

Class : T.Y.BBA(CA) Sem – VI 2022-23
Subject : Advance Java
Slip Solution

Slip No. 1

Q.1. Advanced Java:

A) Write a java program to scroll the text from left to right and vice versa continuously. [15 M]

```
//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();
}
}

```

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

```

//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();
}
}

```

Slip No. 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();
}
}

```

Advanced Java:

Slip No. 3

A) Write a socket program in Java to check whether given number is prime or not. Display result on client terminal.

Answer :

//Client

```
import java.io.*;
```

```
import java.net.*;
```

```

public class Slip3A {
    public static void main(String args[]) throws Exception {
        Socket s = new Socket("localhost", 7500);
        DataInputStream din = new DataInputStream(System.in);
        System.out.print("Enter any number:");

        String n = din.readLine();
        System.out.println("=====");

        DataOutputStream dos = new DataOutputStream(s.getOutputStream());
        dos.writeBytes(n + "\n");

        DataInputStream dis = new DataInputStream(s.getInputStream());
        System.out.println(dis.readLine());

    }
}

```

//Server

```
import java.io.*;
```

```
import java.net.*;
```

```

public class Slip3A1 {
    public static void main(String args[]) throws Exception {
        ServerSocket ss = new ServerSocket(7500);
        Socket s = ss.accept();

        DataInputStream dis = new DataInputStream(s.getInputStream());
        int n = Integer.parseInt(dis.readLine());

        int i, cnt = 0;

        for (i = 2; i < n; i++) {

```

```

        if (n % i == 0)
            cnt++;
            break;
    }

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

    if (cnt == 0)
        dos.writeBytes(n + " is prime number.");
    else
        dos.writeBytes(n + " is not prime number.");

    s.close();

}
}

```

B) Write a java program using applet for bouncing ball, for each bounce color of ball should change randomly.

Answer :

```
import java.awt.*;
```

```
import java.awt.event.*;
```

```
public class Slip3B extends Frame implements Runnable {
```

```
    private int x, y, w, h, f;
```

```
    private Color c = Color.red;
```

```
    public Slip3B() {
```

```
        setTitle("Bouncing Boll");
```

```
        setSize(400, 400);
```

```
        setVisible(true);
```

```
        w = getWidth();
```

```
        h = getHeight();
```

```
        x = (int) (Math.random() * getWidth());
```

```
        y = (int) (Math.random() * getHeight());
```

```
        Thread t = new Thread(this);
```

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

```
    }
```

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

```
        while (true) {
```

```
            switch (f) {
```

```
                case 0:
```

```
                    y++;
```

```
                    if (y > h - 50) {
```

```
                        c = new Color((int) (Math.random() * 256), (int) (Math.random() * 256),
                            (int) (Math.random() * 256));
```

```
                        f = 1;
```

```
                    }
```

```
                    break;
```

```
                case 1:
```

```

        y--;
        if (y < 0) {
            c = new Color((int) (Math.random() * 256), (int) (Math.random() * 256),
                (int) (Math.random() * 256));
            f = 0;
        }
    }
    repaint();
    try {
        Thread.sleep(10);
    } catch (Exception e) {
    }
}
}

public void paint(Graphics g) {
    super.paint(g);
    g.setColor(c);
    g.fillOval(x, y, 20, 20);
}

public static void main(String args[]) {
    new Slip3B();
}
}

```

Advanced Java:

Slip No.4

A) Write a Java Program to delete details of students whose initial character of their name is 'S'.

```

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();
    }
}
```

Advanced Java:

Slip no.5

A) Write a JSP program to calculate sum of first and last digit of a given number. Display sum in Red Color with font size 18. [15 M]

Answer :

B) Write a java program in multithreading using applet for Traffic signal. [25 M]

```
import java.awt.*;
```

```
public class Slip5B extends Frame {
```

```
    int f = 0;
```

```
    public Slip5B() {
        Signal s = new Signal();
        s.start();
        setSize(500, 500);
        setVisible(true);
    }
```

```
    public void paint(Graphics g) {
        switch (f) {
```

```
            case 0:
                g.setColor(Color.red);
                g.fillOval(60, 60, 50, 50);
```

