Core JAVA

Solved Slips

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SLIP 1

Q1. Write a ‘java’ program to display characters from ‘A’ to ‘Z’

Ans:

```
import java.io.*;
class Q1{
	public static void main(String[] args) {
		char ch;
		for (ch='A';ch<='Z';ch++) {
			System.out.println(ch);

		}
	}
}
```

SLIP-1

Q2. Write a ‘java’ program to copy only non-numeric data from one file to another file.

Ans:

```
import java.io.*;
class Q2{
	public static void main(String[] args) {
		try{
		FileReader reader=new FileReader("D:\\java slips/Slip1/test1.txt");
		FileWriter writer=new FileWriter("D:\\java slips/Slip1/test2.txt");
		int data=reader.read();
		while(data!=-1){
		String data2=String.valueOf((char)data);
		if(Character.isAlphabetic(data))
			writer.append(data2);
		else if(data2.equals(" "))
			writer.append(data2);
		data=reader.read();
	}
	System.out.println("File copied.");
	reader.close();
	writer.close();
	}
	catch(Exception e){
```

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

SLIP-2

Q.1 Write a java program to display all the vowels from a given string.

Ans:

```
import java.util.*;
class Q1 {
    public static void main(String[] para) {
        Scanner get = new Scanner(System.in);
        System.out.println("Enter String: ");
        String name = get.nextLine();
        for (int i = 0; i < name.length(); i++) {
            char ch = name.charAt(i);
            if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' ||
                ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U') {
                System.out.println(ch);
            }
        }
    }
}
```

SLIP-2

Q2. Design a screen in Java to handle the Mouse Events such as MOUSE_MOVED and MOUSE_CLICK and display the position of the Mouse_Click in a TextField.

Ans:

SLIP-3

Q1. Write a ‘java’ program to check whether given number is Armstrong or not. (Use static keyword).

Ans:

```
import java.util.*;
class Q1{
static int num;
	public static void main(String[] args) {
		Scanner get=new Scanner(System.in);
		System.out.println("Enter number: ");
		num=get.nextInt();
		int og,rem,n=0;
		double res=0;
		og=num;
		while(og!=0){
			og=og/10;
			n++;
		}
		og=num;
		while(og!=0){
			rem=og%10;
			res=res+Math.pow(rem,n);
			og=og/10;
		}
```

```
            if(res==num)
                System.out.println("Number is Armstrong.");
            else
                System.out.println("Number is not Armstrong.");
        }
}
```

SLIP-3

Q2. Define an abstract class Shape with abstract methods area () and volume (). Derive abstract class Shape into two classes Cone and Cylinder. Write a java Program to calculate area and volume of Cone and Cylinder.(Use Super Keyword.)

Ans:

```
import java.util.*;
abstract class Shape{
        abstract void area();
        abstract void volume();
        Scanner get=new Scanner(System.in);
        double pi=3.14;
}
class cone extends Shape{
        void area(){
                System.out.println("radius: ");
                int r=get.nextInt();
                System.out.println("height: ");
                int l=get.nextInt();
                System.out.println("Area of cone: "+(super.pi*r*(r*l)));
        }
        void volume(){
        System.out.println("radius: ");
                int r=get.nextInt();
                System.out.println("height: ");
```

```
            int l=get.nextInt();
            System.out.println("Volume of cone: "+(super.pi*r*r*l)/3);
        }
}
class cylinder extends Shape{
        void area(){
            System.out.println("radius: ");
            int r=get.nextInt();
            System.out.println("height: ");
            int h=get.nextInt();
            System.out.println("Area of cylinder: "+(2*super.pi*r*(r*h)));
        }
        void volume(){
        System.out.println("radius: ");
            int r=get.nextInt();
            System.out.println("height: ");
            int h=get.nextInt();
            System.out.println("Volume of cylinder: "+(super.pi*r*r*h));
        }
}
class Q2{
        public static void main(String[] args) {
        cone c=new cone();
        c.area();
        c.volume();
```

```
        cylinder cyl=new cylinder();
        cyl.area();
        cyl.volume();
}
}
```

SLIP-4

Q1. Write a java program to display alternate character from a given string.

Ans:

```
class Q1{
	public static void main(String[] args) {
	String name=args[0];
	System.out.println("Alternate characters: ");
	for(int i=0;i<name.length();i++){
		if(i%2==0){
			System.out.print(name.charAt(i)+" ");
		}
	}
	}
}
```

SLIP-4

Q2. Write a java program using Applet to implement a simple arithmetic calculator.

SLIP-5

Q1. Write a java program to display following pattern: 5 4 5 3 4 5 2 3 4 5 1 2 3 4 5

Ans:

```
class Q1{
	public static void main(String[] args) {
		for(int i=5;i>=1;i--){
			for(int j=i;j<=5;j++){
				System.out.print(j+" ");
			}
			System.out.println();
		}
	}
}
```

SLIP-5

Q2. Write a java program to accept list of file names through command line. Delete the files having extension .txt. Display name, location and size of remaining files.

Ans:

```
import java.io.*;
class Q2{
	public static void main(String[] args) {
		try{
			for(String fname:args){
			File file=new File(fname);
			if(file.exists() && file.isFile()){
				if(file.getName().endsWith(".txt")){
				if(file.delete()){
				System.out.println("File has deleted"+file.getName());
				}
				else{
				System.out.println("File not deleted."+file.getName());
				}
				}else{
			System.out.println("Remaining files list: "+file.getName());
			System.out.println("File Location: "+file.getAbsolutePath());
			System.out.println("File Size: "+file.length());
				}
```

```
                    }else{
                        System.out.println("Invalid file name");
                    }
                }
            }
            catch(Exception e){
                System.out.println(e);
            }
        }
}
```

SLIP-6

Q1. Write a java program to accept a number from user, if it zero then throw user defined Exception “Number Is Zero”, otherwise calculate the sum of first and last digit of that number. (Use static keyword).

Ans:

```
import java.io.*;
import java.util.*;
class MyException extends Exception{
	MyException(String msg){
		super(msg);
	}
}
class Q1{
	static int num;
	public static void main(String[] args) {
		try{
			Scanner get=new Scanner(System.in);
			System.out.println("Enter a number: ");
			num=get.nextInt();
			if(num==0)
				throw new MyException("Number is Zero.");
			else{
				String number=String.valueOf(num);
				char fd=number.charAt(0);
```

```
                    char ld=number.charAt(number.length()-1);
                    int fdigit=Character.getNumericValue(fd);
                    int ldigit=Character.getNumericValue(ld);
                    System.out.println("Sum of first and last digit of a given
number is: "+(fdigit+ldigit));
                }
            }
            catch(Exception e){
                System.out.println(e);
            }
        }
}
```

SLIP-6

Q2. Write a java program to display transpose of a given matrix.

