

Slip 1/*

Write a Java program using Multithreading to display all the alphabets between 'A' to 'Z' after every 2 seconds.

*/

```
package com.mycompany.javaslip;
```

```
import java.util.logging.*;
```

```
public class slip1_1
```

```
{
```

```
    public static void main(String[] args)
```

```
    {
```

```
        Thread t = new Thread(() ->
```

```
        {
```

```
            while(true)
```

```
            {
```

```
                for(char ch = 'A'; ch <= 'Z'; ch++)
```

```
                    System.out.print(ch + " ");
```

```
                System.out.println();
```

```
                try
```

```
                {
```

```
                    Thread.sleep(2000);
```

```
                }
```

```
                catch (InterruptedException ex)
```

```
                {
```

```
                    Logger.getLogger(slip1_1.class.getName()).log(Level.SEVERE, null, ex);
```

```
                }
```

```
                System.out.println("2 seconds are passed....");
```

```
    }  
    });
```

```
    t.start();  
}  
}
```

```
/*
```

Slip no 2 Write a Java program to accept the details of Employee (Eno, EName, Designation, Salary) from a user and store it into the database. (Use Swing)

```
*/
```

```
package com.mycompany.prac1;  
  
import java.awt.*;  
  
import java.awt.event.ActionEvent;  
  
import java.io.IOException;  
  
import java.sql.*;  
  
import java.util.logging.*;  
  
import javax.swing.*;  
  
class EmpApp {  
    private JFrame frame;  
    private JTextField eno, ename, desig, sal;  
    private JButton clear, insert;  
  
    EmpApp() throws SQLException {  
        frame = new JFrame("Employee App");  
        frame.setSize(400, 200);  
        frame.setLayout(new GridLayout(5, 2));  
  
        eno = new JTextField();
```

```
ename = new JTextField();
```

```
desig = new JTextField();
```

```
sal = new JTextField();
```

```
frame.add(new JLabel("Eno."));
```

```
frame.add(eno);
```

```
frame.add(new JLabel("ENAME"));
```

```
frame.add(ename);
```

```
frame.add(new JLabel("Designation"));
```

```
frame.add(desig);
```

```
frame.add(new JLabel("Salary"));
```

```
frame.add(sal);
```

```
clear = new JButton("Clear");
```

```
insert = new JButton("insert");
```

```
Connection conn =
```

```
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",  
"bhalchandra");
```

```
insert.addActionListener((ActionEvent e) -> {
```

```
    try {
```

```
        insertEmp(conn, eno, ename, desig, sal);
```

```
    } catch (IOException | SQLException ex) {
```

```
        Logger.getLogger(EmpApp.class.getName()).log(Level.SEVERE, null, ex);
```

```
    }
```

```
});
```

```
clear.addActionListener((ActionEvent e) -> {
```

```
        eno.setText("");
        ename.setText("");
        desig.setText("");
        sal.setText("");
    });
```

```
        frame.add(insert);
        frame.add(clear);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
    }
```

```
private static void insertEmp(Connection conn, JTextField eno, JTextField ename, JTextField
desig, JTextField sal)
```

```
    throws IOException, SQLException {
    String sql = "insert into emp values(?, ?, ?, ?)";
    PreparedStatement ps = conn.prepareStatement(sql);
    ps.setInt(1, Integer.parseInt(eno.getText()));
    ps.setString(2, ename.getText());
    ps.setString(3, desig.getText());
    ps.setFloat(4, Float.parseFloat(sal.getText()));
    ps.executeUpdate();
}
}
```

```
public class slip1_2
```

```
{
    public static void main(String[] args) throws SQLException {
        new EmpApp();
    }
}
```

```
}
```

```
/*
```

Slip no 2

Q1 Write a java program to read 'N' names of your friends, store it into HashSet and display them in ascending order.

```
*/
```

```
package com.mycompany.practical_slip;
```

```
import java.util.*;;
```

```
public class slip2_1
```

```
{
```

```
    public static void main(String[] args)
```

```
{
```

```
    HashSet<String> friends = new HashSet<>();
```

```
    Scanner scan = new Scanner(System.in);
```

```
    System.out.println("Enter N :");
```

```
    int n = scan.nextInt();
```

```
    scan.nextLine();
```

```
    for(int i = 0 ; i<n;i++)
```

```
{
```

```
    System.out.println("Enter name :");
```

```
    String name = scan.nextLine();
```

```
    friends.add(name);
```

```
}
```

```
    TreeSet<String> tree = new TreeSet<>(friends);
```

```
    System.out.println(tree);
```

```
}  
}
```

```
/*
```

Slip no 3

Q1. Write a JSP program to display the details of Patient (PNo, PName, Address, age, disease) in tabular form on browser*/

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
<title>JSP Page</title>
```

```
</head>
```

```
<body>
```

```
<h1>Patient</h1>
```

```
<table border="1">
```

```
<tr>
```

```
<th>PNo</th>
```

```
<th>PName</th>
```

```
<th>Address</th>
```

```
<th>age</th>
```

```
<th>disease</th>
```

```
</tr>
```

```
<tr>
```

```
<td>1</td>
```

```

        <td>John</td>

        <td>xyz</td>

        <td>45</td>

        <td>kovid</td>

    </><tr>

    <tr>

        <td>2</td>

        <td>Brock</td>

        <td>abc</td>

        <td>48</td>

        <td>canser</td>

    </><tr>

</table>

</body>

</html>

*/

```

```

/*

```

Slip no 3 Q2. Write a Java program to create LinkedList of String objects and perform the following:

- i. Add element at the end of the list
- ii. Delete first element of the list
- iii. Display the contents of list in reverse order

```

*/

```

```

package com.mycompany.javaslip;

import java.util.*;

public class slip3_2 {

```

```

public static void main(String[] args) {

    LinkedList<String> names = new LinkedList<>();

    Scanner sc = new Scanner(System.in);

    int ch;

    do {

        System.out.println("Menu");

        System.out.println("1. Insert at tail");

        System.out.println("2. Delete head.");

        System.out.println("3. Display in reverse");

        System.out.println("4. Exit");

        System.out.println("-----");

        System.out.println("Enter your choice:");

        ch = sc.nextInt();

        sc.nextLine();

        System.out.println();

        switch (ch) {

            case 1:

                System.out.println("Enter name.");

                names.add(sc.nextLine());

                break;

            case 2:

                names.remove();

                break;

            case 3: System.out.println("Real order");

                Iterator itr = names.iterator();

                while (itr.hasNext())

                {

                    System.out.println(itr.next());

```



```

    }

    Iterator it = names.descendingIterator();
    while (it.hasNext())
    {
        System.out.println(it.next());
    }

    break;
default:
    System.out.println("Invalid choice.");
}

System.out.println("-----");
} while (ch != 4);
}
}

```

```

/*

```

Slip no 4 Q1 Write a Java program using Runnable interface to blink Text on the JFrame (Use Swing)

```

*/

package com.mycompany.practical_slip;

import java.awt.Color;
import java.util.Random;
import javax.swing.*.*;

class BlinkText implements Runnable
{
    private JFrame frame;
    private JLabel blink;

```

```

public BlinkText() {
    frame = new JFrame("Blink Light");
    frame.setSize(200, 200);
    blink = new JLabel("Blink");
    frame.add(blink);
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    frame.setVisible(true);
}

@Override

public void run() {
    Random rand = new Random();
    while(true) {
        int r = rand.nextInt(255);
        int g = rand.nextInt(255);
        int b = rand.nextInt(255);
        blink.setForeground(new Color(r, g, b));
    }
}

