1

**A) Write a java program to scroll the text from left to right and vice versa continuously.**

**Answer :**

import java.applet.Applet;

import java.awt.\*;

public class Slip1A extends Applet implements Runnable {

    int x, y, z;

    Thread t;

    public void init() {

        x = 50;

        y = 50;

        z = 1;

        t = new Thread(this);

        t.start();

    }

    public void mpostion() {

        x = x + 10 \* z;

        if (x > this.getWidth())

            z = -1;

        if (x < 0)

            z = 1;

    }

    public void run() {

        while (true) {

            repaint();

            mpostion();

            try {

                Thread.sleep(100);

            } catch (Exception e) {

            }

        }

    }

    public void paint(Graphics g) {

        g.drawString("SVPM", x, y);

    }

}

/\*

 \* <applet code="Slip1A.class" width="300" height="300">

 \* </applet>

 \*/

**B) Write a socket program in java for chatting application.(Use Swing)**

Answer :

//Server

import java.awt.\*;

import java.awt.event.\*;

import java.net.\*;

import java.io.\*;

public class Slip1B extends Frame implements ActionListener, Runnable {

    Button b1;

    TextField t1;

    TextArea ta;

    Thread t;

    BufferedReader br;

    PrintWriter pw;

    public Slip1B() {

        Frame f = new Frame("Server");

        f.setLayout(new FlowLayout());

        b1 = new Button("Send");

        b1.addActionListener(this);

        t1 = new TextField(15);

        ta = new TextArea(12, 20);

        f.add(t1);

        f.add(ta);

        f.add(b1);

        try {

            ServerSocket ss = new ServerSocket(2000);

            Socket s = ss.accept();

            System.out.println(s);

            br = new BufferedReader(new InputStreamReader(s.getInputStream()));

            pw = new PrintWriter(s.getOutputStream(), true);

        } catch (Exception e) {

        }

        t = new Thread(this);

        t.start();

        f.setSize(400, 400);

        f.setVisible(true);

    }

    public void actionPerformed(ActionEvent ae) {

        pw.println(t1.getText());

        t1.setText("");

    }

    public void run() {

        while (true) {

            try {

                String str = br.readLine();

                ta.append(str + "\n");

            } catch (Exception e) {

            }

        }

    }

    public static void main(String[] args) {

        Slip1B c = new Slip1B();

    }

}

//Client

import java.awt.\*;

import java.awt.event.\*;

import java.net.\*;

import java.io.\*;

public class Slip1B1 extends Frame implements ActionListener, Runnable {

    Button b1;

    TextField t1;

    TextArea ta;

    Thread t;

    Socket s;

    BufferedReader br;

    PrintWriter pw;

    public Slip1B1() {

        Frame f = new Frame("Client");

        f.setLayout(new FlowLayout());

        b1 = new Button("Send");

        b1.addActionListener(this);

        t1 = new TextField(15);

        ta = new TextArea(12, 20);

        f.add(t1);

        f.add(ta);

        f.add(b1);

        try {

           s = new Socket("localhost",2000);

            br = new BufferedReader(new InputStreamReader(s.getInputStream()));

            pw = new PrintWriter(s.getOutputStream(), true);

        } catch (Exception e) {

        }

        t = new Thread(this);

        t.start();

        f.setSize(400, 400);

        f.setVisible(true);

    }

    public void actionPerformed(ActionEvent ae) {

        pw.println(t1.getText());

        t1.setText("");

    }

    public void run() {

        while (true) {

            try {

                String str = br.readLine();

                ta.append(str + "\n");

            } catch (Exception e) {

            }

        }

    }

    public static void main(String[] args) {

        Slip1B1 c = new Slip1B1();

    }

}

2

A) Write a JSP program to check whether given number is Perfect or not. (Use Include

directive).

Answer :

Slip2A.html

<html>

<body>

<h1>Find Perfect Number</h1>

<form action="http://127.0.0.1:8080/java/Slip2A.jsp" method="GET">

Enter Number : <input type='text' name='no'>

<input type='submit' value='SUBMIT'>

</form>

</body>

</html>

Slip2A.jsp

<%@ page language="java" %>

<html>

<body>

<%

int n = Integer.parseInt(request.getParameter("no"));

int n1=0;

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

if(n%i==0){

n1+=i;

}

}

if(n1==n){

out.println("Perfect Number");

}else{

out.println("not Perfect Number");

}

%>

</body>

</html>

B) Write a java program in multithreading using applet for drawing flag.

