1. WAP to enter the elements of an array and display sum of array.

```
import java.util.Scanner;
public class Array_Sum
{
   public static void main(String[] args)
   {
      int n, sum = 0;
      Scanner s = new Scanner(System.in);
      System.out.print("Enter no. of elements you want in array:");
      n = s.nextInt();
      int a[] = new int[n];
      System.out.println("Enter all the elements:");
      for(int i = 0; i < n; i++)
      {
         a[i] = s.nextInt();
         sum = sum + a[i];
      }
      System.out.println("Sum:"+sum);
   }
}
```

OUTPUT

```
Enter no. of elements you want in array:5
Enter all the elements:
5
5
5
5
5
Sum:25
```

2. WAP to find the transpose of a given matrix.

```
import java.util.Scanner;
public class MatrixTranspose{
public static void main(String args[]){
Scanner s = new Scanner(System.in);
int original[][]=new int[3][3];
System.out.println("Enter elements of matrix 3*3 ");

for(int i=0;i<3;i++)
for(int j=0;j<3;j++)
original[i][j]=s.nextInt();

int transpose[][]=new int[3][3];

for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
transpose[i][j]=original[j][i];
}
}

System.out.println("Printing Matrix without transpose:");
for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
System.out.print(original[i][j]+" ");
}
System.out.println();
}
System.out.println("Printing Matrix After Transpose:");
for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
System.out.print(transpose[i][j]+" ");
```

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

OUTPUT

```
Enter elements of matrix 3*3
1
3
4
2
4
3
3
4
5
Printing Matrix without transpose:
1 3 4
2 4 3
3 4 5
Printing Matrix After Transpose:
1 2 3
3 4 4
4 3 5
```

3. Create a package Package1 having one class A contains msg method. Create second package mypack with class B, call msg method of A class in second package.

A.java

```
package Package1;
public class A{
public void msg()
{
System.out.println("Hello");
}
 public static void main(String args[]){
  A obj = new A();
   obj.msg();
   }
}
```

B.java

```
package mypack;
import Package1.A;
public class B{
 public static void main(String args[]){
  A obj = new A();
   obj.msg();
   }
}
```

OUTPUT

```
javac -d . A.java
java Package1.A
Hello
javac -d . B.java
java mypack.B
Hello
```

4. Write a Java program of create Interface GHI having print method which extends another Interface XYZ having show method. (create Interface extends another Interface program)

```
interface XYZ{
void show();
}
interface GHI extends XYZ{
void print();
}

class C implements GHI{
public void show()
{
System.out.println("Hello");
}
public void print()
{
System.out.println("Welcome");
}
public static void main(String[] args){
C obj = new C();
obj.show();
obj.print();
}
}
```

OUTPUT

```
Hello
Welcome
```

5. WAP Java program to demonstrate the use of StringTokenizer class and its methods hasMoreTokens() and nextTokens()

```
import java.util.StringTokenizer;

public class Example5{

 public static void main(String args[]){

   StringTokenizer st = new StringTokenizer("Pratiksha Savade"," ");

    while (st.hasMoreTokens()) {

       System.out.println(st.nextToken());

    }

  }

}
```

OUTPUT

```
Pratiksha

Savade
```

6. WAP of adding elements in Arraylist and Map

```
import java.util.ArrayList;


class Example6{
   public static void main(String[] args)
   {
      ArrayList<Integer> list = new ArrayList<>();
      list.add(1);
      list.add(2);
      list.add(3);
      list.add(4);
      System.out.println("ArrayList : " + list);


      HashMap<Integer,String> map=new HashMap<Integer,String>();
  map.put(1,"Mango");
  map.put(2,"Apple");
  map.put(3,"Banana");
  map.put(4,"Grapes");
System.out.println("HashMap : "+map);
   }
}
```

OUTPUT

```
ArrayList : [1, 2, 3, 4]
HashMap : {1=Mango, 2=Apple, 3=Banana, 4=Grapes}
```