}

public class slip4_1
{
    public static void main(String[] args) {
        Thread t = new Thread(new BlinkText());
        t.start();
    }
}

/*

```

Slip no 4 Q2. Write a Java program to store city names and their STD codes using an appropriate

collection and perform following operations:

- i. Add a new city and its code (No duplicates)
- ii. Remove a city from the collection
- iii. Search for a city name and display the code

```
*/  
  
package com.mycompany.practical_slip;  
  
import java.util.*;  
  
public class slip4_2  
{  
    public static void main(String[] args) {  
        Map<String, String> cityMap = new HashMap<>();  
        Scanner sc = new Scanner(System.in);  
  
        int ch;  
        String code, city;  
        do {  
            System.out.println("Menu");  
            System.out.println("1. Add City and std code.(no duplicates)");  
            System.out.println("2. Remove City.");  
            System.out.println("3. Search city name dsiplay std code");  
            System.out.println("4. Exit");  
  
            System.out.println("-----");  
            System.out.println("Enter your choice:");  
            ch = sc.nextInt();  
            sc.nextLine();
```

```
System.out.println();
```

```
switch(ch) {
```

```
    case 1: System.out.println("Enter std code.");
```

```
        code = sc.nextLine();
```

```
        System.out.println("Enter City.");
```

```
        city = sc.nextLine();
```

```
        cityMap.put(code, city);
```

```
        break;
```

```
    case 2: System.out.println("Enter std code.");
```

```
        code = sc.nextLine();
```

```
        cityMap.remove(code);
```

```
        break;
```

```
    case 3: System.out.println("Enter city:");
```

```
        city = sc.nextLine();
```

```
        code = null;
```

```
        for(Map.Entry<String, String> map : cityMap.entrySet()) {
```

```
            if(map.getValue().equals(city))
```

```
                code = map.getKey();
```

```
        }
```

```
        if(code != null)
```

```
            System.out.println("Code is " + code);
```

```
        else
```

```
            System.out.println("Not found.");
```

```
        break;
```

```
    default: System.out.println("Invalid choice.");
```

```
}
```

```
System.out.println("-----");
```

```
        } while(ch != 4);  
    }  
}
```

```
/*
```

Slip no5 Q1. Write a Java Program to create the hash table that will maintain the mobile number and

student name. Display the details of student using Enumeration interface

```
*/
```

```
package com.mycompany.javaslip;
```

```
import java.util.*;
```

```
public class slip5_1
```

```
{
```

```
    public static void main(String[] args)
```

```
    {
```

```
        Hashtable<String, String> studentTable = new Hashtable<>();
```

```
        studentTable.put("1234567890", "john");
```

```
        studentTable.put("1239874560", "carry");
```

```
        Enumeration<String> moblieNumbers = studentTable.keys();
```

```
        while(moblieNumbers.hasMoreElements())
```

```
        {
```

```
            String no = moblieNumbers.nextElement();
```

```
            String name = studentTable.get(no);
```

```
            System.out.println("Student name: " + name + ", Mobile no: " + no);
```

```
        }
```

```
    }
```

```
}
```

```
/*
```

slip no 6 Q1 Write a Java program to accept 'n' integers from the user and store them in a Collection.

Display them in the sorted order. The collection should not accept duplicate elements.

(Use a suitable collection). Search for a particular element using predefined search method in the Collection framework

```
*/
```

```
package com.mycompany.practical_slip;
```

```
import java.util.*;
```

```
public class slip6_1
```

```
{
```

```
    public static void main(String[] args) {
```

```
        TreeSet<Integer> nums = new TreeSet<>();
```

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println("How many number:");
```

```
        int n = sc.nextInt();
```

```
        System.out.println("Enter " + n + " values:");
```

```
        for(int i=0; i<n; i++)
```

```
            nums.add(sc.nextInt());
```

```
        System.out.println(nums);
```

```
        System.out.println("Enter key to search:");
```

```
        int key = sc.nextInt();
```

```
        if(nums.contains(key))
```

```

        System.out.println("Found.");
    else
        System.out.println("Not found.");
    }
}

```

```

/*
slip no 6 q2 Write a java program using multithreading to simulate traffic signal (Use Swing).
*/
package com.mycompany.practical_slip;
import java.util.logging.*;
class TrafficLight implements Runnable {
    String[] lights = {"Red", "Green", "Yellow"};

    @Override
    public void run() {
        int idx = 0;
        while(true) {
            System.out.println("Current Signal : " + lights[idx]);
            try {
                Thread.sleep(getDuration(lights[idx]) * 1000);
            } catch (InterruptedException ex) {
                Logger.getLogger(TrafficLight.class.getName()).log(Level.SEVERE, null, ex);
            }
            idx = (idx + 1) % lights.length;
        }
    }
}

```

```

    }

    private int getDuration(String light) {
        switch(light) {
            case "Red": return 4;
            case "Green": return 7;
            case "Yellow": return 2;
            default : return 0;
        }
    }
}

}

public class slip6_2
{
    public static void main(String[] args) {
        Thread t = new Thread(new TrafficLight());
        t.start();
    }
}

```

/*

slip no 7 Q2 Write a java program that implements a multi-thread application that has three threads.

First thread generates random integer number after every one second, if the number is even; second thread computes the square of that number and prints it. If the number is odd, the third thread computes the cube of that number and prints it.

*/

```
package com.mycompany.practical_slip;
```



```

import java.util.Random;

import java.util.logging.*;

class NumGenerator implements Runnable {

    Random rand = new Random();

    int n;

    @Override

    public void run() {

        while(true) {

            n = rand.nextInt(100);

            System.out.println("Generated number: " + n);

            try {

                Thread.sleep(1000);

            } catch (InterruptedException ex) {

                Logger.getLogger(NumGenerator.class.getName()).log(Level.SEVERE, null, ex);

            }

        }

    }

}

class SqrGenerator implements Runnable {

    NumGenerator numGenerator;

    SqrGenerator(NumGenerator numGenerator) {

        this.numGenerator = numGenerator;

    }

    @Override

    public void run() {

        while(true) {

```

```

        int n = numGenerator.n;

        if(n % 2 == 0)

            System.out.println("Square of " + n + " is " + n*n);

        try {

            Thread.sleep(1000);

        } catch (InterruptedException ex) {

            Logger.getLogger(SqrGenerator.class.getName()).log(Level.SEVERE, null, ex);

        }

    }

}
}

```

```

class CubeGenerator implements Runnable {

```

```

    NumGenerator numGenerator;

```

```

    int n;

```

```

    CubeGenerator(NumGenerator numGenerator) {

```

```

        this.numGenerator = numGenerator;

```

```

    }

```

```

    @Override

```

```

    public void run() {

```

```

        while(true) {

```

```

            int n = numGenerator.n;

```

```

            if(n % 2 != 0)

```

```

                System.out.println("Cube of " + n + " is " + n*n*n);

```

```

            try {

```

```

                Thread.sleep(1000);

```

```

            } catch (InterruptedException ex) {

```

```

        Logger.getLogger(CubeGenerator.class.getName()).log(Level.SEVERE, null, ex);
    }
}
}
}

public class slip7_1
{
    public static void main(String[] args) {
        NumGenerator numGenerator = new NumGenerator();
        Thread t1 = new Thread(numGenerator);
        t1.start();

        SqrGenerator sqrGenerator = new SqrGenerator(numGenerator);
        Thread t2 = new Thread(sqrGenerator);
        t2.start();

        CubeGenerator cubeGenerator = new CubeGenerator(numGenerator);
        Thread t3 = new Thread(cubeGenerator);
        t3.start();
    }
}

```

/*

slip no 7 q2. Write a java program for the following:

- i. To create a Product (Pid, Pname, Price) table.
- ii. Insert at least five records into the Product table.
- iii. Display all the records from a Product table.