Ans:

```
class Q2{
	public static void main(String[] args) {
		int mat[][]={{1,2,3},{3,2,1}};
		int m=mat.length;
		int n=mat[0].length;
		for(int row[]: mat){
			for(int ele: row){
				System.out.print(ele+" ");
			}
			System.out.println();
		}
		int tmat[][]=new int[n][m];
		for(int i=0;i<m;i++){
			for(int j=0;j<n;j++){
				tmat[j][i]=mat[i][j];
			}
		}
		System.out.println("Tranpose of matrix: ");
		for(int i=0;i<n;i++){
			for(int j=0;j<m;j++){
				System.out.print(tmat[i][j]+" ");
```

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

SLIP-7

Q1. Write a java program to display Label with text “Dr. D Y Patil College”, background color Red and font size 20 on the frame.

Ans:

```
import javax.swing.*;
import java.awt.*;
class Q1 extends JFrame{
	Q1(){
		JLabel lbl=new JLabel("Dr. D Y Patil College");
		lbl.setFont(new Font("Arial",Font.PLAIN,20));
		lbl.setForeground(Color.WHITE);
		lbl.setBounds(550,200,300,50);
		this.add(lbl);
		getContentPane().setBackground(Color.RED);
	}
	void config(){
		this.setLayout(null);
		this.setExtendedState(this.MAXIMIZED_BOTH);
		this.setVisible(true);
		setDefaultCloseOperation(this.EXIT_ON_CLOSE);
	}
	public static void main(String[] args) {
		Q1 ob=new Q1();
		ob.config();
```

```
        }
    }
```

SLIP-7

Q2. Write a java program to accept details of ‘n’ cricket player (pid, pname, totalRuns, InningsPlayed, NotOuttimes). Calculate the average of all the players. Display the details of player having maximum average. (Use Array of Object)

Ans:

```
import java.util.*;
class Q2{
    int pid;
    String PName;
    int TotalRuns;
    int InningsPlayed;
    int NotOutTimes;
    Q2(int id,String name, int runs, int innings, int not){
        this.pid=id;
        this.PName=name;
        this.TotalRuns=runs;
        this.InningsPlayed=innings;
        this.NotOutTimes=not;
    }
    void disp(){
        System.out.println("Player id: "+pid);
        System.out.println("Player name: "+PName);
        System.out.println("Player total runs: "+TotalRuns);
        System.out.println("Player innings played: "+InningsPlayed);
```

```
        System.out.println("Player not out times: "+NotOutTimes);
    }
    public static void main(String[] args) {
        Scanner get=new Scanner(System.in);
        System.out.println("Enter how many players: ");
        int n=get.nextInt();
        Q2 ob[]=new Q2[n];
        for(int i=0;i<n;i++){
            System.out.println();
            System.out.println("Enter pid: ");
            int para1=get.nextInt();
            System.out.println("Enter pname: ");
            String para2=get.next();
            get.nextLine();
            System.out.println("Enter runs: ");
            int para3=get.nextInt();
            System.out.println("Enter InningsPlayed: ");
            int para4=get.nextInt();
            System.out.println("Enter NotOutTimes: ");
            int para5=get.nextInt();
            ob[i]=new Q2(para1,para2,para3,para4,para5);
        }
        double maxavg = Double.MIN_VALUE;
    int max = -1;
        double avgRuns = 0;
```

```
        for (int i = 0; i < n; i++) {
            avgRuns += ob[i].TotalRuns/ob[i].InningsPlayed;
            System.out.println("Average for player "+ob[i].PName+": " + avgRuns);
            if (avgRuns > maxavg) {
                maxavg = avgRuns;
                max = i;
            }
        }
        if (max != -1) {
            System.out.println("Player with the maximum average runs:");
            ob[max].disp();
        } else {
            System.out.println("No players entered.");
        }


        }
}
```

SLIP-8

Q1. Define an Interface Shape with abstract method area(). Write a java program to calculate an area of Circle and Sphere.(use final keyword)

Ans:

```
import java.util.*;
interface Shape{
	abstract void area();
	final double pi=3.14;
	Scanner get=new Scanner(System.in);
}
class circle implements Shape{
	public void area(){
		System.out.println("Enter Radius for circle: ");
		int r=get.nextInt();
		System.out.println("Area of circle: "+(pi*r*r));
	}
}
class sphere implements Shape{
	public void area(){
		System.out.println("Enter Radius for sphere: ");
		int r=get.nextInt();
		System.out.println("Area of sphere: "+(4*pi*r*r));
	}
}
```

```
class Q1{
	public static void main(String[] args) {
		circle ob=new circle();
		sphere obj=new sphere();
		ob.area();
		obj.area();
	}
}
```

SLIP-8

Q2. Write a java program to display the files having extension .txt from a given directory

Ans:

```
import java.io.*;
class Q2{
	public static void main(String[] args) {
		String url="D:\\java slips/";
		File fi=new File(url);
		if(fi.isDirectory()){
			File files[]=fi.listFiles();
			if(files!=null){
				System.out.println("Files Name with .txt extension: ");
				for(File f:files){
					if(f.isFile() && f.getName().endsWith(".txt")){
						System.out.println(f.getName());
					}
				}
			}
		}
		else{
			System.out.println("File not exists");
		}
	}
```

```
}
```

SLIP-9

Q1. Write a java Program to display following pattern: 1 0 1 0 1 0 1 0 1 0

Ans:

```
class Q1{
	public static void main(String[] args) {
	int x=1,y=0,z=0;
		for(int i=1;i<=4;i++){
			for(int j=1;j<=i;j++){
				System.out.print(x+" ");
				z=x;
				x=y;
				y=z;
			}
			System.out.println();
		}
}
}
```

SLIP-9

Q2. Write a java program to validate PAN number and Mobile Number. If it is invalid then throw user defined Exception “Invalid Data”, otherwise display it.

Ans:

```
import java.io.*;
import java.util.*;
class InvalidPAN extends Exception{
	InvalidPAN(String msg){
		super(msg);
	}
}
class Q2{
	public static void main(String[] args) {
		try{
			String PAN=args[0];
			String mno=args[1];
			int PANlen=PAN.length();
			boolean isPAN=PANlen==10;
			boolean alphanumeric=PAN.matches("[A-Z0-9]+");
			int mobileno=mno.length();
	    boolean ismno=mobileno==10;
			boolean digit=mno.matches("[0-9]+");
				if(alphanumeric && isPAN && ismno && digit){
					System.out.println("PAN No: "+PAN);
```

```
                        System.out.println("Mobile No: "+mno);
                    }
                    else{
                        throw new InvalidPAN(": Invalid Data");
                    }
            }
            catch(ArrayIndexOutOfBoundsException e1){
                System.out.println("Warning: Please enter 10 PAN No and
Mobile No respectively..!");
            }
            catch(Exception e){
                System.out.println(e);
            }
        }
}
```

SLIP-10

Q1. Write a java program to count the frequency of each character in a given string.