7. Constructor of accept rno,name, three subject marks of student,i) do all types of constructor ii) pass values by scanner iii) and calculate total,percentage and remark of student and display it. If Per >50 then student is pass else fail.

```
import java.util.*;

class Student1{

int id;

String name;

int age;

int sb1,sb2,sb3;


Student1(){

id=1;

name="abc";

age=22;

}

Student1(int i,String nm,int a){

id=i;

name=nm;

age=a;

}

Student1(int i,String n){

id=i;

name=n;

}

Student1(Student1 s){

id=s.id;

name=s.name;

age=s.age;

}

Student1(int i,String nm,int a,int s1,int s2,int s3){

id=i;

name=nm;
```

```
age=a;
sb1=s1;
sb2=s2;
sb3=s3;
}
void remark(){
int tot;
double per;
tot=sb1+sb2+sb3;
per=tot/3;
System.out.println("3 subject marks="+sb1+" "+sb2+" "+sb3);
System.out.println("Total marks score in 3 subject"+tot);
System.out.println("Percentage ="+per);
if(per>=50)
System.out.println("passed");
else
System.out.println("fail");

}

void display(){
System.out.println(id+" "+name+" "+age);
}
public static void main(String args[])
{
int i,a,su1,su2,su3;
String n;
Scanner sc=new Scanner(System.in);
System.out.println("Enter id");
i=sc.nextInt();
System.out.println("Enter name");
```

```
n=sc.next();
System.out.println("Enter age");
a=sc.nextInt();
System.out.println("Enter subject1 marks");
su1=sc.nextInt();
System.out.println("Enter subject2 marks");
su2=sc.nextInt();
System.out.println("Enter subject3 marks");
su3=sc.nextInt();
Student1 s1=new Student1();
Student1 s2=new Student1(i,n,a);
Student1 s3=new Student1(i,n);
Student1 s4=new Student1(s2);
Student1 s5=new Student1(i,n,a,su1,su2,su3);
System.out.println("-----Default constructor-------");
s1.display();
System.out.println("-----Parameterized constructor-------");
s2.display();
System.out.println("-----Overloading constructor-------");
s3.display();
System.out.println("-----Copy constructor-------");
s4.display();
System.out.println("-----Overloading constructor-------");
s5.display();
s5.remark();
}
}
```

OUTPUT

```
Enter id
12
Enter name
```

sapna

Enter age

2

Enter subject1 marks

50

Enter subject2 marks

80

Enter subject3 marks

70

-----Default constructor-------

1 abc 22

-----Parameterized constructor-------

12 sapna 2

-----Overloading constructor-------

12 sapna 0

-----Copy constructor-------

12 sapna 2

-----Overloading constructor-------

12 sapna 2

3 subject marks=50 80 70

Total marks score in 3 subject200

Percentage =66.0

Passed

8. Write a Java program to test any one Build in exception and one userdefined exception.

```
public class TestThrow1{
  static void validate(int age){
    if(age<18)
     throw new ArithmeticException("not valid to vote below age of 18");
    else
     System.out.println("welcome to vote");  }
  public static void main(String args[]){
     validate(13);
     System.out.println("rest of the code...");
 }
}
```

OUTPUT

```
Exception in thread "main" java.lang.ArithmeticException: not valid to vote  below age of 18
       at Example8.validate(Example8.java:4)
       at Example8.main(Example8.java:11)
```

```
class ArithmeticException_Demo {
public static void main(String args[])
   {
      try {
         int a = 30, b = 0;
         int c = a / b; // cannot divide by zero
         System.out.println("Result = " + c);
      }
      catch (ArithmeticException e) {
         System.out.println("Can't divide a number by 0");
      } }
}
```

OUTPUT

```
Can't divide a number by 0
```

9. Write a program to create dmart class with accepting values of product id,name,rate and quantity and calculate payable amt with discount