Assume Database is already created

```
*/  
  
package com.mycompany.practical_slip;  
  
import java.sql.*;  
  
import java.util.Scanner;  
  
public class slip7_2  
{  
  
    public static void main(String[] args) throws SQLException {  
  
        Scanner sc = new Scanner(System.in);  
  
        Connection conn =  
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",  
"postgres");  
  
  
        int ch;  
  
        do {  
  
            System.out.println("Menu");  
  
            System.out.println("1. Create table Product.");  
  
            System.out.println("2. Insert into Product.");  
  
            System.out.println("3. Display records of product.");  
  
            System.out.println("4. Exit.");  
  
  
            System.out.println("-----");  
  
            System.out.println("Enter your choice:");  
  
            ch = sc.nextInt();  
  
  
            switch(ch) {  
  
                case 1: create(conn);  
  
                    break;  
  
                case 2: insert(conn);  
  

```

```

        break;

    case 3 : select(conn);

        break;

    default : System.out.println("Invalid choice.");

        break;

    }

} while(ch != 4);

}

private static void create(Connection conn) throws SQLException {

    String sql = "create table if not exists product("
        + "pid int primary key,"
        + "pname varchar(30),"
        + "price decimal(10, 2))";

    Statement stmt = conn.createStatement();

    stmt.execute(sql);

}

private static void insert(Connection conn) throws SQLException {

    String sql = "insert into product values(?, ?, ?)";

    PreparedStatement pt = conn.prepareStatement(sql);

    Scanner sc = new Scanner(System.in);

    System.out.println("Enter pid:");

    int pid = sc.nextInt();

    sc.nextLine();

    System.out.println("Enter pname:");

    String name = sc.nextLine();

```

```

        System.out.println("Enter price");

        float price = sc.nextFloat();


        pt.setInt(1, pid);
        pt.setString(2, name);
        pt.setFloat(3, price);
        pt.executeUpdate();
    }

    private static void select(Connection conn) throws SQLException {

        String sql = "select * from product";

        Statement stmt = conn.createStatement();

        stmt.executeQuery(sql);

        ResultSet res = stmt.getResultSet();

        while(res.next()) {

            System.out.println("Pid = " + res.getInt("pid"));

            System.out.println("PName = " + res.getString("pname"));

            System.out.println("Price = " + res.getFloat("price"));

            System.out.println("-----");

        }

    }

}

```

/*

slip no 9 Q1. Write a java program to define a thread for printing text on output screen for 'n'

number of times. Create 3 threads and run them. Pass the text 'n' parameters to the thread constructor.

Example:

- i. First thread prints "COVID19" 10 times.
- ii. Second thread prints "LOCKDOWN2020" 20 times
- iii. Third thread prints "VACCINATED2021" 30 times

*/

```
package com.mycompany.practical_slip;
```

```
class T1 extends Thread {
```

```
    String msg;
```

```
    T1(String msg) {
```

```
        this.msg = msg;
```

```
    }
```

```
    public void run() {
```

```
        for(int i=0; i<10; i++)
```

```
            System.out.println(msg);
```

```
    }
```

```
}
```

```
class T2 extends Thread {
```

```
    String msg;
```

```
    T2(String msg) {
```

```
        this.msg = msg;
```

```
    }
```

```
    public void run() {
```

```

        for(int i=0; i<20; i++)
            System.out.println(msg);
    }
}

class T3 extends Thread {
    String msg;

    T3(String msg) {
        this.msg = msg;
    }

    public void run() {
        for(int i=0; i<30; i++)
            System.out.println(msg);
    }
}

public class slip8_1
{
    public static void main(String[] args) {
        T1 t1 = new T1("COVID19");
        T2 t2 = new T2("LOCKDOWN2020");
        T3 t3 = new T3("VACCINATED2021");

        t1.start();
        t2.start();
        t3.start();
    }
}

```



```
}
```

```
/*slip no 8 Q2*/
```

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
    <title>JSP Page</title>
```

```
    <style>
```

```
      .prime { color: red; }
```

```
    </style>
```

```
  </head>
```

```
  <body>
```

```
    <h1>Is prime?</h1>
```

```
    <form action="S8Q2.jsp" method="post">
```

```
      Enter a number: <input type="text" name="num">
```

```
      <input type="submit" value="is prime ?">
```

```
    </form>
```

```
    <%
```

```
      String numStr = request.getParameter("num");
```

```
      int n = 0;
```

```
      if(numStr != null && !numStr.isEmpty()) {
```

```
        n = Integer.parseInt(numStr);
```

```
        if(n > 1) {
```

```

        boolean isPrime = true;

        for(int i=2; i<n; i++) {
            if(n % i == 0) {
                isPrime = false;
                break;
            }
        }

        if(isPrime) {
%>
            <h3 class="prime">Prime number</h3>
        <%
        } else {
%>
            <h3 class="prime">Not a prime number</h3>
        <%
        }
        }
    }
%>
</body>
</html>

```

/*

slip no 9 Q1. Write a Java program to create a thread for moving a ball inside a panel vertically. The

ball should be created when the user clicks on the start button (Use Swing).

```

*/

package com.mycompany.practical_slip;

import java.awt.*;
import java.awt.event.ActionEvent;
import java.util.logging.*;
import javax.swing.*;

class BallPanel extends JPanel
{
    private int yDelta = 0;

    @Override
    protected void paintComponent(Graphics g)
    {
        super.paintComponent(g);
        g.setColor(Color.red);
        g.fillOval(175, yDelta, 50, 50);
        repaint();
    }

    void setBallPos(int y) {
        this.yDelta = y;
    }
}

public class slip9_1
{
    private Thread ballThread;
    private BallPanel ballPanel;
    private JFrame frame;
    private JButton start;

```

```

slip9_1()
{
    frame = new JFrame("Ball Movement App");
    frame.setSize(400, 400);

    ballPanel = new BallPanel();

    start = new JButton("Start");
    start.addActionListener((ActionEvent e) ->
    {
        startBallMovement();
    });

    frame.setLayout(new BorderLayout());
    frame.add(ballPanel, BorderLayout.CENTER);
    frame.add(start, BorderLayout.SOUTH);
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    frame.setVisible(true);
}

```

```

private void startBallMovement()
{
    if(ballThread == null || !ballThread.isAlive())
    {
        ballThread = new Thread(() -> {
            moveBallVertically();
        });
    }
}

```

```
        ballThread.start();  
    }  
}
```

```
private void moveBallVertically()  
{  
    int y = 0;  
    int dir = 1;  
    while(true)  
    {  
        try  
        {  
            Thread.sleep(15);  
        } catch (InterruptedException ex)  
        {  
            Logger.getLogger(slip9_1.class.getName()).log(Level.SEVERE, null, ex);  
        }  
  
        y += 5 * dir;  
  
        if(y > ballPanel.getHeight() - 50)  
            dir = -1;  
  
        if(y <= 0)  
            dir = 1;  
  
        ballPanel.setBallPos(y);  
    }  
}
```

```

    }
}

public static void main(String[] args)
{
    new slip9_1();
}
}
/*

```

slip no 10 Q2. Write a Java program to display first record from student table (RNo, SName, Per) onto

the TextFields by clicking on button. (Assume Student table is already created)

```

*/
package com.mycompany.javaslip;
import java.awt.GridLayout;
import java.sql.*;
import java.util.logging.*;
import javax.swing.*;
class StudentRec
{
    private JFrame frame;
    private JTextField tf1, tf2, tf3;
    private JButton display;