Ans:

```
class Q1{
	public static void main(String[] args) {
		String str="I am Ganesh";
		int[] freq=new int[128];
		for(char ch:str.toCharArray()){
			freq[ch]++;
		}
		System.out.println("characters and thier frequencies: ");
		for(int i=0;i<freq.length;i++){
			if(freq[i]>0){
				System.out.println((char)i+": "+freq[i]);
			}
		}
	}

}
```

SLIP-10

Q2. Write a java program for the following:

Ans:

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

class Q2 extends JFrame {
    Q2() {
        Font font = new Font("Arial", Font.BOLD, 25);
        this.setExtendedState(JFrame.MAXIMIZED_BOTH);
        this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        this.setVisible(true);
        this.setLayout(null);
        JLabel lbl = new JLabel("Compound Interest Calculator");
        lbl.setBounds(500, 30, 400, 100);
        lbl.setFont(font);
        JLabel lbl2 = new JLabel("Principal Amount ");
        lbl2.setBounds(200, 150, 200, 50);
        lbl2.setFont(new Font("Arial", Font.BOLD, 15));
        JTextField tb1 = new JTextField();
        tb1.setBounds(400, 150, 780, 50);
        JLabel lbl3=new JLabel("Intrest Rate (%)");
        lbl3.setBounds(200, 250, 200, 50);
        lbl3.setFont(new Font("Arial",Font.BOLD,15));
```

```
JTextField tb2=new JTextField();
tb2.setBounds(400, 250, 300, 50);
JLabel lbl4=new JLabel("Time (Yrs)");
lbl4.setBounds(750,250,200,50);
JTextField tb3=new JTextField();
tb3.setBounds(850, 250, 330, 50);
JLabel lbl5=new JLabel("Total Amount");
lbl5.setBounds(200,350,200,50);
lbl5.setFont(new Font("Arial",Font.BOLD,15));
JTextField tb4=new JTextField();
tb4.setBounds(400,350,330,50);
JLabel lbl6=new JLabel("Intrest Amount");
lbl6.setBounds(200,450,200,50);
lbl6.setFont(new Font("Arial",Font.BOLD,15));
JTextField tb5=new JTextField();
tb5.setBounds(400,450,400,50);
JButton calculate=new JButton("Calculate");
calculate.setBounds(200,550,250,50);
JButton clear=new JButton("Clear");
clear.setBounds(500,550,250,50);
JButton close=new JButton("Close");
close.setBounds(800,550,250,50);
this.add(lbl);
this.add(lbl2);
this.add(tb1);
```

```
        this.add(lbl3);
        this.add(tb2);
        this.add(lbl4);
        this.add(tb3);
        this.add(lbl5);
        this.add(tb4);
        this.add(lbl6);
        this.add(tb5);
        this.add(calculate);
        this.add(clear);
        this.add(close);
    }
    public static void main(String[] args) {
        new Q2();
    }
}
```

SLIP-11

Q1. Write a menu driven java program using command line arguments for the following:

1. Addition 2. Subtraction 3. Multiplication 4. Division.

Ans:

```
class Q1{
	public static void main(String[] para) {
		int n1=Integer.parseInt(para[0]);
		int n2=Integer.parseInt(para[1]);
		int ch=Integer.parseInt(para[2]);
		System.out.println("*******Operations list*******");
		System.out.println("1. Addition\n2. Subtraction\n3. Multiplication\n4. Division");
		System.out.println("\nResult: ");
		switch(ch){
		case 1:
		System.out.println("Addition of "+n1+" and "+n2+" is :"+(n1+n2));
			break;
		case 2:
		System.out.println("Subtraction of "+n1+" and "+n2+" is :"+(n1-n2));
			break;
		case 3:
		System.out.println("Multiplication of "+n1+" and "+n2+" is :"+(n1*n2));
			break;
```

```
            case 4:
            if(n1!=0 && n2!=0)
            System.out.println("Division of "+n1+" and "+n2+" is :"+(n1/n2));
            else
            System.out.println("both numbers should be greater than zero");
               break;
            default:
                  System.out.println("Invalid choice entered..!");
            }
      }
}
```

SLIP-11

Q2. Write an applet application to display Table lamp. The color of lamp should get change randomly.

Ans:

SLIP-12

Q1. Write a java program to display each String in reverse order from a String array.

Ans:

```
class Q1 {
    public static void main(String[] args) {
        String arr[] = {"Ganesh", "Prashant", "Sarthak"};

        for (String items : arr) {
            String reverse = new StringBuilder(items).reverse().toString();
            System.out.println(reverse);
        }
    }
}
```

SLIP-12

Q2. Write a java program to display multiplication table of a given number into the List box by clicking on button.

Ans:

```
import java.awt.*;
import java.awt.event.*;
class Q2 extends Frame implements ActionListener{
    Label l1;
    TextField tb1;
    List lbox;
    Button btn;
    Q2(){
        l1=new Label("Enter Number: ");
        tb1=new TextField();
        lbox=new List();
        btn=new Button("Generate");
        btn.addActionListener(this);
    }
    void configs(){
        setLayout(null);
        setSize(500,500);
        setVisible(true);
        setTitle("Multiplication Table");
        addWindowListener(new WindowAdapter(){
```

```
                public void windowClosing(WindowEvent e){
                        System.exit(0);
                }
        });
        l1.setBounds(50,100,100,50);
        tb1.setBounds(150,100,100,50);
        lbox.setBounds(50,200,200,150);
        btn.setBounds(50,370,200,50);
        add(l1);
        add(tb1);
        add(btn);
        add(lbox);
    }
    public void actionPerformed(ActionEvent e){
        int num=Integer.parseInt(tb1.getText());
        for(int i=1;i<=10;i++){
            int res=num*i;
            lbox.add(String.valueOf(res));
        }
    }
    public static void main(String[] args) {
        Q2 obj=new Q2();
        obj.configs();
    }
}
```

SLIP-13

Q1. Write a java program to accept ‘n’ integers from the user & store them in an ArrayList collection. Display the elements of ArrayList collection in reverse order.

Ans:

```
import java.util.*;
class Q1{
	public static void main(String[] args) {
		ArrayList<Integer> al=new ArrayList<Integer>();
		Scanner get=new Scanner(System.in);
		System.out.println("Enter how many Elements: ");
		int n=get.nextInt();
		for(int i=0;i<n;i++){
			System.out.println("Enter "+(i+1)+" Element: ");
			int list=get.nextInt();
			al.add(list);
		}
		Collections.reverse(al);
		System.out.println("Elements list in reverse order: ");
		for(int list:al){
			System.out.println(list);
		}
	}
}
```

SLIP-13

Q2. Write a java program that asks the user name, and then greets the user by name. Before outputting the user's name, convert it to upper case letters. For example, if the user's name is Raj, then the program should respond "Hello, RAJ, nice to meet you!".

Ans:

