**Practical 4**

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| ROLL NO: | 22BCP317 | Batch | G8 |
| NAME: | Patel shiv vijaykumar | | |
| Practical | 4/1 | | |
| Aim: | **WAP to create a GUI Frame that displays student Name, Student Roll No,CPI,E-mail.** | | |

**Source code:**

import javax.swing.\*;

public class practical4\_1{

    public static void main(String[] args) {

        JFrame frame = new JFrame("Student Information");

        JLabel nameLabel = new JLabel("Student Name:");

        nameLabel.setBounds(50, 50, 100, 20);

        JLabel rollNumberLabel = new JLabel("Roll Number:");

        rollNumberLabel.setBounds(50, 100, 100, 20);

        JLabel cpiLabel = new JLabel("CPI:");

        cpiLabel.setBounds(50, 150, 100, 20);

        JLabel emailLabel = new JLabel("E-mail:");

        emailLabel.setBounds(50, 200, 100, 20);

        JTextField nameField = new JTextField();

        nameField.setBounds(150, 50, 200, 20);

        JTextField rollNumberField = new JTextField();

        rollNumberField.setBounds(150, 100, 200, 20);

        JTextField cpiField = new JTextField();

        cpiField.setBounds(150, 150, 200, 20);

        JTextField emailField = new JTextField();

        emailField.setBounds(150, 200, 200, 20);

        frame.add(nameLabel);

        frame.add(rollNumberLabel);

        frame.add(cpiLabel);

        frame.add(emailLabel);

        frame.add(nameField);

        frame.add(rollNumberField);

        frame.add(cpiField);

        frame.add(emailField);

        frame.setSize(400, 300);

        frame.setLayout(null);

        frame.setVisible(true);

        frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

    }

}

**Output:**

**A screenshot of a computer

Description automatically generated**

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| --- | --- | --- | --- |
| ROLL NO: | 22BCP317 | Batch | G8 |
| NAME: | Patel shiv vijaykumar | | |
| Practical | 4/2 | | |
| Aim: | **WAP to handle KeyEvent and MouseEvent on the Frame** | | |

**Source code:**

**Output:**

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| ROLL NO: | 22BCP317 | Batch | G8 |
| NAME: | Patel shiv vijaykumar | | |
| Practical | 4/3 | | |
| Aim: | **WAP to create Menu Based GUI Application** | | |

**Source code:**

import javax.swing.\*;

import java.awt.event.\*;

public class practical4\_3 implements ActionListener{

JFrame f;

JMenuBar mb;

JMenu file,edit,help;

JMenuItem cut,copy,paste,selectAll;

JTextArea ta;

practical4\_3(){

f= new JFrame();

cut= new JMenuItem("cut");

copy= new JMenuItem("copy");

paste= new JMenuItem("paste");

selectAll= new JMenuItem("selectAll");

cut.addActionListener(this);

copy.addActionListener(this);

paste.addActionListener(this);

selectAll.addActionListener(this);

mb=new JMenuBar();

file=new JMenu("File");

edit=new JMenu("Edit");

help=new JMenu("Help");

edit.add(cut);edit.add(copy);edit.add(paste);edit.add(selectAll);

mb.add(file);mb.add(edit);mb.add(help);

ta=new JTextArea();

ta.setBounds(5,5,360,320);

f.add(mb);f.add(ta);

f.setJMenuBar(mb);

f.setLayout(null);

f.setSize(400,400);

f.setVisible(true);

f.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

}

public void actionPerformed(ActionEvent e) {

if(e.getSource()==cut)

ta.cut();

if(e.getSource()==paste)

ta.paste();

if(e.getSource()==copy)

ta.copy();

if(e.getSource()==selectAll)

ta.selectAll();

}

public static void main(String[] args) {

    new practical4\_3();

}

**Output:  A screenshot of a computer

Description automatically generated**

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| --- | --- | --- | --- |
| ROLL NO: | 22BCP317 | Batch | G8 |
| NAME: | Patel shiv vijaykumar | | |
| Practical | 4/4 | | |
| Aim: | **WAP to create GUI based math calculator, provide +,-,\*,Clear functionality.(Use Flow,Grid,BorderLayout)** | | |

**Source code:**

import java.awt.\*;

import javax.swing.\*;

public class practical4\_4{

    public static void main(String[] args) {

    JFrame jf = new JFrame("Calculator");

    jf.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

    jf.setSize(400,400);