    StudentRec() throws SQLException {
        frame = new JFrame("Student First Record.");
        frame.setSize(200, 300);

```

```

tf1 = new JTextField();

tf2 = new JTextField();

tf3 = new JTextField();


display = new JButton("Show Record");


Connection conn =
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",
"postgres");


display.addActionListener((ActionEvent) -> {
    try {
        select(conn);
    } catch (SQLException ex) {
        Logger.getLogger(StudentRec.class.getName()).log(Level.SEVERE, null, ex);
    }
});


frame.setLayout(new GridLayout(4,1));


frame.add(tf1);
frame.add(tf2);
frame.add(tf3);
frame.add(display);


frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frame.setVisible(true);
}

private void select(Connection conn) throws SQLException {

```

```

String sql = "select * from student where rno = 1";

Statement stmt = conn.createStatement();

stmt.executeQuery(sql);

ResultSet rs = stmt.getResultSet();

while(rs.next()) {

    tf1.setText("    " + rs.getInt("rno"));

    tf2.setText("    " + rs.getString("sname"));

    tf3.setText("    " + rs.getFloat("per") + "");

}

}

}

public class slip10_2

{

    public static void main(String[] args) throws SQLException {

        new StudentRec();

    }

}

/*

slip no 11 q2 Write a Java program to display information about all columns in the DONAR
table

using ResultSetMetaData.

*/

package com.mycompany.javaslip;

import java.sql.*;

```



```

public class slip11_2
{
    public static void main(String[] args) throws SQLException {
        Connection conn =
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",
"postgres");

        String sql = "select * from donar";

        Statement stmt = conn.createStatement();
        stmt.executeQuery(sql);

        ResultSet rs = stmt.getResultSet();
        ResultSetMetaData rsmd = rs.getMetaData();

        int colCnt = rsmd.getColumnCount();
        System.out.println("Donar table Meta Data:");
        for(int i=1; i<colCnt; i++) {
            String colName = rsmd.getColumnName(i);
            String colType = rsmd.getColumnTypeName(i);
            int colSize = rsmd.getColumnDisplaySize(i);

            System.out.println(colName + " " + colType + "(" + colSize + ")");
        }
    }
}

```

```
/* slip no 12 */

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>JSP Page</title>

    </head>

    <body>

        <h1>Is Perfect?</h1>

        <form action="slip12_1.jsp" method="post">

            Enter a number: <input type="text" name="num">

            <input type="submit" value="is perfect?">

        </form>

        <%

            String numStr = request.getParameter("num");

            int n = 0;

            if(numStr != null && !numStr.isEmpty()) {

                n = Integer.parseInt(numStr);

                if(n > 1) {

                    int sum = 0;

                    for(int i=1; i<=n/2; i++) {

                        if(n % i == 0) {

                            sum += i;

                        }

                    }

                }

            }

        %>

    </body>

</html>
```

```

        }
    }

    if(sum == n) {
%>
        <h3>Perfect number</h3>
    <%
    } else {
%>
        <h3>Not a perfect number</h3>
    <%
    }
    }
}
%>
</body>
</html>

```

/*

slip no 12 Q2 Write a Java Program to create a PROJECT table with field's project_id,
Project_name,

Project_description, Project_Status. Insert values in the table. Display all the details of
the PROJECT table in a tabular format on the screen.(using swing).

*/

package com.mycompany.javaslip;

import java.awt.BorderLayout;

```

import java.sql.*;

import javax.swing.JFrame;

import javax.swing.JScrollPane;

import javax.swing.JTable;

class ProjectTable {

    private JFrame frame;

    private JTable table;


    ProjectTable() throws SQLException {

        frame = new JFrame("Project Table");

        frame.setLayout(new BorderLayout());

        frame.setSize(600, 150);

        Connection conn =
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",
"postgres");

        createTable(conn);

        insert(conn);


        String[] colNames = {"pid", "pname", "description", "status"};

        String[][] data = retrieveData(conn);

        table = new JTable(data, colNames);

        JScrollPane scrPane = new JScrollPane(table);

        frame.getContentPane().add(scrPane, BorderLayout.CENTER);

        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        frame.setVisible(true);

    }

```

```

private void createTable(Connection conn) throws SQLException {
    String sql = "create table if not exists project("
        + "pid int primary key,"
        + "pname varchar(30),"
        + "description varchar(30),"
        + "status varchar(30))";

    Statement stmt = conn.createStatement();
    stmt.execute(sql);
}

private void insert(Connection conn) throws SQLException {
    String sql = "insert into project values"
        + "(1, 'Game', 'Java Platformer Game', 'complete'),"
        + "(2, 'Website', 'MERN stack', 'complete'),"
        + "(3, 'Portfolio', 'PHP', 'complete')";

    Statement stmt = conn.createStatement();
    stmt.executeUpdate(sql);
}

private String[][] retrieveData(Connection conn) throws SQLException {
    String sql = "select * from project";

    Statement stmt = conn.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
    ResultSet.CONCUR_READ_ONLY);

    ResultSet rs = stmt.executeQuery(sql);

    ResultSetMetaData rsmd = rs.getMetaData();

    int noCol = rsmd.getColumnCount();

    rs.last();

    int noRow = rs.getRow();

```

```

        rs.beforeFirst();

        String[][] data = new String[noRow][noCol];

        int rowCnt = 0;
        while (rs.next()) {
            for (int i = 1; i <= noCol; i++)
                data[rowCnt][i - 1] = rs.getString(i);

            rowCnt++;
        }

        return data;
    }
}

public class slip12_2
{
    public static void main(String[] args) throws SQLException {
        new ProjectTable();
    }
}

```

/*

Slip no 13 Q1 Write a Java program to display information about the database and list all the tables in

the database. (Use DatabaseMetaData).

*/

```

package com.mycompany.javaslip;

import java.sql.Connection;

import java.sql.DatabaseMetaData;

```

```

import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
public class slip13_1
{
    public static void main(String[] args) throws SQLException {
        Connection conn =
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",
"postgres");
        DatabaseMetaData md = conn.getMetaData();

        System.out.println("" + md.getDatabaseProductName());
        System.out.println("" + md.getDatabaseProductVersion());
        System.out.println("" + md.getDriverName());
        System.out.println("" + md.getDriverVersion());

        ResultSet tables = md.getTables(null, null, "%", new String[]{"TABLE"});
        System.out.println("Tables in Database:");
        while(tables.next()) {
            String tableName = tables.getString("TABLE_NAME");
            System.out.println(tableName);
        }
    }
}

/*

```

Slip no13 Q2 Write a Java program to show lifecycle (creation, sleep, and dead) of a thread.
Program

should print randomly the name of thread and value of sleep time. The name of the thread should be hard coded through constructor. The sleep time of a thread will be a random integer in the range 0 to 4999.