```
import javax.swing.*;
import java.awt.event.*;
import java.awt.*;
class Q2 extends JFrame implements ActionListener{
    JFrame jf;
    JTextField tb1;
    JLabel lbl1,lbl2;
    JButton btn;
    //JPanel p;
    Q2(){
        jf=new JFrame();
        tb1=new JTextField();
        lbl1=new JLabel("Name: ");
        lbl2=new JLabel("Result: ");
        btn=new JButton("Submit");
        //p=new JPanel();
        btn.addActionListener(this);
    }
    void display(){
```

```
    jf.setLayout(null);
        jf.setSize(500,500);
        jf.setVisible(true);
        jf.setDefaultCloseOperation(jf.EXIT_ON_CLOSE);
        lbl1.setBounds(50,50,200,50);
        tb1.setBounds(50,100,200,50);
        lbl2.setBounds(50,250,240,50);
        btn.setBounds(50,150,200,50);
        //p.setBackground(Color.CYAN);
//p.setBounds(0, 0, 500, 500);
//p.setLayout(null);
//jf.add(p);
        jf.add(tb1);
        jf.add(lbl1);
        jf.add(lbl2);
        jf.add(btn);
}
public void actionPerformed(ActionEvent e){
        String res=tb1.getText();
        String res2=res.toUpperCase();
        lbl2.setText("Result: Hello "+res2+", nice to meet you..!");
}
public static void main(String[] args) {
        Q2 obj=new Q2();
        obj.display();  } }
```

SLIP-14

Q1. Write a Java program to calculate power of a number using recursion.

Ans:

```
import java.util.*;
class Q1{
	public static int power(int b,int e){
		if(e==0){
			return 1;
		}
		else{
			return b*power(b,e-1);
		}
	}
	public static void main(String[] args) {
		Scanner get=new Scanner(System.in);
		System.out.println("Enter Base: ");
		int b=get.nextInt();
		System.out.println("Enter Exponent: ");
		int e=get.nextInt();
		int res=power(b,e);
		System.out.println("Power of given number is: "+res);
	}
}
```

SLIP-14

Q2. Write a java program to accept the details of employee (Eno, EName, Sal) and display it on next frame using appropriate event .

Ans:

```
import javax.swing.*;
import java.awt.event.*;
public class Q2 extends JFrame implements ActionListener{
        int Eno;
        String Ename;
        int Sal;
        JLabel l,l1,l2,l3;
        JFrame jf1,jf2;
        JTextField tb1,tb2,tb3;
        JButton btn1, btn2;
    Q2(){
        jf1=new JFrame();
                jf2=new JFrame();
                l=new JLabel("Employee Details: ");
                l1=new JLabel("Employee No: ");
                tb1=new JTextField();
                l2=new JLabel("Employee Name: ");
                tb2=new JTextField();
                l3=new JLabel("Employee Sal: ");
                tb3=new JTextField();
```

```
        jf1.setLayout(null);
        jf1.setSize(800,800);
        jf1.setVisible(true);
        jf2.setVisible(false);
        l1.setBounds(50,50,80,40);
        tb1.setBounds(150,50,80,40);
        l2.setBounds(50,100,80,40);
        tb2.setBounds(150,100,80,40);
        l3.setBounds(50,150,80,40);
        tb3.setBounds(150,150,80,40);
        btn1=new JButton("Submit");
        btn1.setBounds(50,200,200,40);
        btn1.addActionListener(this);
        btn2=new JButton("Back");
        btn2.addActionListener(this);
        jf1.add(l1);
        jf1.add(tb1);
        jf1.add(l2);
        jf1.add(tb2);
        jf1.add(l3);
        jf1.add(tb3);
        jf1.add(btn1);
        jf1.setDefaultCloseOperation(jf1.EXIT_ON_CLOSE);
    }
    public void actionPerformed(ActionEvent e){
```

```
        jf1.setVisible(false);
        jf2.setVisible(true);
        jf2.setDefaultCloseOperation(jf2.EXIT_ON_CLOSE);
    jf2.setLayout(null);
        jf2.setSize(500,500);
        l1.setBounds(50,50,200,40);
        l2.setBounds(50,150,200,40);
        l3.setBounds(50,200,200,40);
        btn2.setBounds(50,250,200,40);
        jf2.add(l1);
        jf2.add(l2);
        jf2.add(l3);
        jf2.add(btn2);
        l1.setText("Employee No: "+tb1.getText());
        l2.setText("Employee Name: "+tb2.getText());
        l3.setText("Employee Salary: "+tb3.getText());
        if(e.getSource()==btn2){
                jf2.setVisible(false);
                jf1.setVisible(true);
                jf1.setLayout(null);
        }
    }
    public static void main(String[] args) {
        Q2 obj=new Q2();
    }   }
```

SLIP-15

Q1. Write a java program to search given name into the array, if it is found then display its index otherwise display appropriate message.

Ans:

```
import java.util.*;
class Q1{
	public static void main(String[] args) {
		String array[]={"Ganesh","Prashant","Sarthak"};
		int index=-1;
		Scanner get=new Scanner(System.in);
		System.out.println("Enter name to search: ");
		String name=get.next();
		for(int i=0;i<array.length;i++){
			if(array[i].equalsIgnoreCase(name)){
				index=i;
				break;
			}
		}
		if(index==-1)
		System.out.println("Name not found");
		else
		System.out.println("Name found at index :"+index);
	}
}
```

SLIP-15

Q2. Write an applet application to display smiley face.

Ans:

SLIP-16

Q1. Write a java program to calculate sum of digits of a given number using recursion.

Ans:

```
import java.util.*;
class Q1{
	public static int sod(int n){
		if(n<10)
			return n;
		int ld=n%10;
		int sum=n/10;
		return ld+sod(sum);
	}
	public static void main(String[] args) {
		Scanner get=new Scanner(System.in);
		System.out.println("Enter a number: ");
		int num=get.nextInt();
		int sum=sod(num);
		System.out.println("Sum of digit of a given number is: "+sum);
	}
}
```

SLIP-16

Q2. Write a java program to accept n employee names from user. Sort them in ascending order and Display them.(Use array of object and Static keyword)

Ans:

```
import java.util.*;
class Q2 implements Comparable<Q2>{
    static String msg="Employee names in ascending order: ";
    String ename;
    Q2(String name){
        this.ename=name;
    }
    void display(){
        System.out.println(ename);
    }
    public int compareTo(Q2 other) {
    return this.ename.compareTo(other.ename);
  }
    public static void main(String[] args) {
        Scanner get=new Scanner(System.in);
        System.out.println("Enter how many employees: ");
        int n=get.nextInt();
        Q2 obj[]=new Q2[n];
        for(int i=0;i<n;i++){
            System.out.println("Enter employee name "+i+" :");
```