```

        g.setColor(Color.black);
        g.fillOval(60, 120, 50, 50);
        g.fillOval(60, 180, 50, 50);
        break;

    case 1:
        g.setColor(Color.yellow);
        g.fillOval(60, 120, 50, 50);
        g.setColor(Color.black);
        g.fillOval(60, 60, 50, 50);
        g.fillOval(60, 180, 50, 50);
        break;

    case 2:
        g.setColor(Color.green);
        g.fillOval(60, 180, 50, 50);
        g.setColor(Color.black);
        g.fillOval(60, 120, 50, 50);
        g.fillOval(60, 60, 50, 50);
        break;
    }
}

class Signal extends Thread {
    public void run() {
        while (true) {
            f = (f + 1) % 3;
            repaint();
            try {
                Thread.sleep(1000);
            } catch (Exception e) {
            }
        }
    }
}

public static void main(String args[]) {
    new Slip5B();
}
}

```

Slip no 6

Advanced Java:

A) Write a java program to blink image on the Frame continuously. [15 M]

```

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)

[25 M]

```
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();
  }
}

```

Advanced Java: Slip No 7

A) Write a JSP script to validate given E-Mail ID. [15 M]

```

<%@ page language="java" %>
<%
    String email = request.getParameter("email"); // retrieve email from form data
    String regex = "^[\\w-\\.]+@[\\w-]+\\.([\\w-]{2,4})$"; // regular expression for email
    validation

    if (email.matches(regex)) {
        out.println("Valid email address"); // if email matches the regex, print "Valid email
        address"
    } else {
        out.println("Invalid email address"); // if email does not match the regex, print "Invalid
        email address"
    }
}
%>

```

B) Write a Multithreading program in java to display the number's between 1 to 100 continuously in a TextField by clicking on button. (use Runnable Interface).

Answer :

```

import java.awt.event.*;
import javax.swing.*;

```

```

class alpha extends Thread {
    public void run() {
        System.out.println("***** java program using multithreading *****");
    }
}

```

```

public class Slip7B {
    public static void main(String[] args) {
        alpha a1 = new alpha();
        System.out.print(a1);
        JFrame f = new JFrame("Slip7B");
        final JTextField tf = new JTextField();
        tf.setBounds(50, 50, 150, 20);
        JButton b = new JButton("Display");
        b.setBounds(50, 100, 95, 30);
        b.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                for(int i=0; i<=100; i++){
                    tf.setText("Enter String"+ i);
                }
            }
        });
    }
}

```

```

        a1.start();
    }
});
f.add(b);
f.add(tf);
f.setSize(400, 400);
f.setLayout(null);
f.setVisible(true);
}
}

```

Advanced Java: Slip No. 8

A) Write a Java Program to display all the employee names whose initial character of a name is 'A'.

Answer :

```

import java.io.*;
import java.sql.*;

```

```

class Slip8A {
    public static void main(String args[]) throws Exception {

```

```

        Statement stmt;
        ResultSet rs;

```

```

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

```

```

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

```

```

        stmt = con.createStatement();
        rs = stmt.executeQuery("select ename from emp where ename like 'A%'");
        System.out.println("<<<<Employee Name>>>>");
        System.out.println("=====");

```

```

        while (rs.next()) {
            System.out.println(rs.getString(1));
        }
        con.close();
    }
}

```

B) Write a java program in multithreading using applet for Digital watch.

Answer :

```

import java.applet.*;
import java.awt.*;
import java.util.*;
import java.text.*;

```

```

public class Slip8B extends Applet implements Runnable {
    Thread t;
    String str;

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

    public void run() {
        try {
            while (true) {
                Date date = new Date();
                SimpleDateFormat Nowtime = new SimpleDateFormat("hh:mm:ss");
                str = Nowtime.format(date);
                repaint();
                t.sleep(1000);
            }
        } catch (Exception e) {
        }
    }

    public void paint(Graphics g) {
        g.drawString(str, 120, 100);
    }
}

/*
 * <applet code="Slip8B.class" width="300" height="300">
 * </applet>
 */

```

Advanced Java: Slip No. 9

A) Write a Java Program to create a Emp (ENo, EName, Sal) table and insert record into it. (Use PreparedStatement Interface)

Answer :

```

import java.sql.*;
import java.io.*;

```

```

class Slip9A {
    public static void main(String args[]) throws Exception {
        Connection con;
        PreparedStatement pstmt;
        int e1, s;
        String enm;