Answer :

import java.awt.\*;

public class Slip2B extends Frame{

int f = 0;

public Slip2B(){

Signal s = new Signal();

s.start();

setSize(500,500);

setVisible(true);

}

public void paint (Graphics g){

switch (f){

case 0 :

g.drawLine(150, 50, 150, 300);

case 1 :

g.drawRect(150, 50, 100, 90);

}

}

class Signal extends Thread{

public void run(){

while(true){

f = (f+1)%2;

repaint();

try{

Thread.sleep(1000);

}catch(Exception e){

}

}

}}

public static void main(String args[]){

new Slip2B();

}

}

4

A) Write a Java Program to delete details of students whose initial character of their

name is ‘S’.

Answer :

import java.sql.\*;

class Slip4A {

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

        Connection con;

        Statement stmt;

        Class.forName("com.mysql.jdbc.Driver");

        con = DriverManager.getConnection("jdbc:mysql://localhost:3306/bcadb", "root", "");

        stmt = con.createStatement();

        int n = stmt.executeUpdate("delete from student where sname like 'S%'");

        System.out.println(n + " rows deleted..");

        con.close();

    }

}

B) Write a SERVLET program that provides information about a HTTP request from a

client, such as IP address and browser type. The servlet also provides information about

the server on which the servlet is running, such as the operating system type, and the

names of currently loaded servlets.

Answer :

import java.io.\*;

import javax.servlet.\*;

import javax.servlet.http.\*;

public class Slip4B extends HttpServlet implements Servlet {

    public void doGet(HttpServletRequest req, HttpServletResponse res) throws IOException, ServletException {

        res.setContentType("html/text");

        PrintWriter pw = res.getWriter();

        pw.println("<html><body><h1><b>INFORMATION OF SERVER</b></h1>");

        pw.println("<br>Server Name:" + req.getServerName());

        pw.println("<br>Server Port:" + req.getServerPort());

        pw.println("<br> Ip Address:" + req.getRemoteAddr());

        pw.println("<br> CLient Browser:" + req.getHeader("User-Agent"));

        pw.println("</body></html>");

        pw.close();

    }}

6

A) Write a java program to blink image on the Frame continuously.

Answer :

import java.awt.\*;

public class Slip6A extends Frame {

    int f = 0;

    public Slip6A() {

        Blink s = new Blink();

        s.start();

        setSize(500, 500);

        setVisible(true);

    }

    class Blink extends Thread {

        public void run() {

            while (true) {

                f = (f + 1) % 2;

                repaint();

                try {

                    Thread.sleep(500);

                } catch (Exception e) {

                }

            }

        }

    }

    public void paint(Graphics g) {

        Toolkit t = Toolkit.getDefaultToolkit();

        Image img = t.getImage("./car.png");

        switch (f) {

            case 0:

                g.drawImage(img, 150, 100, this);

        }

    }

    public static void main(String args[]) {

        new Slip6A();

    }

}

B) Write a SERVLET program which counts how many times a user has visited a web

 page. If user is visiting the page for the first time, display a welcome message. If the

 user is revisiting the page, display the number of times visited. (Use Cookie)

Answer :

import **java**.**io**.\*;

import **javax**.**servlet**.\*;

import **javax**.**servlet**.**http**.\*;

public class **VisitCounterServlet** extends **HttpServlet** {

    public void **doGet**(**HttpServletRequest** request, **HttpServletResponse** response)

            throws **ServletException**, **IOException** {

        int visits = 0;

**Cookie**[] cookies = request.**getCookies**();

        if (cookies != null) {

            for (**Cookie** cookie : cookies) {

                if (cookie.**getName**().**equals**("visitCount")) {

                    visits = **Integer**.**parseInt**(cookie.**getValue**());

                }

            }

        }

        visits++;

**Cookie** visitCookie = new **Cookie**("visitCount", **Integer**.**toString**(visits));

        response.**addCookie**(visitCookie);

        response.**setContentType**("text/html");

**PrintWriter** out = response.**getWriter**();

        if (visits == 1) {

            out.**println**("<html><head><title>Welcome</title></head><body>");

            out.**println**("<h2>Welcome to my website!</h2>");

            out.**println**("</body></html>");

        } else {

            out.**println**("<html><head><title>Visit Count</title></head><body>");

            out.**println**("<h2>You have visited this website " + visits + " times.</h2>");

            out.**println**("</body></html>");

        }

        out.**close**();

    }

}

12

Q.1. Advanced Java:

A) Write a java program to count the number of records in a table.

