**1)Write a program for Flow Layout.**

import javax.swing.\*;

import java.awt.\*;

public class DemoFlowLayout{

public static void main(String[] args){

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

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

frame.setSize(300,100);

JPanel panel = new JPanel(new FlowLayout(FlowLayout.RIGHT));

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

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

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

panel.add(button1);

panel.add(button2);

panel.add(button3);

frame.add(panel);

frame.setVisible(true);

}}

**2)Write a Program for Grid Layout.**

import javax.swing.\*;

import java.awt.\*;

public class DemoGridLayout{

public static void main(String[] args){

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

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

frame.setSize(300,100);

JPanel panel = new JPanel(new GridLayout(2,3));

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

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

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

JButton button4 = new JButton("Button 4");

JButton button5 = new JButton("Button 5");

JButton button6 = new JButton("Button 6");

panel.add(button1);

panel.add(button2);

panel.add(button3);

panel.add(button4);

panel.add(button5);

panel.add(button6);

frame.add(panel);

frame.setVisible(true);

}}

**3)Create a swing application that randomly changes color on button click**.

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.util.Random;

public class ChangeColor extends JFrame

{

private JPanel colorPanel

private JButton changeColorButton;

public ChangeColor()

{

setTitle("Random Color Changer");

setSize(300, 200);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

setLayout(new BorderLayout());

colorPanel new JPanel();

changeColorButton = new JButton("Change Color");

add(colorPanel, BorderLayout.CENTER);

add(changeColorButton,BorderLayout.SOUTH);

changeColorButton.addActionListener(new ActionListener() {

@Override

public void actionPerformed(ActionEvent e) {

changeColor();

}

});

}

private void changeColor() {

Random random=new Random();

Color randomColor = new Color(random.nextInt(256), random.nextInt(256), random.nextInt(256));

colorPanel.setBackground(randomColor);

}

public static void main(String[] args) { SwingUtilities.invokeLater(()-> {

ChangeColor app = new ChangeColor();

app.setVisible(true);

});

}

}

**4)Write a program to implement the concept of Inheritance and Method overriding.**

class A

{

void show()

{

System.out.println("Base Class");

}

}

class B extends A

{

void show()

{

System.out.println("Derieved Class");

}

}

class Pr2a

{

public static void main(String args[])

{

B s=new B();

s.show();

}

}

***5)Write a program to create a class and implement the concepts of Method Overloading.***

class OperOver

{

public int add(int a, int b)

{

return a + b;

}

public int add(int a, int b, int c)

{

return a + b + c;

}

}

public class Pr1b

{

public static void main(String[] args)

{

OperOver obj = new OperOver();

int sum1= obj.add(5, 10);

int sum2= obj.add(5, 10, 15);

System.out.println("Sum of two integers: " + sum1);

System.out.println("Sum of three integers: " + sum2);

}

}

**6)Write a program to implement the concept of interface.**

interface Shape

{

double area();

double perimeter();

}

class Circle implements Shape

{

private double radius;

public Circle(double radius)

{

this.radius =radius;

}

@Override

public double area()

{

return Math.PI \*radius\*radius;

}

@Override

public double perimeter()

{

return 2\*Math.PI\* radius;

}

}

public class Pr2c

{

public static void main(String[] args)

{

Circle circle = new Circle(10.0); System.out.println("Circle Area: " + circle.area());

System.out.println("Circle Perimeter: " + circle.perimeter());

}

}

**7)Write a program to create a class and implement the concepts of Static methods.**

Class DemoStaticMethods

{

public static int add(int a, int b)

{

return a + b;

}

{

public static int subtract(int a, int b)

{

return a - b;

}

}

public class Pr1c

{

public static void main(String[] args)

{

int sum=DemoStaticMethods.add(8, 4);

int difference DemoStaticMethods.subtract(7, 6);

System.out.println("Sum: " + sum); System.out.println("Difference: " + difference);

}

}

**8)Write a program to implement the concepts of Abstract classes and methods**

abstract class Shape

{

public abstract double area();

}

class Circle extends Shape

{

private double radius;

public Circle(double radius)

{

this.radius=radius:

}

@Override

public double area()

{

return Math.Pl\*radius\*radius;

}

}

public class Pr2b

{

public static void main(String[] args)

{

Circle circle=new Circle(10.0); System.out.println("Circle Area:" + circle area());

}

}

**9) Write a program to define user defined exceptions and raise them as per the requirements**

class C extends Exception

{

public C(String m)