```
            String nm=get.next();
            obj[i]=new Q2(nm);
        }
        System.out.println(Q2.msg);
        Arrays.sort(obj);
        for(int i=0;i<n;i++){
            obj[i].display();
        }
    }
}
```

SLIP-17

Q1. Write a java Program to accept ‘n’ no’s through command line and store only armstrong no’s into the array and display that array

Ans:

```
import java.util.*;
class Q1{
    public static boolean isArmstrong(int num) {
        int originalNum=num;
        double res=0;
        int n=String.valueOf(num).length();
        while(num != 0) {
            int digit=num % 10;
            res=res+Math.pow(digit, n);
            num=num/10;
        }
        return res == originalNum;
    }

    public static void main(String[] args) {
        if(args.length == 0) {

System.out.println("Enter numbers..!");
            return;
```

```
    }
    ArrayList<Integer> al = new ArrayList<>();
    for(String arg : args) {
        try {
            int num = Integer.parseInt(arg);
            boolean len=arg.length()==1;
            if(len){

            }
            else if (isArmstrong(num)) {
                al.add(num);
            }
        }catch(NumberFormatException e) {
            System.out.println(e);
        }
    }

        System.out.println("Armstrong numbers in the array:");
        for(int i : al) {
            System.out.println(i);
        }
    }
}
```

SLIP-17

Q2. Define a class Product (pid, pname, price, qty). Write a function to accept the product details, display it and calculate total amount. (use array of Objects)

Ans:

```
import java.util.*;
public class Q2{
	int pid;
	String pname;
	public int price;
	int qty;
	public int total=0;
	Q2(int id, String name, int prc, int qty){
		this.pid=id;
		this.pname=name;
		this.price=prc;
		this.qty=qty;
	}
	void display(){
		total=qty*price;
		//System.out.println("Product Details:");
		System.out.println(pid+" "+pname+" "+price+" "+qty);
	}
	public static void main(String[] args) {
```

```
Scanner get=new Scanner(System.in);
System.out.println("Enter how many products: ");
int n=get.nextInt();
Q2 obj[]=new Q2[n];
for(int i=0;i<n;i++){
        System.out.println("Enter pid: ");
    int id=get.nextInt();
    System.out.println("Enter pname");
    String pname=get.next();
    System.out.println("Enter price: ");
    int price=get.nextInt();
    System.out.println("Enter quantity: ");
    int qty=get.nextInt();
        obj[i]=new Q2(id,pname,price,qty);
}
System.out.println("Details of Products: ");
for(int j=0;j<n;j++){
        obj[j].display();
}
System.out.println("sum of product prices: ");
int totall=0;
for(int i=0;i<n;i++){
        totall=obj[i].total+totall;
}
System.out.println("Total :"+totall); } }
```

SLIP-18

Q1. Write a Java program to calculate area of Circle, Triangle & Rectangle.(Use Method Overloading)

Ans:

```
import java.util.*;
class Q1{
	private float pi=3.14f;
	void area(int r){
		Float area=pi*r*r;
		System.out.println("Area of Circle: "+area);
	}
	void area(int b,int h){
		double area=0.5*b*h;
		System.out.println("Area of Triangle: "+area);
	}
	void area(Float l,Float w){
		Float area=l*w;
		System.out.println("Area of Rectangle: "+area);
	}
	public static void main(String[] args) {
		Q1 obj=new Q1();
		Scanner get=new Scanner(System.in);
		System.out.println("Enter Radius: ");
		int r=get.nextInt();
```

```
            System.out.println("Enter Base: ");
            int b=get.nextInt();
            System.out.println("Enter Height: ");
            int h=get.nextInt();
            System.out.println("Enter Length: ");
            Float l=get.nextFloat();
            System.out.println("Enter Width: ");
            Float w=get.nextFloat();
            obj.area(r);
            obj.area(b,h);
            obj.area(l,w);
        }
}
```

SLIP-18

Q2. Write a java program to copy the data from one file into another file, while copying change the case of characters in target file and replaces all digits by '*' symbol.

Ans:

```
import java.io.*;


class Q2 {
    public static void main(String[] args) {
        try {
        FileReader reader = new FileReader("D:/java slips/slip18/text1.txt");
            FileWriter writer = new FileWriter("D:/java slips/slip18/text2.txt");


            int data = reader.read();
            while (data != -1) {
                char data2 = (char) data;
                if (Character.isDigit(data2)) {
                    writer.append("*");
                }else if (Character.isWhitespace(data2)) {
                    writer.append(" ");
                }else if (Character.isLowerCase(data2)) {
                    writer.append(Character.toUpperCase(data2) + "");
                } else if (Character.isUpperCase(data2)) {
                    writer.append(Character.toLowerCase(data2) + "");
```

```
            }
            data = reader.read();
        }
        reader.close();
        writer.close();
    } catch (Exception e) {
        System.out.println(e);
    }
  }
}
```

SLIP-19

Q1. Write a Java program to display Fibonacci series using function.

Ans:

```
import java.util.*;
class Q1{
	public static void fibonacci(int n){
		System.out.println("Fibbonacci Series upto "+n+": ");
		int fn=1;
		int sn=1;
		System.out.println(0);
		System.out.println(fn);
		System.out.println(sn);
		for(int i=2;i<=n;i++){
			int res=fn+sn;
			System.out.println(res);
			fn=sn;
			sn=res;
		}

	}
	public static void main(String[] args) {
		fibonacci(10);
	}
}
```

SLIP-19

Q2. Create an Applet that displays the x and y position of the cursor movement using Mouse and Keyboard. (Use appropriate listener)

Ans:

SLIP-20

Q1. Write a java program using AWT to create a Frame with title “TYBBACA”, background color RED. If user clicks on close button then frame should close.

Ans:

```
import java.awt.*;
import java.awt.event.*;
class Q1 extends Frame{
	Q1(){
		setTitle("TYBBACA");
		setLayout(null);
		setSize(500,500);
		setVisible(true);
		setBackground(Color.RED);
		addWindowListener(new WindowAdapter(){
			public void windowClosing(WindowEvent windowEvent){
				System.exit(0);
			}
		});
	}
	public static void main(String[] args) {
		new Q1();
	}
}
```

SLIP-20

Q2. Construct a Linked List containing name: CPP, Java, Python and PHP. Then extend your java program to do the following: i. Display the contents of the List using an Iterator ii. Display the contents of the List in reverse order using a ListIterator

Ans:

```
import java.util.*;
class Q2{
	public static void main(String[] args) {
		LinkedList<String> ll=new LinkedList<String>();
		ll.add("Ganesh");
		ll.add("Prashant");
		ll.add("Sarthak");
		System.out.println("LinkedList Elements: ");
		Iterator i=ll.iterator();
		while(i.hasNext()){
			System.out.println(i.next());
		}
		System.out.println("LinkedList Elements in reverse order: ");
		ListIterator li=ll.listIterator();
		while(li.hasNext()){
			li.next();
		}
		while(li.hasPrevious()){
			System.out.println(li.previous());
```