Answer :

import java.io.\*;

import java.sql.\*;

class Slip12A {

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

        Statement stmt;

        ResultSet rs;

        int cnt = 0;

        Class.forName("com.mysql.jdbc.Driver");

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

        stmt = con.createStatement();

        rs = stmt.executeQuery("select \* from student");

        while (rs.next()) {

            cnt++;

        }

        System.out.println("Total number of records in table is : " + cnt);

        con.close();

    }

}

B) Write a program in java which will 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.

Answer :

import **java**.**util**.**Random**;

public class **MyThread** extends **Thread** {

    private **String** threadName;

    public **MyThread**(**String** name) {

        threadName = name;

    }

    public void **run**() {

**Random** rand = new **Random**();

        int sleepTime = rand.**nextInt**(5000);

**System**.out.**println**(threadName + " sleeping for " + sleepTime + " ms.");

        try {

**Thread**.**sleep**(sleepTime);

        } catch (**InterruptedException** e) {

**System**.out.**println**(threadName + " interrupted.");

        }

**System**.out.**println**(threadName + " finished.");

    }

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

**MyThread** t = new **MyThread**("MyThread");

**System**.out.**println**(t.**getName**() + " created.");

        t.**start**();

        try {

            t.**join**();

        } catch (**InterruptedException** e) {

**System**.out.**println**("Main thread interrupted.");

        }

**System**.out.**println**(t.**getName**() + " dead.");

    }

}

13

A) Write a java program to display name of currently executing Thread in

multithreading.

Answer :

public class Slip13A {

    public static void main(String[] args) {

        Thread t = Thread.currentThread();

        System.out.println("Thread Name is : " + t.getName());

    }

}

B) Write a JSP program to display the details of College (CollegeID, Coll\_Name,

Address) in tabular form on browser.

Answer :

<%@page import="java.sql.\*"%>

<html>

<head>

<title>College Details</title>

</head>

<body>

<h1>College Details</h1>

<table border="1">

<tr>

<th>College ID</th>

<th>College Name</th>

<th>Address</th>

</tr>

<%

try {

*// Load the JDBC driver and establish a connection to the database*

    Class.**forName**("com.mysql.jdbc.Driver");

    Connection con = DriverManager.**getConnection**("jdbc:mysql://localhost:3306/mydb", "root", "password");

*// Execute a SELECT query to retrieve the college details*

    Statement stmt = con.**createStatement**();

    ResultSet rs = stmt.**executeQuery**("SELECT CollegeID, Coll\_Name, Address FROM College");

*// Loop through the result set and display the college details in the table*

    while (rs.**next**()) {

        %>

        <tr>

        <td><%= rs.**getString**("CollegeID") %></td>

        <td><%= rs.**getString**("Coll\_Name") %></td>

        <td><%= rs.**getString**("Address") %></td>

        </tr>

        <%

    }

*// Clean up resources*

    rs.**close**();

    stmt.**close**();

    con.**close**();

} catch (Exception e) {

    out.**println**("Error: " + e.**getMessage**());

}

%>

</table>

</body>

</html>

14

A) Write a JSP program to accept Name and Age of Voter and check whether he is

eligible for voting or not.

Answer :

<%@ page language="java" contentType="text/html; charset=UTF-8"

    pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Voter Eligibility Checker</title>

</head>

<body>

    <h1>Voter Eligibility Checker</h1>

    <form method="post" action="check\_voter.jsp">

        <label for="name">Name:</label>

        <input type="text" id="name" name="name"><br>

        <label for="age">Age:</label>

        <input type="number" id="age" name="age"><br>

        <input type="submit" value="Check Eligibility">

    </form>

    <%

    String name = request.**getParameter**("name");

    int age = Integer.**parseInt**(request.**getParameter**("age"));

    if(age >= 18) {

        out.**println**("<p>"+ name +", you are eligible to vote.</p>");

    } else {

        out.**println**("<p>"+ name +", you are not eligible to vote yet.</p>");

    }

    %>

</body>

</html>

Output :

B) Write a Java program to display given extension files from a specific directory on

 server machine.

Answer :

import **java**.**io**.**File**;

import **java**.**util**.**Scanner**;

public class **DisplayFilesWithExtension** {

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

**Scanner** scanner = new **Scanner**(**System**.in);

**System**.out.**print**("Enter the directory path: ");

**String** directoryPath = scanner.**nextLine**();

**System**.out.**print**("Enter the file extension (without dot): ");

**String** fileExtension = scanner.**nextLine**();

**File** directory = new **File**(directoryPath);

**File**[] files = directory.**listFiles**((dir, name) -> name.**endsWith**("." + fileExtension));

        if (files.length == 0) {

**System**.out.**println**("No files found with the given extension in the directory.");

        } else {

**System**.out.**println**("Files with ." + fileExtension + " extension in the directory:");

            for (**File** file : files) {

**System**.out.**println**(file.**getName**());

            }

        }

    }

}

21

A) Write a java program to display name and priority of a Thread.