    JPanel jp = new JPanel(new GridLayout(4,4));

    JButton b1,b2,b3,b4,b5,b6,b7,b8,b9,b10,b11,b12,b13,b14,b15,b16;

    b1=new JButton("C");

    jp.add(b1);

    b2=new JButton("0");

    jp.add(b2);

    b3=new JButton("/");

    jp.add(b3);

    b4=new JButton("=");

    jp.add(b4);

    b5= new JButton("1");

    jp.add(b5);

    b6= new JButton("2");

    jp.add(b6);

    b7= new JButton("3");

    jp.add(b7);

    b8=new JButton("+");

    jp.add(b8);

    b9= new JButton("4");

    jp.add(b9);

    b10= new JButton("5");

    jp.add(b10);

    b11= new JButton("6");

    jp.add(b11);

    b12=new JButton("-");

    jp.add(b12);

    b13= new JButton("7");

    jp.add(b13);

    b14= new JButton("8");

    jp.add(b14);

    b15= new JButton("9");

    jp.add(b15);

    b16=new JButton("\*");

    jp.add(b16);

    Container c=jf.getContentPane();

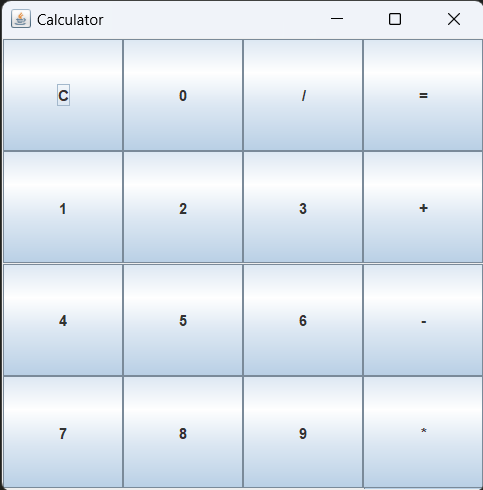
    c.setLayout(new BorderLayout());

    c.add(jp,BorderLayout.CENTER);

    jf.setVisible(true);

}}

**Output:**

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| --- | --- | --- | --- |
| ROLL NO: | 22BCP317 | Batch | G8 |
| NAME: | Patel shiv vijaykumar | | |
| Practical | 4/5 | | |
| Aim: | **WAP to create DialogBoxes.** | | |

**Source code:**

import javax.swing.\*;

public class practical4\_5{

    public static void main(String[] args) {

        JFrame frame = new JFrame("BoxLayout Example");

        frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

        JOptionPane.showMessageDialog(null, "This is a dialog box.", "Hello", JOptionPane.INFORMATION\_MESSAGE);

    }

}

**Output:**

**A screenshot of a computer screen

Description automatically generated**

|  |  |  |  |
| --- | --- | --- | --- |
| ROLL NO: | 22BCP317 | Batch | G8 |
| NAME: | Patel shiv vijaykumar | | |
| Practical | 4/6 | | |
| Aim: | **WAP to demonstrate BoxLayout.** | | |

**Source code:**

import javax.swing.\*;

import java.awt.\*;

public class practical4\_6{

    public static void main(String[] args) {

        JFrame frame = new JFrame("BoxLayout Demo");

        frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

        frame.setSize(300, 150);

        JPanel verticalPanel = new JPanel();

        verticalPanel.setLayout(new BoxLayout(verticalPanel, BoxLayout.Y\_AXIS));

        JLabel label1 = new JLabel("Label 1");

        JLabel label2 = new JLabel("Label 2");

        JLabel label3 = new JLabel("Label 3");

        verticalPanel.add(label1);

        verticalPanel.add(label2);

        verticalPanel.add(label3);

        JPanel horizontalPanel = new JPanel();

        horizontalPanel.setLayout(new BoxLayout(horizontalPanel, BoxLayout.X\_AXIS));

        JButton button1 = new JButton("Button 1");

        JButton button2 = new JButton("Button 2");

        JButton button3 = new JButton("Button 3");

        horizontalPanel.add(button1);

        horizontalPanel.add(button2);

        horizontalPanel.add(button3);

        frame.add(verticalPanel, BorderLayout.WEST);

        frame.add(horizontalPanel, BorderLayout.EAST);

        frame.setVisible(true);

    }

}

**Output:**

**A screenshot of a computer

Description automatically generated**