If amt 5000-3000 =20 %, 3000-2000 =15%, 2000-1000=10% , Other wise no discount

```
import java.util.Scanner;


public class dmart
{
String pname;
int pid;
int quantity;
double rate;
double amt;
double dis;
double totamt;


    void input() {
       Scanner in = new Scanner(System.in);
       System.out.print("Enter product Id: ");
       pid = in.nextInt();
       System.out.print("Enter product name: ");
       pname = in.next();
       System.out.print("Enter quantity: ");
       quantity = in.nextInt();
       System.out.print("Enter rate: ");
       rate = in.nextDouble();
   }


void calculate() {
       amt=quantity*rate;
   }
```

```
void discount(){
if(amt<5000 && amt>3000)
{
dis =0.2 * amt;
}
else if (amt<3000 && amt>2000)
{
dis =0.15 * amt;
}
else if(amt >1000 && amt<3000)
{
dis =0.1 * amt;
}
else
{
dis=0;
}
 }

void total_amt(){
totamt = amt - dis;
}
void display() {
        System.out.println("---------------- ");
        System.out.println("Product Id: " + pid);
        System.out.println("Product Name: " + pname);
        System.out.println("Quantity: " + quantity);
        System.out.println("Rate: " + rate);
        System.out.println("Amount " + amt);
        System.out.println("Discount: " + dis);
        System.out.println("Tot amount : " + totamt);
```

```
    }

    public static void main(String args[]) {
        dmart p1 = new dmart();
        p1.input();
        p1.calculate();
       p1.discount();
      p1.total_amt();
        p1.display();
    }
}
```

OUTPUT

Product Id: 1

Product Name: fan

Quantity: 2

Rate: 2000.0

Amount 4000.0

Discount: 800.0

Tot amount : 3200.0

10. WRP of apply any 5 methods of StringBuilder class.

```
class Example10{
public static void main(String args[]){
StringBuilder sb=new StringBuilder("Hello ");
sb.append("Java");
System.out.println(sb);
sb.insert(1,"Java");
System.out.println(sb);
sb.replace(1,3,"Java");
System.out.println(sb);
sb.delete(1,3);
System.out.println(sb);
sb.reverse();
System.out.println(sb);
}
}
```

OUTPUT

```
Hello Java
HJavaello Java
HJavavaello Java
Hvavaello Java
avaJ olleavavH
```

11. Write a Java program to create a Thread by Implementing the Runnable Interface. And print the name of currently executing thread.

```
public class Example11

{

public static void main(String args[])

{

Thread t= new Thread("My first thread");

t.start();

String str = t.getName();

System.out.println(str);

}

}
```

Output

My first thread

12. Write any one example of Multilevel inheritance in JAVA

```
class Animal{
void eat(){System.out.println("eating...");}
}
class Dog extends Animal{
void bark(){System.out.println("barking...");}
}
class BabyDog extends Dog{
void weep(){System.out.println("weeping...");}
}
class MulitilevelInheritance{
public static void main(String args[]){
BabyDog d=new BabyDog();
d.weep();
d.bark();
d.eat();
}
}
```

OUTPUT

```
weeping...
barking...
eating...
```

13. WAP of static, abstract class and this keyword in JAVA.

```
abstract class Shape
{
abstract void area();
}
class Rectangle extends Shape{
int l,b;
Rectangle(int x,int y)
{
l=x;
b=y;
}
void area()
{
System.out.println("Area of Rectangle is"+l*b);
}
}
class Square extends Shape{
static int a=1,b=3;
int s;
Square(int x,int y){
a=x;
b=y;
}
Square(int x){
s=x;
}
void area(){
System.out.println("Area of square is "+4*s);
}
static void add(){
```

```
int c;
c=a+b;
System.out.println("Addition is"+ c);
}
}

public class AB{
public static void main(String args[]){
Rectangle R=new Rectangle(5,6);
R.area();
Square S=new Square(5);
Square S1=new Square(5,5);
S.area();
S1.add();
}
}
```