Answer :

public class Slip21A {

    public static void main(String args[]) {

      Thread t = Thread.currentThread();

     t.setPriority(2);

     System.out.println("Thread Name : "+t.getName());

     System.out.println("Thread Prioriy : "+t.getPriority());

    }

}

B) Write a SERVLET program in java to accept details of student (SeatNo,

Stud\_Name, Class, Total\_Marks). Calculate percentage and grade obtained and display

details on page.

Answer :

import **java**.**io**.\*;

import **javax**.**servlet**.\*;

import **javax**.**servlet**.**http**.\*;

import **java**.**sql**.\*;

public class **StudentServlet** extends **HttpServlet** {

  public void **doGet**(**HttpServletRequest** request, **HttpServletResponse** response)

      throws **ServletException**, **IOException** {

    response.**setContentType**("text/html");

**PrintWriter** out = response.**getWriter**();

*// Retrieve student details from form*

**String** seatNo = request.**getParameter**("seatNo");

**String** studName = request.**getParameter**("studName");

**String** studentClass = request.**getParameter**("class");

    int totalMarks = **Integer**.**parseInt**(request.**getParameter**("totalMarks"));

*// Calculate percentage and grade*

    float percentage = (float) totalMarks / 5;

**String** grade;

    if (percentage >= 80) {

      grade = "A";

    } else if (percentage >= 60) {

      grade = "B";

    } else if (percentage >= 40) {

      grade = "C";

    } else {

      grade = "D";

    }

*// Display student details and grade*

    out.**println**("<html>");

    out.**println**("<head><title>Student Details</title></head>");

    out.**println**("<body>");

    out.**println**("<h1>Student Details</h1>");

    out.**println**("<p>Seat No: " + seatNo + "</p>");

    out.**println**("<p>Name: " + studName + "</p>");

    out.**println**("<p>Class: " + studentClass + "</p>");

    out.**println**("<p>Total Marks: " + totalMarks + "</p>");

    out.**println**("<p>Percentage: " + percentage + "</p>");

    out.**println**("<p>Grade: " + grade + "</p>");

    out.**println**("</body></html>");

  }

}

22

A) Write a java program to display Date and Time of Server machine on client machine.

Answer :

//client

import java.io.\*;

import java.net.\*;

import java.util.Date;

class Slip22A {

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

        Socket s = new Socket("localhost", 4545);

        DataInputStream dis = new DataInputStream(s.getInputStream());

        System.out.print("Current Date and Time : " + dis.readLine());

    }

}

//Server

import java.io.\*;

import java.net.\*;

import java.util.Date;

class Slip22A1 {

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

        ServerSocket ss = new ServerSocket(4545);

        Socket s = ss.accept();

        Date d = new Date();

        DataOutputStream dos = new DataOutputStream(s.getOutputStream());

        dos.writeBytes(d + "\n");

        s.close();

    }

}

B) Write a JSP program to accept the details of Account (ANo, Type, Bal) and store it

into database and display it in tabular form.

Answer :

<%@ page language="java" contentType="text/html; charset=UTF-8"

    pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Account Details</title>

</head>

<body>

    <h1>Account Details</h1>

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

        Account Number: <input type="text" name="accountNumber" /><br>

        Account Type: <input type="text" name="accountType" /><br>

        Balance: <input type="text" name="balance" /><br>

        <input type="submit" value="Add Account" />

    </form>

    <%-- Connect to database --%>

    <%

        String dbUrl = **getServletContext**().**getInitParameter**("db.url");

        String dbUsername = **getServletContext**().**getInitParameter**("db.username");

        String dbPassword = **getServletContext**().**getInitParameter**("db.password");

        Connection connection = null;

        try {

            Class.**forName**("com.mysql.jdbc.Driver");

            connection = DriverManager.**getConnection**(dbUrl, dbUsername, dbPassword);

        } catch (ClassNotFoundException | SQLException e) {

            out.**println**("Failed to connect to database.");

            e.**printStackTrace**();

            return;

        }

*// Add account to database*

        String accountNumber = request.**getParameter**("accountNumber");

        String accountType = request.**getParameter**("accountType");

        double balance = Double.**parseDouble**(request.**getParameter**("balance"));

        String sql = "INSERT INTO accounts (account\_number, account\_type, balance) VALUES (?, ?, ?)";