```
*/  
  
package com.mycompany.javaslip;  
  
import java.util.Random;  
  
import java.util.logging.Level;  
  
import java.util.logging.Logger;  
  
class ThreadLifeCycle extends Thread {  
    private String threadName;  
  
    ThreadLifeCycle(String threadName) {  
        this.threadName = threadName;  
    }  
  
    public void run() {  
        Random rand = new Random();  
        int sTime = rand.nextInt(5000);  
        System.out.println(threadName + " is created.");  
        System.out.println("Sleep time of " + threadName + " is: " + sTime + "ms.");  
        try {  
            Thread.sleep(sTime);  
        } catch (InterruptedException ex) {  
            Logger.getLogger(ThreadLifeCycle.class.getName()).log(Level.SEVERE, null, ex);  
        }  
    }  
}
```



```

        System.out.println(threadName + " is dead.");
    }
}

public class slip13_2
{
    public static void main(String[] args) {
        ThreadLifeCycle t1 = new ThreadLifeCycle("First");
        ThreadLifeCycle t2 = new ThreadLifeCycle("Second");
        ThreadLifeCycle t3 = new ThreadLifeCycle("Third");

        t1.start();
        t2.start();
        t3.start();
    }
}

```

/*

slip no 14 Q1 Write a Java program using Multithreading for a simple search engine. Accept a string

to be searched. Search the string in all text files in the current folder. Use a separate thread for each file. The result should display the filename and line number where the string is found.

*/

```

package com.mycompany.javaslip;

import java.io.*;

import java.util.Scanner;

class SearchThread extends Thread {

```

```

private File file;

private String searchStr;

SearchThread(File file, String searchStr) {

    this.file = file;

    this.searchStr = searchStr;

}

public void run() {

    searchInFile(file, searchStr);

}

public void searchInFile(File file, String searchStr) {

    boolean found = false;

    try (BufferedReader br = new BufferedReader(new FileReader(file))) {

        String line;

        int lineNo = 0;

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

            lineNo++;

            if (line.contains(searchStr)) {

                System.out.println("Found " + searchStr + " in " + file.getName() + " at line " +
lineNo);

                found = true;

            }

        }

    } catch (IOException ex) {

        System.err.println("Error reading file: " + file.getName());

    }

    if (!found) {

        System.out.println(searchStr + " not found in " + file.getName());

    }

}

```

```

    }
}
public class slip14_1
{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter string to be searched in files:");
        String searchStr = sc.nextLine();
        File currDir = new File(".");
        File[] files = currDir.listFiles();
        if (files != null) {
            boolean foundInAnyFile = false;
            for (File file : files) {
                if (file.isFile() && file.getName().endsWith(".txt")) {
                    SearchThread t = new SearchThread(file, searchStr);
                    t.start();
                    foundInAnyFile = true;
                }
            }
            if (!foundInAnyFile) {
                System.out.println("No text files found in the current directory.");
            }
        } else {
            System.err.println("Error: Unable to access current directory.");
        }
    }
}

```

```
/* slipno 14 Q2 */

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>JSP Page</title>

        <style>

            .res { color: red; font-size: 18px; }

        </style>

    </head>

    <body>

        <h1>Calculate sum of fist and last digit?</h1>

        <form action="slip14_2.jsp" method="post">

            Enter a number: <input type="text" name="num">

            <input type="submit" value="sum?">

        </form>

        <%

            String numStr = request.getParameter("num");

            int n = 0;

            if(numStr != null && !numStr.isEmpty()) {

                n = Integer.parseInt(numStr);

                int fDigit = n;

                while(fDigit >= 10) {
```

```

        fDigit /= 10;
    }

    int lDigit = n % 10;

    int sum = fDigit + lDigit;

    %>

    <h3 class="res">Sum of first and last digit is <%= sum %></h3>

    <%

    }

    %>

</body>
</html>

```

```

/*
slip no 15 q1 Write a java program to display name and priority of a Thread.
*/

package com.mycompany.javaslip;

class MyThread extends Thread {

    public void run() {

        System.out.println("Name of the thread: " + Thread.currentThread().getName());

        System.out.println("Priority of the thread: " + Thread.currentThread().getPriority());

    }

}

public class slip15_1

{

    public static void main(String[] args) {

```

```
MyThread t1 = new MyThread();  
MyThread t2 = new MyThread();  
  
t1.start();  
t2.start();  
}  
}
```

```
/*
```

slip no 16 Q1. Write a java program to create a TreeSet, add some colors (String) and print out the

content of TreeSet in ascending order

```
*/
```

```
package com.mycompany.javaslip;
```

```
import java.util.*;
```

```
public class slip16_1
```

```
{
```

```
    public static void main(String[] args) {
```

```
        Set<String> colors = new TreeSet<>();
```

```
        colors.add("Red");
```

```
        colors.add("Blue");
```

```
        colors.add("Green");
```

```
        colors.add("Yellow");
```

```
        colors.add("Black");
```

```
        System.out.println(colors);
    }
}
```

```
/*
```

slip no 16 Q2 Write a Java program to accept the details of Teacher (TNo, TName, Subject).
Insert at

least 5 Records into Teacher Table and display the details of Teacher who is teaching
"JAVA" Subject. (Use PreparedStatement Interface)

```
*/
```

```
package com.mycompany.javaslip;
```

```
import java.sql.*;
```

```
import java.util.Scanner;
```

```
class Teacher {
```

```
    Teacher() throws SQLException, SQLException {
```

```
        Connection conn =
```

```
        DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",  
        "postgres");
```

```
        for(int i=0; i<5; i++)
```

```
            insert(conn);
```

```
        select(conn);
```

```
    }
```

```
    private void insert(Connection conn) throws SQLException {
```

```
        String sql = "insert into teacher values(?, ?, ?)";
```

```

PreparedStatement ps = conn.prepareStatement(sql);

Scanner sc = new Scanner(System.in);

System.out.println("Enter tno:");
ps.setInt(1, sc.nextInt());
sc.nextLine();

System.out.println("Enter tname:");
ps.setString(2, sc.nextLine());

System.out.println("Enter subject:");
ps.setString(3, sc.nextLine());

ps.executeUpdate();
}

private void select(Connection conn) throws SQLException {
    String sql = "select * from teacher where subject = 'java'";

    Statement stmt = conn.createStatement();

    ResultSet rs = stmt.executeQuery(sql);
    while(rs.next()) {
        System.out.println("teacher tno: " + rs.getInt("tno"));
        System.out.println("teacher tname: " + rs.getString("tname"));
        System.out.println("teacher subject: " + rs.getString("subject"));
    }
}

```



```

}

public class slip16_2
{
    public static void main(String[] args) throws SQLException {
        new Teacher();
    }
}

```

```

/*

```

Slip no 17 q1Write a java program to accept 'N' integers from a user. Store and display integers in

sorted order having proper collection class. The collection should not accept duplicate elements.

```

*/

```

```

package com.mycompany.javaslip;

import java.util.Scanner;

import java.util.Set;

import java.util.TreeSet;

public class slip17_1
{
    public static void main(String[] args) {
        Set<Integer> set = new TreeSet<>();

        Scanner sc = new Scanner(System.in);

        System.out.println("How many integers:");

        int n = sc.nextInt();
    }
}

```

```

        System.out.println("Enter " + n + " values:");
        for(int i=0; i<n; i++)
            set.add(sc.nextInt());

        System.out.println(set);
    }
}

```

```

/*

```

Slip no 17 Q2 Write a java program using Multithreading to display the number's between 1 to 100

continuously in a JTextField by clicking on JButton. (Use Runnable Interface & Swing).

