course, String rollNo, String college) {

    JFrame f = new JFrame("Personal Information");

    labelName = new JLabel("Name:");

    labelName.setBounds(30, 30, 90, 23);

    labelCourse = new JLabel("Course:");

    labelCourse.setBounds(30, 60, 100, 23);

    labelRollNo = new JLabel("Roll No.:");

    labelRollNo.setBounds(30, 90, 80, 23);

    labelCollege = new JLabel("College:");

    labelCollege.setBounds(30, 120, 90, 23);

    fieldName = new JTextField(name);

    fieldName.setBounds(120, 30, 210, 23);

    fieldName.setEditable(false);

    fieldCourse = new JTextField(course);

    fieldCourse.setBounds(120, 60, 210, 23);

    fieldCourse.setEditable(false);

    fieldRollNo = new JTextField(rollNo);

    fieldRollNo.setBounds(120, 90, 210, 23);

    fieldRollNo.setEditable(false);

    fieldCollege = new JTextField(college);

    fieldCollege.setBounds(120, 120, 210, 23);

    fieldCollege.setEditable(false);

    btnClose = new JButton("Close");

    btnClose.setBounds(110, 160, 140, 30);

    btnClose.addActionListener(new ActionListener() {

        @Override

        public void actionPerformed(ActionEvent e) {

            f.dispose();
```

```java
            }
        });
        panelForm = new JPanel();
        panelForm.setLayout(null);
        panelForm.add(labelName);
        panelForm.add(fieldName);
        panelForm.add(labelCourse);
        panelForm.add(fieldCourse);
        panelForm.add(labelRollNo);
        panelForm.add(fieldRollNo);
        panelForm.add(labelCollege);
        panelForm.add(fieldCollege);
        panelForm.add(btnClose);
        f.add(panelForm);
        f.setSize(380, 250);
        f.setVisible(true);
        f.setLayout(null);
        f.setLocationRelativeTo(null);
        f.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);
    }
}


/** CGPA.java **/
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
class CGPA {
    JLabel l;
    JButton btnClose;
    CGPA(String cgpa) {
        JFrame f = new JFrame("Previous Year CGPA");
```

```java
        l = new JLabel("Your CGPA was: " + cgpa, SwingConstants.CENTER);

        l.setBounds(20, 20, 250, 30);

        btnClose = new JButton("Close");

        btnClose.setBounds(90, 60, 100, 30);

        btnClose.addActionListener(new ActionListener() {

            @Override

            public void actionPerformed(ActionEvent e) {

                f.dispose();

            }

        });

        f.add(l);

        f.add(btnClose);

        f.setSize(310, 150);

        f.setLayout(null);

        f.setVisible(true);

        f.setLocationRelativeTo(null);

        f.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);

    }

}
```

Output –