OUTPUT

```
Area of Rectangle is30
Area of square is 20
Addition is10
```

14. WAP of regex Quantifiers and character classes with different examples

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

class RegexExample{

public static void main(String args[]){

System.out.println("? quantifier ....");

System.out.println(Pattern.matches("[amn]?", "a"));//true (a or m or n comes one time)

System.out.println(Pattern.matches("[ape]?", "apple"));//false (a comes more than one time)


System.out.println("+ quantifier ....");

System.out.println(Pattern.matches("[amn]+", "a"));//true (a or m or n once or more times)

System.out.println(Pattern.matches("[amn]+", "aaa"));//true (a comes more than one time)

System.out.println(Pattern.matches("[amn]+", "aammmnn"));//true (a or m or n comes more than
once)

System.out.println(Pattern.matches("[amn]+", "aazzta"));//false (z and t are not matching pattern)


System.out.println("* quantifier ....");

System.out.println(Pattern.matches("[amn]*", "ammmna"));//true (a or m or n may come zero or
more times)

}

}
```

OUTPUT

```
? quantifier ....

true

false

+ quantifier ....

true

true

true

false

* quantifier ....

True
```

15. Write any three Methods in Java Array utility Classes (Ex: sort arrays, copy array, compare)

```
import java.util.Arrays;
public class ArrayExample
{
public static void main(String[] args)
{
int [] array = new int [] {90, 23, 5, 109, 12, 22, 67, 34};
char[] copyFrom = { 'd', 'e', 'c', 'a', 'f', 'f', 'e','i', 'n', 'a', 't', 'e', 'd' };
char[] copyTo = new char[7];
int[] a1 = new int[] {1, 2, 3, 4, 5, 6, 7, 8};
int[] a2 = new int[] {1, 2, 3, 4, 5, 6, 7, 8};
Arrays.sort(array);
System.out.println("Elements of array sorted in ascending order: ");
for (int i = 0; i < array.length; i++)
{
System.out.println(array[i]);   }
System.arraycopy(copyFrom, 2, copyTo, 0, 7);
System.out.println(String.valueOf(copyTo));
if (a1 == a2)
System.out.println("Arrays are equal.");
else
System.out.println("Arrays are not equal.");  }
}
```

OUTPUT

```
Elements of array sorted in ascending order:
5
12
22
23
34
67
```

90

109

caffein

Arrays are not equal.

16. Create student information form using Java AWT compodents

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

class Student extends Frame implements ActionListener
{
        Label lsname, lsrollno, lsclass, lgander, lsbg, lsmob, lsadrs;
        CheckboxGroup gander;
        Checkbox male, female;
        Choice csclass;
        TextField tfsname, tfsrollno, tfsmob;
        TextArea tasadrs;
        Button submit;

        TextArea display_details;

        Student()
        {
                lsname   = new Label("Name : ");
                lsrollno = new Label("Roll No : ");
                lsclass  = new Label("Class : ");
                lgander  = new Label("Gander : ");
                lsbg     = new Label("Blood Group : ");
                lsmob    = new Label("Mobile : ");
                lsadrs   = new Label("Address : ");

                gander = new CheckboxGroup();
    male   = new Checkbox("Male", gander, false);
    female = new Checkbox("Female", gander, false);

    csclass = new Choice();
```