```

*/

package com.mycompany.javaslip;

import java.awt.GridLayout;
import java.awt.event.ActionEvent;
import java.util.logging.*;
import javax.swing.*;

public class slip17_2
{
    private JFrame frame;
    private JTextField tf;
    private JButton print;
    private Thread intThread;

```

```

slip17_2() {

    frame = new JFrame("Integer printing App");

    frame.setSize(300, 200);

    frame.setLayout(new GridLayout(2,1));


    tf = new JTextField();

    print = new JButton("Print");


    frame.add(tf);

    frame.add(print);


    print.addActionListener((ActionEvent e) -> {

        tf.setText("");

        if(intThread == null || !intThread.isAlive()) {

            intThread = new Thread(new Runnable() {

                @Override

                public void run() {

                    while(true) {

                        for(int i=1; i<=100; i++) {

                            tf.setText(String.valueOf(i));

                            try {

                                Thread.sleep(500);

                            } catch (InterruptedException ex) {

                                Logger.getLogger(S17Q2.class.getName()).log(Level.SEVERE, null, ex);

                            }

                        }

                    }

                    tf.setText("");

                }

            });

        }

    });
}

```

```

        }
    });
    intThread.start();
}
});

frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frame.setVisible(true);
}

public static void main(String[] args) {
    new S17Q2();
}
}

```

```

/*

```

Slip n 18 q1 Write a java program using Multithreading to display all the vowels from a given String. Each vowel should be displayed after every 3 seconds.

```

*/

```

```

package com.mycompany.javaslip;
import java.util.Scanner;
import java.util.logging.*;
public class slip18_1
{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

```

```

System.out.println("Enter any string:");

String str = sc.nextLine();

Thread t = new Thread(() -> {
    for(int i=0; i<str.length(); i++) {
        String str2 = str.toLowerCase();
        char ch = str2.charAt(i);
        if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
            System.out.println(ch);
            try {
                Thread.sleep(3000);
            } catch (InterruptedException ex) {
                Logger.getLogger(slip18_1.class.getName()).log(Level.SEVERE, null, ex);
            }
            System.out.println("3 seconds are passed....");
        }
    }
});

t.start();
}
}

```

/*

slip no 19 Q1 Write a java program to accept 'N' Integers from a user store them into
LinkedList

Collection and display only negative integers.

```
*/  
  
package com.mycompany.javaslip;  
  
import java.util.*;  
  
public class slip19_1  
{  
    public static void main(String[] args) {  
        List<Integer> l = new LinkedList<>();  
        Scanner sc = new Scanner(System.in);  
  
        System.out.println("How many values:");  
        int n = sc.nextInt();  
  
        System.out.println("Enter " + n + " values:");  
        for(int i=0; i<n; i++)  
            l.add(sc.nextInt());  
  
        System.out.println("Negative integers are:");  
        Iterator itr = l.iterator();  
        while(itr.hasNext()) {  
            int num = (int)itr.next();  
            if(num < 0)  
                System.out.println(num);  
        }  
    }  
}
```

```
/* Slip no 20 */

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>JSP Page</title>

    </head>

    <body>

        <form action="slip20_1.jsp" method="post">

            Enter a number :<input type="text" name="num"><br>

            <input type="submit" value="show in words">

        </form>

        <%

            String numStr = request.getParameter("num");

            if(numStr != null && !numStr.isEmpty()) {

                int t = Integer.parseInt(numStr);

                int rev = 0, rem;

                // reverse the number

                while(t > 0) {

                    rem = t % 10;

                    rev = (rev * 10) + rem;

                    t = t / 10;

                }

            }

        %>

    </body>

</html>
```

```
t = rev;
rev = 0;
while(t > 0) {
    rem = t % 10;
    rev = (rev * 10) + rem;
    t = t / 10;

    switch(rem) {
        case 0: out.println("zero");
            break;
        case 1: out.println("one");
            break;
        case 2: out.println("two");
            break;
        case 3: out.println("three");
            break;
        case 4: out.println("four");
            break;
        case 5: out.println("five");
            break;
        case 6: out.println("six");
            break;
        case 7: out.println("seven");
            break;
        case 8: out.println("eight");
            break;
        case 9: out.println("nine");
            break;
    }
}
```



```
        }  
    }  
}  
%>  
</body>  
</html>
```

```
/*  
slip no 20 q2Write a java program using Multithreading to demonstrate drawing temple  
(Use  
Swing)  
*/  
package com.mycompany.javaslip;  
  
import javax.swing.*.*;  
import java.awt.*.*;  
  
class TempleDrawing extends JFrame  
{  
    public TempleDrawing()  
    {  
        setTitle("Simple Temple Drawing");  
        setSize(300, 300);  
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
        setLocationRelativeTo(null);  
        TemplePanel templePanel = new TemplePanel();  
        add(templePanel);  
        setVisible(true);  
    }  
}
```

```

    }
}
class TemplePanel extends JPanel
{
    @Override
    protected void paintComponent(Graphics g)
    {
        super.paintComponent(g);
        drawTemple(g);
    }
    private void drawTemple(Graphics g)
    {
        g.setColor(Color.BLACK);
        g.fillRect(100, 100, 100, 100); // Main structure

        g.setColor(Color.WHITE);
        g.fillRect(130, 150, 40, 50); // Main Door

        g.setColor(Color.RED);
        int[] xPoints = {100, 150, 200}; // Triangle for roof
        int[] yPoints = {100, 50, 100};
        g.fillPolygon(xPoints, yPoints, 3);
        g.setColor(Color.ORANGE);
        g.fillRect(150, 40, 20, 10); // Flag
    }
}
public class slip20_2
{

```

```

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

```

```

/*

```

slip no 21 Q1. Write a java program to accept 'N' Subject Names from a user store them into LinkedList Collection and Display them by using Iterator interface.

```

*/

```

```

package com.mycompany.javaslip;

import java.util.*;

public class slip21_1
{
    public static void main(String[] args) {
        List<String> l = new LinkedList<>();
        Scanner sc = new Scanner(System.in);

        System.out.println("How many subjects:");
        int n = sc.nextInt();
        sc.nextLine();
    }
}

```

```

        System.out.println("Enter " + n + " subjects:");
        for(int i=0; i<n; i++)
            l.add(sc.nextLine());

        System.out.println("Subjects are:");
        Iterator itr = l.iterator();
        while(itr.hasNext()) {
            System.out.println(itr.next());
        }
    }
}

```

/*

slip no 22 Q2 Write a java program using Multithreading to solve producer consumer problem in

which a producer produces a value and consumer consume the value before producer generate the next value. (Hint: use thread synchronization)

*/

```

package com.mycompany.javaslip;

import java.util.LinkedList;

class SharedResource {
    private LinkedList<String> buffer = new LinkedList<>();
    private int capacity = 1;

    public synchronized void produce(String value) {
        while(buffer.size() == capacity) {

```

```
    try {  
        wait();  
    } catch (InterruptedException e) {  
        e.printStackTrace();  
    }  
}
```

```
buffer.add(value);  
System.out.println("Produced: " + value);  
notifyAll();  
}
```

```
public synchronized String consume() {  
    while (buffer.size() == 0) {  
        try {  
            wait();  
        } catch (InterruptedException e) {  
            e.printStackTrace();  
        }  
    }  
}
```

```
String value = buffer.removeFirst();  
System.out.println("Consume: " + value);  
notifyAll();  
  
return value;  
}  
}
```

```
class Producer extends Thread {  
    private SharedResource sharedResource;  
  
    public Producer(SharedResource sharedResource) {  
        this.sharedResource = sharedResource;  
    }  
  
    @Override  
    public void run() {  
        for(int i=0; i<5; i++) {  
            String value = "Value " + i;  
            sharedResource.produce(value);  
            try {  
                sleep(1000);  
            } catch (InterruptedException e) {  
                e.printStackTrace();  
            }  
        }  
    }  
}  
  
class Consumer extends Thread {  
    private SharedResource sharedResource;  
  
    public Consumer(SharedResource sharedResource) {  
        this.sharedResource = sharedResource;  
    }  
  