{

super(m);

}

}

public class Main {

public static void main(String[] args) {

try

{

int age=-10;

if(age<0)

{

throw new C("Age cannot be negative");

}

System.out.println("Age:"+age);

}

catch(C e)

{

System.err.println("error"+e.getMessage());}}}

**10)Write a JDBC program that displays the data of a given table in a GUI Table.**

create database userDetails;

use userDetails;

create table myuser(id int, name varchar(45), age int);

insert into myuser(1, "Tushar", 41);

insert into myuser values (2, "Sonali",40);

insert into myuser values (3,"Yashashree",11);

insert into myuser values (4, "Vedshree",7);

import javax.swing.\*;

import javax.swing.table.DefaultTableModel;

import java.awt.\*;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.sql.Statement;

public class Pr5a extend Jframe

{

private JTable table;

private defaultTableModel model;

public Pr5a()

(

setTitle(“Database Table Display”);

setSize(300,200);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

model=new DefaultTableModel();

table=new JTable(model);

JScrollPane scrollPane=new JScrollPane(table);

add(scrollPane,BorderLayout.CENTER);

try

{

Connection connection=DriverManager.getConnection

(“jdbc:mysql://localhost:3306/userDetail”,”root”,”root”);

String query=”SELECT \* FROM myuser”;

ResultSet resultset=statement.executeQuery(query);

int columnCount=resultSet.getMetaData().getColumnName(i));

for (int i=1;i<- columnCount++)

{

model.addColumn(resultSet.getMetaData().getColumnName(i));

}

while(resultSet.next())

{

Object[]row=new Object[columnCount];

For(int i=1;i<=columnCount;i++)

{

row[i-1]=resultSet.getObject(i);

}

model.addRow(row);

}

resultSet.close();

statement.close();

connection.close();

}

catch (SQLException e)

{

e.printStackTrace();

}

}

public static void main(String[] args)

{

SwingUtilities.invokeLater(()-> {

Pr5a app = new Pr5a();

app.setVisible(true);

});

}}

**11)Write a JDBC program to Show the details of a specified product from a given table selected using Combobox.**

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.sql.Connection;

import java.sql.DriverManager,

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.sql.SQLException;

public class UserDetails extends JFrame

{

private JComboBox<String> userComboBox;

private JTextField idTextField;

private JTextField nameTextField;

public UserDetails()

{

setTitle("User Details");

setSize(400, 150); setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

setLayout(new FlowLayout());

userComboBox = new JComboBox<>(); idTextField = new JTextField(20); nameTextField new JTextField(10);

add(new JLabel("Select ID:")); add(userComboBox);

add(new JLabel("Id:"));

add(idTextField);

add(new JLabel("Name:")); add(nameTextField);

try

{

Connection connection = DriverManager.getConnection ("jdbc:mysql://localhost:3306/userDetails", "root", "root");

String query = "SELECT id FROM myuser"; PreparedStatement preparedStatement = connection.prepareStatement(query);

ResultSet resultSet = preparedStatement.executeQuery();

while (resultSet.next())

{

int id resultSet.getInt("id");

userComboBox.addItem(Integer.toString(id));

}

resultSet.close();

preparedStatement.close();

connection.close();

}

catch (SQLException e)

{

e.printStackTrace();

}

userComboBox.addActionListener(new ActionListener()

{

@Override

public void actionPerformed(ActionEvent e)

{

String selectedId= (String) userComboBox.getSelectedItem();

if (selectedId!= null)

{

try

{

Connection connection = DriverManager.getConnection

("jdbc:mysql://localhost:3306/user Details", "root", "root");

String query "SELECT id, name FROM myuser WHERE id=?";

PreparedStatement preparedStatement =

connection.prepareStatement(query);

preparedStatement.setString(1, selectedId);

ResultSet resultSet =preparedStatement.executeQuery();

if (resultSet.next())

{

int id resultSet.getInt("id");

String name resultSet.getString("name");

idTextField.setText(Integer.toString(id));

nameTextField.setText(name);

}

resultSet.close();

preparedStatement.close();

connection.close();

}

catch (SQLException ex)

{

ex.printStackTrace();

}

}

}

});

}

public static void main(String[] args)

{

SwingUtilities.invokeLater(()-> {

UserDetails user = new UserDetails();

user.setVisible(true);

});