        PreparedStatement statement = connection.**prepareStatement**(sql);

        statement.**setString**(1, accountNumber);

        statement.**setString**(2, accountType);

        statement.**setDouble**(3, balance);

        int rowsInserted = statement.**executeUpdate**();

        statement.**close**();

        if (rowsInserted > 0) {

            out.**println**("Account added successfully.");

        } else {

            out.**println**("Failed to add account.");

        }

*// Display accounts from database*

        sql = "SELECT \* FROM accounts";

        Statement stmt = connection.**createStatement**();

        ResultSet rs = stmt.**executeQuery**(sql);

        out.**println**("<h2>Accounts</h2>");

        out.**println**("<table border='1'>");

        out.**println**("<tr><th>Account Number</th><th>Account Type</th><th>Balance</th></tr>");

        while (rs.**next**()) {

            String accNo = rs.**getString**("account\_number");

            String accType = rs.**getString**("account\_type");

            double accBal = rs.**getDouble**("balance");

            out.**println**("<tr><td>" + accNo + "</td><td>" + accType + "</td><td>" + accBal + "</td></tr>");

        }

        out.**println**("</table>");

        rs.**close**();

        stmt.**close**();

        connection.**close**();

    %>

</body>

</html>

29

A) Write a java program using multithreading for the following:

1. Display all the odd numbers between 1 to n.

2. Display all the prime numbers between 1 to n.

Answer :

import java.io.\*;

public class Slip29A {

    public static void main(String args[]) {

        try {

            DataInputStream br = new DataInputStream(System.in);

            System.out.println("\*\*\*\*\*\*\*\*\* java program using multithreading \*\*\*\*\*\*\*\*\*");

            System.out.print("Enter Number : ");

            int n = Integer.parseInt(br.readLine());

            OddNumber a1 = new OddNumber(n);

            a1.start();

            PrimeNumber a2 = new PrimeNumber(n);

            a2.start();

        } catch (Exception e) {}

    }

}

class OddNumber extends Thread {

    int odd;

    OddNumber(int n) {

        odd = n;

    }

    public void run() {

        System.out.println("\*\*\*\*\*\* Odd Numbers \*\*\*\*\*\*\*");

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

            if (i % 2 != 0) {

                System.out.print(i + " | ");

            }

        }

        System.out.println();

    }

}

class PrimeNumber extends Thread {

    int prime;

    PrimeNumber(int n){

        prime = n;

    }

    public void run() {

        System.out.println("\*\*\*\*\*\* Prime Numbers \*\*\*\*\*\*\*");

        for (int i = 2; i <= prime; i++) {

            boolean isPrime = true;

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

                if (i % j == 0) {

                    isPrime = false;

                    break;

                }

            }

            if (isPrime == true)

                System.out.print(i + " | ");

        }

    }

}

B) Write a SERVLET program to change inactive time interval of session.

Answer :

import **java**.**io**.\*;

import **javax**.**servlet**.\*;

import **javax**.**servlet**.**http**.\*;

public class **ChangeSessionTimeoutServlet** extends **HttpServlet** {

  public void **doGet**(**HttpServletRequest** request, **HttpServletResponse** response)

      throws **ServletException**, **IOException** {

*// Set content type*

    response.**setContentType**("text/html");

*// Get current session*

**HttpSession** session = request.**getSession**();

*// Get current timeout value*

    int currentTimeout = session.**getMaxInactiveInterval**();

*// Print current timeout value*

**PrintWriter** out = response.**getWriter**();

    out.**println**("<html><body>");

    out.**println**("<h3>Current Session Timeout: " + currentTimeout + " seconds</h3>");

*// Display form to change timeout value*

    out.**println**("<form method='post' action='" + request.**getContextPath**() + "/ChangeSessionTimeoutServlet'>");

    out.**println**("Enter new timeout value (in seconds): <input type='text' name='timeout'>");

    out.**println**("<input type='submit' value='Change'>");

    out.**println**("</form>");

    out.**println**("</body></html>");

  }

  public void **doPost**(**HttpServletRequest** request, **HttpServletResponse** response)

      throws **ServletException**, **IOException** {

*// Get new timeout value from form data*

    int newTimeout = **Integer**.**parseInt**(request.**getParameter**("timeout"));

*// Get current session*

**HttpSession** session = request.**getSession**();

*// Set new timeout value*

    session.**setMaxInactiveInterval**(newTimeout);

*// Redirect to doGet method to display updated timeout value*

    response.**sendRedirect**(request.**getContextPath**() + "/ChangeSessionTimeoutServlet");

  }

}