    @Override
```

```

public void run() {
    for(int i=0; i<5; i++) {
        String value = "Value " + i;
        sharedResource.consume();
        try {
            sleep(1000);
        } catch (InterruptedException e) {
            e.printStackTrace();
        }
    }
}

public class slip21_2
{
    public static void main(String[] args) {
        SharedResource sharedResource = new SharedResource();

        Producer producer = new Producer(sharedResource);
        Consumer consumer = new Consumer(sharedResource);

        producer.start();
        consumer.start();
    }
}

/*

```

slip no 22 Q1 Write a Menu Driven program in Java for the following: Assume Employee table with

attributes (ENo, EName, Salary) is already created. 1. Insert 2. Update 3. Display 4.

Exit

```
*/  
  
package com.mycompany.javaslip;  
  
import java.sql.*;  
  
import java.util.Scanner;  
  
public class slip22_1  
{  
    private static void insert(Connection conn) throws SQLException {  
        String sql = "insert into emp2 values (?, ?, ?)";  
        PreparedStatement ps = conn.prepareStatement(sql);  
  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter eno:");  
        ps.setInt(1, sc.nextInt());  
        sc.nextLine();  
        System.out.println("Enter ename:");  
        ps.setString(2, sc.nextLine());  
        System.out.println("Enter salary:");  
        ps.setFloat(3, sc.nextFloat());  
  
        ps.executeUpdate();  
    }  
  
    private static void update(Connection conn) throws SQLException {  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter eno:");
```



```

int eno = sc.nextInt();

sc.nextLine();


System.out.println("Enter new  ename:");

String ename = sc.nextLine();


System.out.println("Enter new salary:");

float salary = sc.nextFloat();


String sql = "update emp2 set ename = '" + ename + "', salary = " + salary + " where eno
= " + eno;

Statement stmt = conn.createStatement();

stmt.executeUpdate(sql);
}

private static void display(Connection conn) throws SQLException {

String sql = "select * from emp2";

Statement stmt = conn.createStatement();

ResultSet rs = stmt.executeQuery(sql);

System.out.println("Emp table data:");

while (rs.next()) {

    System.out.println("eno: " + rs.getInt("eno"));

    System.out.println("ename: " + rs.getString("ename"));

    System.out.println("salary: " + rs.getFloat("salary"));

}

}

public static void main(String[] args) throws SQLException {

Scanner sc = new Scanner(System.in);

```

```
Connection conn =
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",
"postgres");

int ch;

do {

    System.out.println("Menu");

    System.out.println("1. Insert");

    System.out.println("2. Update");

    System.out.println("3. Display");

    System.out.println("4. Exit");

    System.out.println("-----");

    System.out.println("Enter your choice:");

    ch = sc.nextInt();

    switch (ch) {

        case 1:

            insert(conn);

            break;

        case 2:

            update(conn);

            break;

        case 3:

            display(conn);

            break;

    }

} while (ch != 4);

}
```

```
*/ slip no 22 Q2 */
```

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
```

```
<%@page import="java.time.LocalDateTime" %>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
    <title>JSP Page</title>
```

```
  </head>
```

```
  <body>
```

```
    <form action="slip22_2.jsp" method="post">
```

```
      Enter user name :<input type="text" name="user"><br>
```

```
      <input type="submit" value="greet">
```

```
    </form>
```

```
  <%
```

```
    String user = request.getParameter("user");
```

```
    if(user != null && !user.isEmpty()) {
```

```
      LocalDateTime currTime = LocalDateTime.now();
```

```
      int hour = currTime.getHour();
```

```
      if(hour >= 0 && hour < 12)
```

```
        out.println("Good Morning " + user);
```

```
      else if(hour >= 12 && hour <= 18)
```

```
        out.println("Good Afternoon " + user);
```

```
        else
            out.println("Good Morning " + user);
    }
    %>
</body>
</html>
```

```
/*
```

slip no 23 Q1 Write a java program using Multithreading to accept a String from a user and display

each vowel from a String after every 3 seconds

```
*/
```

```
package com.mycompany.javaslip;
```

```
import java.util.Scanner;
```

```
import java.util.logging.*;
```

```
public class slip23_1
```

```
{
```

```
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println("Enter any string:");
```

```
        String str = sc.nextLine();
```

```
        Thread t = new Thread(() -> {
```

```
            for(int i=0; i<str.length(); i++) {
```

```
                String str2 = str.toLowerCase();
```

```

        char ch = str2.charAt(i);

        if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {

            System.out.println(ch);

            try {

                Thread.sleep(3000);

            } catch (InterruptedException ex) {

                Logger.getLogger(slip23_1.class.getName()).log(Level.SEVERE, null, ex);

            }

            System.out.println("3 seconds are passed....");

        }

    }

});

t.start();
}
}

```

/*

Slip no 24 Q1 Write a java program using Multithreading to scroll the text from left to right continuously (Use Swing).

*/

```

package com.mycompany.javaslip;

import javax.swing.*.*;

class TextScrolling extends JFrame implements Runnable {

    private JLabel label;

    private String text;

    private Thread thread;

```

```

public TextScrolling(String text) {
    this.text = text;
    label = new JLabel(text);
    add(label);
    setSize(300, 100);
    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    setVisible(true);
}

public void startScrolling() {
    thread = new Thread(this);
    thread.start();
}

@Override
public void run() {
    try {
        while (true) {
            String labelText = label.getText();
            labelText = labelText.substring(1) + labelText.charAt(0);
            label.setText(labelText);
            Thread.sleep(200); // Adjust scrolling speed
        }
    } catch (InterruptedException e) {
        e.printStackTrace();
    }
}

public class slip24_1
{

```

```
public static void main(String[] args) {  
    SwingUtilities.invokeLater(() -> {  
        TextScrolling ts = new TextScrolling("Hello, this text is scrolling continuously!");  
        ts.startScrolling();  
    });  
}  
}
```

```
/*
```

SLip no 25 Q2 Write a Java Program for the following: Assume database is already created.

```
*/
```

```
package com.mycompany.javaslip;  
  
import java.awt.BorderLayout;  
import java.awt.GridLayout;  
import java.awt.event.ActionEvent;  
import java.sql.Connection;  
import java.sql.DriverManager;  
import java.sql.SQLException;  
import java.sql.Statement;  
import java.util.logging.Level;  
import java.util.logging.Logger;  
import javax.swing.JButton;  
import javax.swing.JFrame;  
import javax.swing.JLabel;  
import javax.swing.JPanel;  
import javax.swing.JTextField;
```

```
public class slip25_2
{
    JFrame frame;

    JButton b1, b2, b3;

    JTextField tf;

    slip25_2() throws SQLException {
        frame = new JFrame("DB App");
        frame.setLayout(new BorderLayout());
        frame.setSize(600, 100);

        JPanel p1 = new JPanel();
        JPanel p2 = new JPanel();

        tf = new JTextField();
        p1.setLayout(new GridLayout(1, 2));
        p1.add(new JLabel("Type your DDL query:"));
        p1.add(tf);

        b1 = new JButton("Create Table");
        b2 = new JButton("Alter Table");
        b3 = new JButton("Drop Table");
        p2.setLayout(new GridLayout(1, 3));
        p2.add(b1);
        p2.add(b2);
        p2.add(b3);
    }
}
```



```
Connection conn =  
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",  
"postgres");
```

```
b1.addActionListener((ActionEvent e) -> {  
    try {  
        create(conn);  
    } catch (SQLException ex) {  
        Logger.getLogger(S25Q2.class.getName()).log(Level.SEVERE, null, ex);  
    }  
});
```

```
b2.addActionListener((ActionEvent e) -> {  
    try {  
        alter(conn);  
    } catch (SQLException ex) {  
        Logger.getLogger(S25Q2.class.getName()).log(Level.SEVERE, null, ex);  
    }  
});
```

```
b3.addActionListener((ActionEvent e) -> {  
    try {  
        drop(conn);  
    } catch (SQLException ex) {  
        Logger.getLogger(S25Q2.class.getName()).log(Level.SEVERE, null, ex);  
    }  
});
```

```
frame.add(p1, BorderLayout.CENTER);
```

```
frame.add(p2, BorderLayout.SOUTH);
```

```
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
```

```
    frame.setVisible(true);  
}
```

```
private void create(Connection conn) throws SQLException {  
    String sql = tf.getText();  
    Statement stmt = conn.createStatement();  
    stmt.execute(sql);  
}
```

```
private void alter(Connection conn) throws SQLException {  
    String sql = tf.getText();  
    Statement stmt = conn.createStatement();  
    stmt.execute(sql);  
}
```

```
private void drop(Connection conn) throws SQLException {  
    String sql = tf.getText();  
    Statement stmt = conn.createStatement();  
    stmt.execute(sql);  
}
```

```
public static void main(String[] args) throws SQLException {  
    new S25Q2();  
}  
}
```

```
/*
```