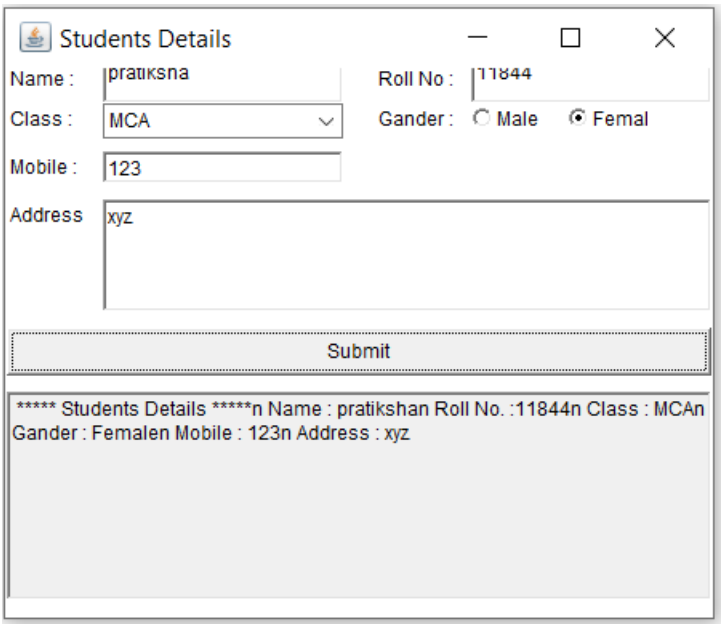
```
csclass.add("BSc IT");
csclass.add("BSc CS");
csclass.add("BCA");
csclass.add("MSc IT");
csclass.add("MSc CS");
csclass.add("MCA");

        tfsname   = new TextField();
        tfsrollno = new TextField();
        tfsmob    = new TextField();

        tasadrs = new TextArea("", 2 , 100 , TextArea.SCROLLBARS_NONE);

        submit  = new Button("Submit");

        display_details = new TextArea("", 2 , 100 , TextArea.SCROLLBARS_NONE);
        display_details.setEditable(false);

        lsname.setBounds(10, 30, 50, 30);
        tfsname.setBounds(70, 30, 150, 30);

        lsrollno.setBounds(240, 30, 50, 30);
        tfsrollno.setBounds(300, 30, 150, 30);

        lsclass.setBounds(10, 60, 50, 20);
        csclass.setBounds(70, 60, 150, 20);

        lgander.setBounds(240, 60, 50, 20);
        male.setBounds(300, 60, 50, 20);
        female.setBounds(360, 60, 50, 20);
```

```
lsmob.setBounds(10, 90, 50, 20);
tfsmob.setBounds(70, 90, 150, 20);

lsadrs.setBounds(10, 120, 50, 20);
tasadrs.setBounds(70, 120, 380, 70);

submit.setBounds(10, 200, 440, 30);

display_details.setBounds(10, 240, 440, 130);

add(lsname);
add(lsrollno);
add(lsclass);
add(lgander);
add(lsbg);
add(lsadrs);
add(lsmob);

add(male);
add(female);

add(csclass);

add(tfsname);
add(tfsrollno);
add(tasadrs);
add(tfsmob);

add(submit);

add(display_details);
```

```
                submit.addActionListener(this);


                setTitle("Students Details");
                setSize(460,390);
                setLayout(null);
                setVisible(true);


                addWindowListener(new WindowAdapter()
                {
      public void windowClosing(WindowEvent e)
      {
         dispose();
      }
    });
        }


public void actionPerformed(ActionEvent e)
{
if(e.getSource()==submit)
{
String sdetails = " ***** Students Details *****n Name : " + tfsname.getText() + "n Roll No. :" +
tfsrollno.getText() + "n Class : " + csclass.getSelectedItem() + "n Gander : " +
gander.getSelectedCheckbox().getLabel() + "n Mobile : " + tfsmob.getText() +  "n Address : " +
tasadrs.getText();


display_details.setText(sdetails);
                }
      }


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