}

}

**12)Write a program to demonstrate ActionEvent**

import javax.swing.\*;

import java.awt.event.ActionEvent;

Import java.awt.event.ActionListener;

public class BtnCIkDemo {

public static void main(String[] args) {

JFrame frame= new JFrame("Button Click Demo"); frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

JButton button = new JButton("Click Me");

button.addActionListener(new ActionListener(){

@Override

public void actionPerformed(ActionEvent e) { JOptionPane.showMessageDialog(frame, "Button Clicked!");

}

});

frame.getContentPane().add(button); frame.pack();

frame.setVisible(true);

}

}

**13)Create a swing application to demonsatrate use of textarea scrollpane to show the content of textfile in textarea selected using file chooser**

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.io.BufferedReader;

import java.io.FileReader;

import java.io.IOException;

public class ShowFileinTextArea extends JFrame

{

private JTextArea textArea=new TextArea(20, 40);

private JButton openFileButton=new JButton("Open File");

public ShowFilelnTextArea()

{

setTitle("File Viewer);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

setLayout(new BorderLayout());

JScrollPane scrollPane new= ScrollPane(textArea);

add(scrollPane, BorderLayout.CENTER);

add(openFileButton, BorderLayout.SOUTH); openFileButton.addActionListener(new ActionListener() {

@Override

public void actionPerformed(ActionEvent e) {

openFile();

}

});

pack();

setLocationRelativeTo(null);

}

private void openFile() {

JFileChooser fileChooser=new JFileChooser();

intresult==fileChooser.showOpenDialog(this);

if (result JFileChooser\_APPROVE OPTION) {

try (BufferedReader reader = new BufferedReader(new FileReader(fileChooser.getSelectedFile()))){

StringBuilder content=new StringBuilder();

String line;

while ((line = reader.readLine()) != null) {

content.append(line).append("\n");

}

textArea.setLineWrap(true);

textArea.setText(content.toString());

} catch (IOException e) {

JOptionPane.showMessageDialog(this, "Error reading the file.",

"Error", JOptionPane.ERROR\_MESSAGE);

}

}

}

public static void main(String[] args) {

SwingUtilities.invokeLater(()-> {

new Show FileInTextArea().setVisible(true);

});

}

}

**14)Write a program to demonstrate mouseEvent.**

//14)Write a program to demonstrate mouseEvent.

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.MouseEvent;

import java.awt.event.MouseListener;

public class MouseEventExample extends JFrame {

public MouseEventExample() {

setTitle("MouseEvent Example");

setSize(300, 200);

setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

JLabel label = new JLabel("Move Mouse Here");

panel.addMouseListener(new MouseListener() {

@Override

Public void mouseClicked(MouseEvent e)

JOptionPane.showMessageDialog(MouseEventExample.this, "Mouse Clicked!");

@Override

public void mouseExited(MouseEvent e) {

}

});

setLayout(new FlowLayout());

add(label);

}

public static void main(String[] args) {

SwingUtilities.invokeLater(() -> {

MouseEventExample app = new MouseEventExample();

app.setVisible(true);

});

}

**15)Demonstrate the use of adapter class in event Handling.**

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.MouseAdapter;

import java.awt.event.MouseEvent;

public class MyAdapterClass

{

public static void main(String[] args)

{

SwingUtilities.invokeLater(()-> {

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

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

JLabel label = new JLabel();

JPanel panel = new JPanel();

panel.setPreferredSize(new Dimension(300, 200));

panel.addMouseListener(new MouseAdapter() {

@Override

public void mouseClicked (MouseEvent e) {

label.setText("Mouse Clicked at (" + e.getX()+", "+e.getY() + ")");

}

});

panel.add(label);

frame.add(panel);

frame.pack();

frame.setVisible(true);

});

}

}

**16)Demonstrate the use of anonymous inner class in Event handling.**

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

public class MyAnonymousInner

{

public static void main(String[] args)

{

SwingUtilities.invokeLater(()-> {

JFrame frame = new JFrame("Anonymous Inner Class ");

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

JPanel panel = new JPanel();

panel.setPreferredSize(new Dimension(300, 200));

JButton button = new JButton("Click Here");

button.addActionListener(new ActionListener()

{

@Override

public void actionPerformed(ActionEvent e) {

JOptionPane.showMessageDialog(frame, "Button Clicked!");

}

});

panel.add(button);

frame.add(panel);

frame.pack();

frame.setVisible(true);

});

}

}