```
            }
        }
    }
```

SLIP-21

Q1. Write a java program to display each word from a file in reverse order.

Ans:

```
import java.io.*;
import java.util.*;
class Q1{
	public static void main(String[] args) {
		try{
			FileReader reader=new FileReader("D:\\java slips/slip21/demo.txt");
			int data=reader.read();
			ArrayList<String> al=new ArrayList<String>();
			while(data!=-1){
				String ch=String.valueOf((char)data);
				al.add(ch);
			   data=reader.read();
			}
			Collections.reverse(al);
			for(String list:al){
				System.out.print(list);
			}
			reader.close();
		}
		catch(Exception e){
```

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

SLIP-21

Q2. Create a hashtable containing city name & STD code. Display the details of the hashtable. Also search for a specific city and display STD code of that city.

Ans:

```
import java.util.*;
class Q2{
	public static void main(String[] args) {
		Scanner get=new Scanner(System.in);
		Hashtable<String,Integer> ht=new Hashtable<String,Integer>();
		ht.put("Ganeshnagar",11);
		ht.put("Wakadi",22);
		ht.put("Rahata",33);
		System.out.println("Details of Cities with thier STD Codes: ");
		for(Map.Entry m:ht.entrySet()){
			System.out.println(m.getKey()+" "+m.getValue());
		}
		System.out.println("Enter City Name to Search: ");
		String cname=get.next();
		System.out.println("STD Code of given city is: ");
		for(Map.Entry m:ht.entrySet()){
			if(m.getKey().equals(cname))
				System.out.println(m.getValue());
		} } }
```

SLIP-22

Q1. Write a Java program to calculate factorial of a number using recursion.

Ans:

```
import java.util.*;
class Q1{
        static int factorial(int n){
        if(n==0|| n==1)
            return 1;

        return n*factorial(n-1);
        }
        public static void main(String[] args) {
        int res=factorial(5);
        System.out.println("Factorial is: "+res);

        }
}
```

SLIP-22

Q2. Write a java program for the following: 1. To create a file. 2. To rename a file. 3. To delete a file. 4. To display path of a file.

Ans:

```
import java.util.*;
import java.io.*;
class Q2{
	public static void main(String[] args) {
		try{
			Scanner get=new Scanner(System.in);
			System.out.println("Enter file name to create file: ");
			String name=get.next();
			File file=new File("D:\\java slips/slip22/"+name+".txt");
			System.out.println("Enter Choice: ");
			int ch=get.nextInt();
			switch(ch){
			case 1: if(file.createNewFile()){
				   //File file=new File("D:\\java slips/slip22/"+name+".txt");
				System.out.println("File created successfully.");
				}
				else{
				System.out.println("File exists");
				}
				break;
```

```
                case 2: System.out.println("Enter Filename to rename: ");
                        String newfile=get.next();
                        File newf=new File("D:\\java
slips/slip22/"+newfile+".txt");
                        if(file.renameTo(newf))
                           System.out.println("File renamed.");
                        else
                           System.out.println("unable to rename file.");
                        break;
              case 3: if(file.delete())
                         System.out.println("File deleted successfully");
                       else
                         System.out.println("unable to delete file");
                       break;
              case 4: System.out.println("Path: "+file.getAbsolutePath());
                     break;
              default: System.out.println("Invalid choice..!");
}
            }
            catch(Exception e){
                  System.out.println(e);
            }
      }
}
```

SLIP-23

Q1. Write a java program to check whether given file is hidden or not. If not then display its path, otherwise display appropriate message.

Ans:

```
import java.io.*;
import java.util.*;
class Q1{
	public static void main(String[] args) {
		try{
			Scanner get=new Scanner(System.in);
			System.out.println("Enter file path: ");
			String fname=get.next();
			File file=new File(fname);
			if(file.isHidden()){
				System.out.println("File is Hidden");
			}
			else{
				System.out.println("File is not hidden");
				if(!file.isHidden()){
					System.out.println("Path: "+file.getAbsolutePath());
				}
			}
		}
		catch(Exception e){
```

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

SLIP-23

Q2. Write a java program to design following Frame using Swing.

Ans:

```
import javax.swing.*;
import java.awt.*;
class Q2 extends JFrame{
	Q2(){
		JMenuBar mb=new JMenuBar();
		this.setJMenuBar(mb);
		JMenu file=new JMenu("File");
		JMenuItem newone,open;
		file.add(newone=new JMenuItem("new"));
		file.add(open=new JMenuItem("open"));
		mb.add(file);

		JMenu edit=new JMenu("Edit");
		//MenuItem undo,redo,cut,copy,paste;
		JMenuItem undo=new JMenuItem("Undo");
		JMenuItem redo=new JMenuItem("Redo");
		JMenuItem cut=new JMenuItem("Cut");
		JMenuItem copy=new JMenuItem("Copy");
		JMenuItem paste=new JMenuItem("Paste");
		undo.setIcon(new ImageIcon("undo.jpeg"));
		redo.setIcon(new ImageIcon("redo.jpeg"));
```

```
        cut.setIcon(new ImageIcon("cut.jpeg"));
        copy.setIcon(new ImageIcon("copy.jpeg"));
        paste.setIcon(new ImageIcon("paste.jpeg"));
        edit.add(undo);
        edit.add(redo);
        edit.add(cut);
        edit.add(copy);
        edit.add(paste);
        mb.add(edit);

        JMenu search=new JMenu("Search");
        JMenuItem filename;
        search.add(filename=new JMenuItem("Filename"));
        mb.add(search);
}
void config(){
        this.setLayout(null);
        this.setExtendedState(JFrame.MAXIMIZED_BOTH);
        this.setVisible(true);
this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}
public static void main(String[] args) {
        Q2 ob=new Q2();
        ob.config();
} }
```

SLIP-24

Q1. Write a java program to count number of digits, spaces and characters from a file.

Ans:

```
import java.io.*;


class Q1 {
    public static void main(String[] args) {
        try {
            FileReader reader = new FileReader("D:\\java slips/slip24/demo.txt");
            int data = reader.read();
            int digits = 0;
            int characters = 0;
            int spaces = 0;

            while (data != -1) {
                char data2 = (char) data;
                if (Character.isLetter(data2)) {
                  characters++;
                }
                else if (Character.isDigit(data2)) {
                    digits++;
                } else if (Character.isWhitespace(data2)) {
                    spaces++;
```

```
            }
            System.out.print(data2);
            data = reader.read();
        }

        System.out.println("No of spaces: " + spaces);
        System.out.println("No of digits: " + digits);
        System.out.println("No of characters: " + characters);
        reader.close();
    } catch (Exception e) {
        System.out.println(e);
    }
  }
}
```

SLIP-24

Q2. Create a package TYBBACA with two classes as class Student (Rno, SName, Per) with a method disp() to display details of N Students and class Teacher (TID, TName, Subject) with a method disp() to display the details of teacher who is teaching Java subject. (Make use of finalize() method and array of Object)

Ans:

TYBBACA/student.java