```
                new Student();
        }
}
```

OUTPUT



17. Create SBI Bank customer information form using Java Swing components.

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

class MyFrame
    extends JFrame
    implements ActionListener {

    // Components of the Form
    private Container c;
    private JLabel title;
    private JLabel name;
    private JTextField tname;
    private JLabel mno;
    private JTextField tmno;
    private JLabel gender;
    private JRadioButton male;
    private JRadioButton female;
    private ButtonGroup gengp;
    private JLabel dob;
    private JComboBox date;
    private JComboBox month;
    private JComboBox year;
    private JLabel add;
    private JTextArea tadd;
    private JCheckBox term;
    private JButton sub;
    private JButton reset;
    private JTextArea tout;
    private JLabel res;
```

```
private JTextArea resadd;


private String dates[]
   = { "1", "2", "3", "4", "5",
       "6", "7", "8", "9", "10",
       "11", "12", "13", "14", "15",
       "16", "17", "18", "19", "20",
       "21", "22", "23", "24", "25",
       "26", "27", "28", "29", "30",
       "31" };
private String months[]
   = { "Jan", "feb", "Mar", "Apr",
       "May", "Jun", "July", "Aug",
       "Sup", "Oct", "Nov", "Dec" };
private String years[]
   = { "1995", "1996", "1997", "1998",
       "1999", "2000", "2001", "2002",
       "2003", "2004", "2005", "2006",
       "2007", "2008", "2009", "2010",
       "2011", "2012", "2013", "2014",
       "2015", "2016", "2017", "2018",
       "2019" };


// constructor, to initialize the components
// with default values.
public MyFrame()
{
   setTitle("SBI Registration Form");
   setBounds(300, 90, 900, 600);
   setDefaultCloseOperation(EXIT_ON_CLOSE);
   setResizable(false);
```

```
c = getContentPane();
c.setLayout(null);

title = new JLabel("SBI Registration");
title.setFont(new Font("Arial", Font.PLAIN, 30));
title.setSize(300, 30);
title.setLocation(300, 40);
c.add(title);

name = new JLabel("Name");
name.setFont(new Font("Arial", Font.PLAIN, 20));
name.setSize(100, 20);
name.setLocation(100, 100);
c.add(name);

tname = new JTextField();
tname.setFont(new Font("Arial", Font.PLAIN, 15));
tname.setSize(190, 20);
tname.setLocation(200, 100);
c.add(tname);

mno = new JLabel("Mobile");
mno.setFont(new Font("Arial", Font.PLAIN, 20));
mno.setSize(100, 20);
mno.setLocation(100, 150);
c.add(mno);

tmno = new JTextField();
tmno.setFont(new Font("Arial", Font.PLAIN, 15));
tmno.setSize(150, 20);
```

```
tmno.setLocation(200, 150);
c.add(tmno);

gender = new JLabel("Gender");
gender.setFont(new Font("Arial", Font.PLAIN, 20));
gender.setSize(100, 20);
gender.setLocation(100, 200);
c.add(gender);

male = new JRadioButton("Male");
male.setFont(new Font("Arial", Font.PLAIN, 15));
male.setSelected(true);
male.setSize(75, 20);
male.setLocation(200, 200);
c.add(male);

female = new JRadioButton("Female");
female.setFont(new Font("Arial", Font.PLAIN, 15));
female.setSelected(false);
female.setSize(80, 20);
female.setLocation(275, 200);
c.add(female);

gengp = new ButtonGroup();
gengp.add(male);
gengp.add(female);

dob = new JLabel("DOB");
dob.setFont(new Font("Arial", Font.PLAIN, 20));
dob.setSize(100, 20);
dob.setLocation(100, 250);
```

```
c.add(dob);

date = new JComboBox(dates);
date.setFont(new Font("Arial", Font.PLAIN, 15));
date.setSize(50, 20);
date.setLocation(200, 250);