```

```

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

```

```

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

```

```

    pstmt = con.prepareStatement("create table employee1(eid int(8),ename
varchar(20),sal int(8))");

    pstmt.executeUpdate();

    System.out.println("Table Created Successfully!!!!!!");
    System.out.println("=====");

    DataInputStream din = new DataInputStream(System.in);

    System.out.println("Enter Employee Id, Name and Salary");

    e1 = Integer.parseInt(din.readLine());
    enm = din.readLine();
    s = Integer.parseInt(din.readLine());

    pstmt = con.prepareStatement("insert into employee1 values(?,?,?)");

    pstmt.setInt(1, e1);
    pstmt.setString(2, enm);
    pstmt.setInt(3, s);
    pstmt.executeUpdate();
    System.out.println("Record Inserted Successfully!!!!!!");

    con.close();

}
}

```

B) Write a JSP program to create an online shopping mall. User must be allowed to do purchase from two pages. Each page should have a page total. The third page should display a bill, which consists of a page total of whatever the purchase has been done and print the total. (Use Session)

Answer :

```

<%@ page import="java.util.*" %>
<%
    // Create a session object if one doesn't exist
    HttpSession session = request.getSession(true);

    // Get the cart object from the session
    Map<String, Integer> cart = (Map<String, Integer>)session.getAttribute("cart");
    if (cart == null) {
        cart = new HashMap<String, Integer>();
        session.setAttribute("cart", cart);
    }

    // Add items to the cart
    if (request.getParameter("item") != null) {
        String item = request.getParameter("item");
        int quantity = Integer.parseInt(request.getParameter("quantity"));
        if (cart.containsKey(item)) {

```

```

        quantity += cart.get(item);
    }
    cart.put(item, quantity);
}

// Calculate the page total
int pageTotal = 0;
for (Map.Entry<String, Integer> entry : cart.entrySet()) {
    String item = entry.getKey();
    int quantity = entry.getValue();
    int price = getPrice(item);
    pageTotal += price * quantity;
}

// Display the shopping cart
out.println("<h1>Shopping Cart</h1>");
out.println("<table>");
out.println("<tr><th>Item</th><th>Quantity</th><th>Price</th></tr>");
for (Map.Entry<String, Integer> entry : cart.entrySet()) {
    String item = entry.getKey();
    int quantity = entry.getValue();
    int price = getPrice(item);
    int total = price * quantity;

    out.println("<tr><td>" + item + "</td><td>" + quantity + "</td><td>" + total + "</td></tr>");
}
out.println("</table>");

// Display the page total
out.println("<h2>Page Total: " + pageTotal + "</h2>");

// Display the checkout button
out.println("<form action=\"checkout.jsp\"><input
type=\"submit\" value=\"Checkout\"></form>");
%>

```

Advanced Java: Slip No. 10

A) Write a java Program in Hibernate to display “Hello world” message.

Answer :

```

import org.hibernate.Session;
import org.hibernate.SessionFactory;
import org.hibernate.cfg.Configuration;

public class HelloWorld {

    public static void main(String[] args) {

        SessionFactory sessionFactory = new
        Configuration().configure().buildSessionFactory();
    }
}

```

```

    Session session = sessionFactory.openSession();

    System.out.println("Hello world");

    session.close();
    sessionFactory.close();
}
}

```

Output :

B) Write a SERVLET program to display the details of Product (ProdCode, PName, Price) on the browser in tabular format. (Use database)

Answer :

```

import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class ProductDetailsServlet extends HttpServlet {

    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {

        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/mydatabase", "root",
"password");
            Statement stmt = con.createStatement();
            ResultSet rs = stmt.executeQuery("SELECT * FROM Products");

            out.println("<html><head><title>Product Details</title></head><body><table
border='1'><tr><th>ProdCode</th><th>PName</th><th>Price</th></tr>");
            while (rs.next()) {
                String prodCode = rs.getString("ProdCode");
                String pName = rs.getString("PName");
                String price = rs.getString("Price");
                out.println("<tr><td>" + prodCode + "</td><td>" + pName + "</td><td>" + price
+ "</td></tr>");
            }
            out.println("</table></body></html>");
            con.close();
        } catch (Exception e) {
            out.println(e);
        }
    }
}

```

}