```
package TYBBACA;
public class student{
	int rno;
	String sname;
	Float per;
	public student(int Rno,String Sname,Float Percentage){
	this.rno=Rno;
	this.sname=Sname;
	this.per=Percentage;
	}
	public void display(){
		System.out.println("Student RollNo: "+rno);
		System.out.println("Student Name: "+sname);
		System.out.println("Student Percentage: "+per);
	}
}
```

TYBBACA/Teacher.java

```
package TYBBACA;
public class teachers{
	int tid;
	String tname;
	public String sub;
	public teachers(int Tno,String Tname,String Subject){
	this.tid=Tno;
	this.tname=Tname;
	this.sub=Subject;
	}
	public void display(){
		System.out.println(tid+" "+tname+" "+sub);
	}
}
```

Q2.java

```
import TYBBACA.*;
import java.util.*;
public class Q2{
	public static void main(String[] args) {
		Scanner get=new Scanner(System.in);
		System.out.println("Enter how many students: ");
		int sn=get.nextInt();
		student s[]=new student[sn];
		int rollno;
```

```
            String name;
            Float per;
            for(int i=0;i<sn;i++){
                System.out.println("Enter Student rollno, name, percenatge
respectively: ");
        rollno=get.nextInt();
        name=get.next();
        per=get.nextFloat();
        s[i]=new student(rollno, name, per);
            }

            System.out.println("Student Details: ");
            for(int i=0;i<sn;i++){
                s[i].display();
            }
            System.out.println("Enter how many teachers: ");
            int tn=get.nextInt();
            teachers t[]=new teachers[tn];
            int tid;
            String tname;
            String tsub;
            for(int i=0;i<tn;i++){
                System.out.println("Enter Teacher id, name, subject
respectively: ");
        tid=get.nextInt();
```

```
            tname=get.next();
            get.nextLine();
            tsub=get.next();
            t[i]=new teachers(tid, tname, tsub);
               }
               System.out.println("Teachers details who teaches java");
               String sub="java";
               for(int i=0;i<tn;i++){
                     if(sub.equals(t[i].sub)){
                     t[i].display();
               }
               }
        }
}
```

SLIP-25

Q1. Write a java program to check whether given string is palindrome or not.

Ans:

```
import java.util.*;
import java.io.*;
class Q1{
	public static void main(String[] args) {
		System.out.println("Enter a string: ");
		Scanner get=new Scanner(System.in);
		String name=get.nextLine();
		StringBuilder str=new StringBuilder(name).reverse();
		String rev=String.valueOf(str);
		//System.out.println(rev);
		if(rev.equals(name))
			System.out.println("String is palindrome");
		else
			System.out.println("String is not palindrome");
	}
}
```

SLIP-25

Q2. Create a package named Series having three different classes to print series: i. Fibonacci series ii. Cube of numbers iii. Square of numbers Write a java program to generate ‘n’ terms of the above series.

Ans:

Series/cube.java

```
package Series;
public class cube{
	public int cubecount(int n){
		System.out.println("Cube upto given terms: "+n);
		for(int i=1;i<=n;i++){
		int cube=i*i*i;
		System.out.println(cube);
	}
	return 1;
}
}
```

Series/Fibonacci.java

```
package Series;
public class fibonacci{
	public int fibonaccicount(int n){
		int ft=1;
		int st=1;
```

```
            System.out.println("Fibonacci Series upto terms: "+n);
            System.out.println(ft+" "+"\n"+st+" ");
            for(int i=3;i<=n;i++){
                int res=ft+st;
                System.out.println(res+" ");
                ft=st;
                st=res;
            }
            return 0;
        }
}
```


Series/square.java

```
package Series;
public class square{
        public int squarecount(int n){
            System.out.println("Square upto given terms: "+n);
            for(int i=1;i<=n;i++){
                int res=i*i;
                System.out.println(res);
            }
            return 0;
        }
}
```

Q2.java

```
import Series.*;
public class Q2{
	public static void main(String[] args) {
		fibonacci f=new fibonacci();
		f.fibonaccicount(5);
		cube c=new cube();
		c.cubecount(5);
		square s=new square();
		s.squarecount(5);
	}
}
```

SLIP-26

Q1. Write a java program to display ASCII values of the characters from a file.

Ans:

```
import java.io.*;
class Q2{
	public static void main(String[] args) {
	try{
		FileReader reader=new FileReader("D:\\java slips/slip26/test.txt");
		int data=reader.read();
		while(data!=-1){
		System.out.println("Character: "+(char)data+" ASCII Value: "+data);
			data=reader.read();
		}
		reader.close();
	}
	catch(Exception e){
		System.out.println(e);
	}
}
}
```

SLIP-26

Q2. Write a java program using applet to draw Temple.

SLIP-27

Q1. Write a java program to accept a number from user, If it is greater than 1000 then throw user defined exception “Number is out of Range” otherwise display the factors of that number. (Use static keyword)

Ans:

```
import java.io.*;
import java.util.*;
class InvalidNumException extends Exception{
	InvalidNumException(String msg){
		super(msg);
	}
}
class Q1{
	static int n;
	public static void main(String[] args) {
		try{
			Scanner get=new Scanner(System.in);
			n=get.nextInt();
			if(n>1000)
				throw new InvalidNumException(": Number is out of range.");
			else{
				for(int i=1;i<n;i++){
					if(n%i==0)
						System.out.println(i+" ");
```

```
                    }
                }
            }
            catch(InvalidNumException e){
                System.out.println(e);
            }
            catch(Exception e){
                System.out.println(e);
            }
        }
}
```

SLIP-27

Q2. Write a java program to accept directory name in TextField and display list of files and subdirectories in List Control from that directory by clicking on Button.

Ans:

```
import java.awt.*;
import java.awt.event.*;
import java.io.*;
class Q2 extends Frame implements ActionListener{
    Graphics g;
    List l;
    TextField tb1;
    Button btn;
    Label l1;
    Q2(){
        tb1=new TextField();
        tb1.setBounds(50,50,150,40);
        btn=new Button("Submit");
        btn.setBounds(50,100,150,40);
        btn.addActionListener(this);
        l=new List(10);
        l.setBounds(50,180,200,100);
        setLayout(null);
        add(tb1);
```

```
        add(btn);
        add(l);
        setTitle("GT");
        setSize(500,500);
        setVisible(true);

        addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e){
                dispose();
                System.exit(0);
}
});
}
public void actionPerformed(ActionEvent e){
        if(e.getSource()==btn){
                try{
                        String dir=tb1.getText();
                        File fl=new File(dir);
                        File[] files=fl.listFiles();
                        l.removeAll();
                        for(File f:files){
                                l.add(f.getName());
                        }