c.add(date);

month = new JComboBox(months);
month.setFont(new Font("Arial", Font.PLAIN, 15));
month.setSize(60, 20);
month.setLocation(250, 250);
c.add(month);

year = new JComboBox(years);
year.setFont(new Font("Arial", Font.PLAIN, 15));
year.setSize(60, 20);
year.setLocation(320, 250);
c.add(year);

add = new JLabel("Address");
add.setFont(new Font("Arial", Font.PLAIN, 20));
add.setSize(100, 20);
add.setLocation(100, 300);
c.add(add);

tadd = new JTextArea();
tadd.setFont(new Font("Arial", Font.PLAIN, 15));
tadd.setSize(200, 75);
tadd.setLocation(200, 300);
tadd.setLineWrap(true);
```

```
c.add(tadd);

term = new JCheckBox("Accept Terms And Conditions.");
term.setFont(new Font("Arial", Font.PLAIN, 15));
term.setSize(250, 20);
term.setLocation(150, 400);
c.add(term);

sub = new JButton("Submit");
sub.setFont(new Font("Arial", Font.PLAIN, 15));
sub.setSize(100, 20);
sub.setLocation(150, 450);
sub.addActionListener(this);
c.add(sub);

reset = new JButton("Reset");
reset.setFont(new Font("Arial", Font.PLAIN, 15));
reset.setSize(100, 20);
reset.setLocation(270, 450);
reset.addActionListener(this);
c.add(reset);

tout = new JTextArea();
tout.setFont(new Font("Arial", Font.PLAIN, 15));
tout.setSize(300, 400);
tout.setLocation(500, 100);
tout.setLineWrap(true);
tout.setEditable(false);
c.add(tout);

res = new JLabel("");
```

```
    res.setFont(new Font("Arial", Font.PLAIN, 20));
    res.setSize(500, 25);
    res.setLocation(100, 500);
    c.add(res);

    resadd = new JTextArea();
    resadd.setFont(new Font("Arial", Font.PLAIN, 15));
    resadd.setSize(200, 75);
    resadd.setLocation(580, 175);
    resadd.setLineWrap(true);
    c.add(resadd);

    setVisible(true);
}

// method actionPerformed()
// to get the action performed
// by the user and act accordingly
public void actionPerformed(ActionEvent e)
{
    if (e.getSource() == sub) {
        if (term.isSelected()) {
            String data1;
            String data
                = "Name : "
                  + tname.getText() + "\n"
                  + "Mobile : "
                  + tmno.getText() + "\n";
            if (male.isSelected())
                data1 = "Gender : Male"
                        + "\n";
```

```
        else
            data1 = "Gender : Female"
                    + "\n";
        String data2
            = "DOB : "
              + (String)date.getSelectedItem()
              + "/" + (String)month.getSelectedItem()
              + "/" + (String)year.getSelectedItem()
              + "\n";

        String data3 = "Address : " + tadd.getText();
        tout.setText(data + data1 + data2 + data3);
        tout.setEditable(false);
        res.setText("Registration Successfully..");
    }
    else {
        tout.setText("");
        resadd.setText("");
        res.setText("Please accept the"
                    + " terms & conditions..");
    }
}

else if (e.getSource() == reset) {
    String def = "";
    tname.setText(def);
    tadd.setText(def);
    tmno.setText(def);
    res.setText(def);
    tout.setText(def);
    term.setSelected(false);
```

```
            date.setSelectedIndex(0);
            month.setSelectedIndex(0);
            year.setSelectedIndex(0);
            resadd.setText(def);
        }
    }
}
class Registrations {

    public static void main(String[] args) throws Exception
    {
        MyFrame f = new MyFrame();
    }
}
```