Slip no 26 Q1 Write a Java program to delete the details of given employee (ENo EName Salary).

Accept employee ID through command line. (Use PreparedStatement Interface)

```
*/  
  
package com.mycompany.javaslip;  
  
import java.sql.*;  
  
public class slip26_1  
{  
  
    public static void main(String[] args) throws SQLException {  
  
        Connection conn =  
        DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",  
        "postgres");  
  
        String sql = "delete from emp where id = ?";  
        PreparedStatement ps = conn.prepareStatement(sql);  
        ps.setInt(1, Integer.parseInt(args[0]));  
        ps.executeUpdate();  
    }  
}
```

/*

slip no 27 Q1 Write a Java Program to display the details of College (CID, CName, address, Year)

database table on JTable.

```
*/  
  
package com.mycompany.javaslip;  
  
import java.awt.BorderLayout;  
  
import java.sql.*;
```

```

import javax.swing.*;

class CollegeTable {

    private JFrame frame;

    private JTable table;

    CollegeTable() throws SQLException {

        frame = new JFrame("Project Table");

        frame.setLayout(new BorderLayout());

        frame.setSize(600, 150);

        Connection conn =
DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",
"postgres");

        String[] colNames = {"cid", "cname", "address", "year"};

        String[][] data = retrieveData(conn);

        table = new JTable(data, colNames);

        JScrollPane scrPane = new JScrollPane(table);

        frame.getContentPane().add(scrPane, BorderLayout.CENTER);

        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        frame.setVisible(true);
    }

    private String[][] retrieveData(Connection conn) throws SQLException {

        String sql = "select * from college";

        Statement stmt = conn.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
ResultSet.CONCUR_READ_ONLY);

        ResultSet rs = stmt.executeQuery(sql);

        ResultSetMetaData rsmd = rs.getMetaData();

```

```

        int noCol = rsmd.getColumnCount();

        rs.last();

        int noRow = rs.getRow();

        rs.beforeFirst();

        String[][] data = new String[noRow][noCol];

        int rowCnt = 0;

        while (rs.next()) {

            for (int i = 1; i <= noCol; i++)

                data[rowCnt][i - 1] = rs.getString(i);

            rowCnt++;

        }

        return data;

    }

}

public class slip27_1

{

    public static void main(String[] args) throws SQLException {

        new CollegeTable();

    }

}

```

/*

Slip no 28 Q2 Write a java program to display name of currently executing Thread in multithreading

*/

```

package com.mycompany.javaslip;

public class slip28_2

```

```

{
    public static void main(String[] args) {
        Thread t = new Thread(() -> {
            System.out.println("Name of the thread: " + Thread.currentThread().getName());
        });
        t.start();
    }
}

```

/*

Slip no 29 Q1. Write a Java program to display information about all columns in the DONAR table

using ResultSetMetaData.

*/

```
package com.mycompany.javaslip;
```

```
import java.sql.*;
```

```
public class slip29_1
```

```
{
```

```
    public static void main(String[] args) throws SQLException {
```

```
        Connection conn =
```

```
        DriverManager.getConnection("jdbc:postgresql://localhost:5432/postgres", "postgres",
        "postgres");
```

```
        String sql = "select * from donar";
```

```
        Statement stmt = conn.createStatement();
```

```
        stmt.executeQuery(sql);
```

```

ResultSet rs = stmt.getResultSet();

ResultSetMetaData rsmd = rs.getMetaData();


int colCnt = rsmd.getColumnCount();

System.out.println("Donar table Meta Data:");

for(int i=1; i<colCnt; i++) {

    String colName = rsmd.getColumnName(i);

    String colType = rsmd.getColumnTypeName(i);

    int colSize = rsmd.getColumnDisplaySize(i);


    System.out.println(colName + " " + colType + "(" + colSize + ")");

}

}

}

```

/*

slip no 29 Q2. Write a Java program to create LinkedList of integer objects and perform the following:

- i. Add element at first position
- ii. Delete last element
- iii. Display the size of link list

*/

```

package com.mycompany.javaslip;

import java.util.*;

public class slip29_2

```

```

{
    public static void main(String[] args) {
        List<Integer> l = new LinkedList<>();
        Scanner sc = new Scanner(System.in);

        int ch;

        do {
            System.out.println("Menu");
            System.out.println("1. Insert at head");
            System.out.println("2. Delete tail.");
            System.out.println("3. Display size");
            System.out.println("4. Exit");

            System.out.println("-----");
            System.out.println("Enter your choice:");
            ch = sc.nextInt();
            System.out.println();

            switch(ch) {
                case 1: System.out.println("Enter a number:");
                    l.addFirst(sc.nextInt());
                    break;
                case 2: l.removeLast();
                    break;
                case 3:
                    System.out.println("Size : " + l.size() + "\n" + l);
                    break;
            }
        } while (ch != 4);
    }
}

```



```

        default: System.out.println("Invalid choice.");
    }

    System.out.println("-----");
} while(ch != 4);
}
}

```

```

/*

```

Slip no 30 Q1. Write a java program using Multithreading to demonstrate drawing Indian flag (Use

Swing

```

*/

```

```

package com.mycompany.javaslip;

```

```

import javax.swing.*;

```

```

import java.awt.*;

```

```

class IndianFlag extends JFrame {

```

```

    public IndianFlag() {

```

```

        setTitle("Simple Temple Drawing");

```

```

        setSize(300, 300);

```

```

        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

```

```

        setLocationRelativeTo(null);

```

```

        FlagPanel flagPanel = new FlagPanel();

```

```

        add(flagPanel);

```

```

        setVisible(true);

```

```

    }

```

```

}

```

```

class FlagPanel extends JPanel {

```

@Override

```
protected void paintComponent(Graphics g) {
```

```
    super.paintComponent(g);
```

```
    drawFlag(g);
```

```
}
```

```
private void drawFlag(Graphics g) {
```

```
    g.setColor(Color.ORANGE);
```

```
    g.fillRect(50, 50, 200, 50);
```

```
    g.setColor(Color.WHITE);
```

```
    g.fillRect(50, 100, 200, 50);
```

```
    g.setColor(Color.GREEN);
```

```
    g.fillRect(50, 150, 200, 50);
```

```
}
```

```
}
```

```
public class slip30_1
```

```
{
```

```
    public static void main(String[] args) {
```

```
        SwingUtilities.invokeLater(() -> {
```

```
            new IndianFlag();
```

```
        });
```

```
}
```

```
}
```