                        }
```

```
                catch(Exception e1){
                        System.out.println(e1);
                }
        }
        }
    public static void main(String[] args) {
        new Q2();
    }
}
```

SLIP-28

Q1. Write a java program to count the number of integers from a given list. (Use Command line arguments).

Ans:

```
import java.util.*;
class Q1{
	public static void main(String[] args) {
		ArrayList<String> al=new ArrayList<String>();
		int count=0;
		for(int i=0;i<args.length;i++){
			al.add(args[i]);
		}
		for(int j=0;j<al.size();j++){
			String val=al.get(j);
		try{
			int k=Integer.parseInt(val);
			count++;
		}catch(Exception e){
			System.out.println(e);
		}}
		System.out.println("Number of elements in list are: "+count);
	}
}
```

SLIP-28

Q2. Write a java Program to accept the details of 5 employees (Eno, Ename, Salary) and display it onto the JTable.

Ans:

```
import javax.swing.*;
class Q2{
    JFrame jf;
    JTable jt;
    Q2(){
        jf=new JFrame();
        jf.setTitle("Employee Details");
        String data[][]={
            {"1","Ganesh Telore","100000"},
            {"2","Prashant Telore","80000"},
            {"3","Sarthak Salunke","70000"},
            {"4","Naresh Ashtekar","60000"},
            {"5","Vishnu Bhagat","50000"}
        };
        String col[]={"Eno","EName","Salary"};
        jt=new JTable(data,col);
        jt.setBounds(50,50,300,200);
    JScrollPane sp=new JScrollPane(jt);//used for showing column names ex eno, ename and salary
    jf.add(sp);
```

```
        jf.setSize(500,500);
        jf.setVisible(true);
        jf.setDefaultCloseOperation(jf.EXIT_ON_CLOSE);
        }
        public static void main(String[] args) {
                new Q2();
        }
}
```

SLIP-29

Q1. Write a java program to check whether given candidate is eligible for voting or not. Handle user defined as well as system defined Exception.

Ans:

```
import java.io.*;
import java.util.*;
class InvalidAgeException extends Exception{
        InvalidAgeException(String msg){
           super(msg);
        }
}
class Q1{
        public static void main(String[] args) {
                        try{
                                Scanner get=new Scanner(System.in);
                                System.out.println("Enter Your Age: ");
                                String age=get.next();
                                int uage=Integer.parseInt(age);
                                if(uage<18)
                               throw new InvalidAgeException(": Not Eligible for voting.");
                                else if(uage==18)
                                throw new InvalidAgeException(": Eligible for voting.");
                                else
                                throw new InvalidAgeException(": Eligible for voting.");
```

```
                }
                catch(InvalidAgeException e){
                        System.out.println(e);
                }
                catch(RuntimeException e1){
                        System.out.println("Error: Age is not valid.");
                }
        }
}
```

SLIP-29

Q2. Write a java program using Applet for bouncing ball. Ball should change its color for each bounce.

Ans:

SLIP-30

Q1. Write a java program to accept a number from a user, if it is zero then throw user defined Exception “Number is Zero”. If it is non-numeric then generate an error “Number is Invalid” otherwise check whether it is palindrome or not.

Ans:

```
import java.io.*;
import java.util.*;
class InvalidNum extends Exception{
        InvalidNum(String msg){
                super(msg);
        }
}
class Q1{
        public static void main(String[] args) {
                try{
                        Scanner get=new Scanner(System.in);
                        System.out.println("Enter the number: ");
                        String n=get.next();
                        int num=Integer.parseInt(n);
                        int original=num;
                        if(n.equals("0"))
                                throw new InvalidNum(" :Number is zero.");
                        else{
                                int sum=0;
```

```
                while(num!=0){
                    int digit=num%10;
                    sum=sum*10+digit;
                    num=num/10;
                }
                if(sum==original)
                    throw new InvalidNum("Number is palindrome.");
                else
                    throw new InvalidNum("Number is not palindrome.");
            }
        }
        catch(InvalidNum e){
            System.out.println(e);
        }
        catch(Exception e){
            System.out.println("Number is invalid.");
        }
    }
}
```

SLIP-30

Q2. Write a java program to design a following GUI (Use Swing).

Ans:

```
import javax.swing.*;
import java.awt.*;
class Q2 extends JFrame{
	Q2(){
		JLabel lbl=new JLabel("<html><u>Personal Information</u></html>");
		lbl.setBounds(600,30,300,50);
		lbl.setFont(new Font("Arial",Font.PLAIN,30));
		JLabel lbl1=new JLabel("First Name: ");
		lbl1.setBounds(300,100,200,50);
		JTextField tb1=new JTextField();
		tb1.setBounds(500,100,550,50);
		JLabel lbl2=new JLabel("Last Name: ");
		lbl2.setBounds(300,170,200,50);
		JTextField tb2=new JTextField();
		tb2.setBounds(500,170,550,50);
		JLabel lbl3=new JLabel("Address: ");
		lbl3.setBounds(300,280,200,50);
		JTextField tb3=new JTextField();
		tb3.setBounds(500,280,550,50);
		JLabel lbl4=new JLabel("Mobile No: ");
```

```
lbl4.setBounds(300,350,200,50);
JTextField tb4=new JTextField();
tb4.setBounds(500,350,550,50);
JLabel lbl5=new JLabel("Gender: ");
lbl5.setBounds(300,420,200,50);
ButtonGroup parent=new ButtonGroup();
JRadioButton r1=new JRadioButton("Male",true);
r1.setBounds(500,420,100,50);
JRadioButton r2=new JRadioButton("Female");
r2.setBounds(700,420,100,50);
parent.add(r1);
parent.add(r2);
JLabel lbl6=new JLabel("Your Interests: ");
lbl6.setBounds(300,490,200,50);
JCheckBox cb1=new JCheckBox("Computer");
cb1.setBounds(500,490,200,50);
JCheckBox cb2=new JCheckBox("Sport");
cb2.setBounds(750,490,200,50);
JCheckBox cb3=new JCheckBox("Music");
cb3.setBounds(950,490,200,50);
JButton submit=new JButton("Submit");
submit.setBounds(400,560,250,50);
JButton reset=new JButton("Reset");
reset.setBounds(700,560,250,50);
this.add(lbl);
```

```
        this.add(lbl1);
        this.add(tb1);
        this.add(lbl2);
        this.add(tb2);
        this.add(lbl3);
        this.add(tb3);
        this.add(lbl4);
        this.add(tb4);
        this.add(lbl5);
        this.add(r1);
        this.add(r2);
        this.add(lbl6);
        this.add(cb1);
        this.add(cb2);
        this.add(cb3);
        this.add(submit);
        this.add(reset);
    }
    void config(){
        this.setLayout(null);
        this.setExtendedState(JFrame.MAXIMIZED_BOTH);
        this.setVisible(true);
        this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
    public static void main(String[] args) {
```

```
        Q2 ob=new Q2();
        ob.config();
    }
}
```