OUTPUT

18. Write a Java code to Insert, Update any record from the database.(student table).

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;

public class JDBCExample {
  static final String DB_URL = "jdbc:mysql://localhost/Student";
  static final String USER = "root";
  static final String PASS = "sapna12345";

  public static void main(String[] args) {
    try(Connection conn = DriverManager.getConnection(DB_URL, USER, PASS);
      Statement stmt = conn.createStatement();
    ) {
      System.out.println("Inserting records into the table...");
      String sql = "INSERT INTO stu VALUES (100, 'Zara', 'Ali', 'BCA')";
      stmt.executeUpdate(sql);
      sql = "INSERT INTO stu VALUES (101, 'abc', 'xyz', 'BCS')";
      stmt.executeUpdate(sql);
      sql = "INSERT INTO stu VALUES (102, 'Zaid', 'Khan','Agriculture')";
      stmt.executeUpdate(sql);
      sql = "INSERT INTO stu VALUES(103, 'Sumit', 'Mittal','MSC')";
      stmt.executeUpdate(sql);
      System.out.println("Inserted records into the table...");

System.out.println("Updating a query.....");
String query="update stu set fname='Riya' where id=103";
stmt.executeUpdate(query);
System.out.println("Database updated Successfully");
}
```

```
catch (SQLException e) {
        e.printStackTrace();
     }
  }
}
```

OUTPUT

```
java JDBCExample
Inserting records into the table...
Inserted records into the table...
Updating a query.....
Database updated Successfully
```

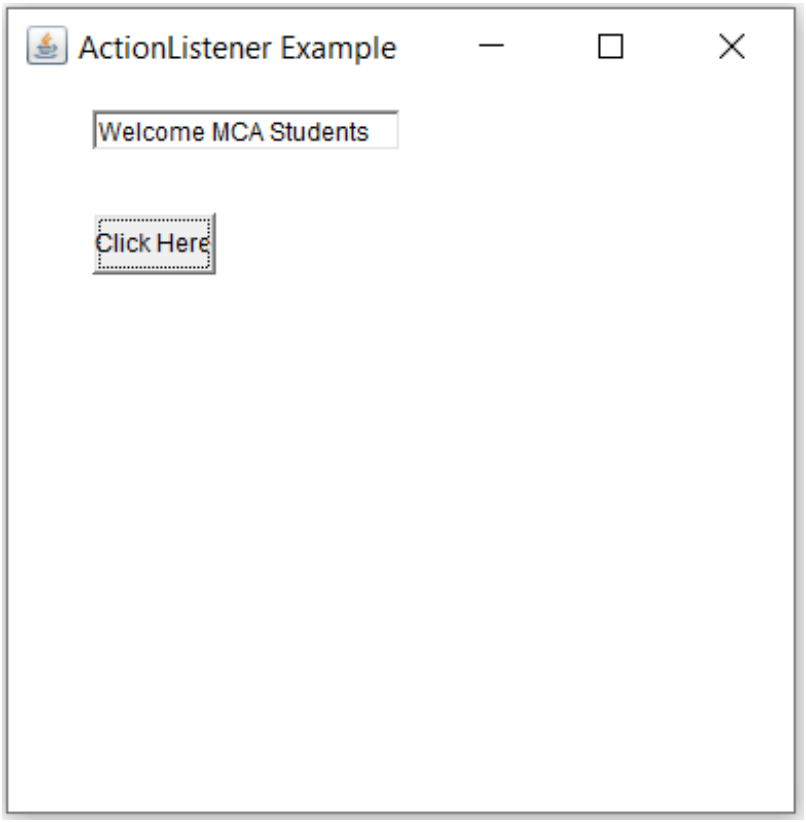
Mysql output

```
select * from stu;
+------+-------+--------+-------------+
| id   | fname | lname  | deg         |
+------+-------+--------+-------------+
|  100 | Zara  | Ali    | BCA         |
|  101 | abc   | xyz    | BCS         |
|  102 | Zaid  | Khan   | Agriculture |
|  103 | Riya  | Mittal | MSC         |
+------+-------+--------+-------------+
4 rows in set (0.02 sec)
```

19. WRP of button click which implementing ActionListener interface display lable as “Welcome MCA students”

```
import java.awt.*;
import java.awt.event.*;
public class ActionListenerExample {
public static void main(String[] args) {
    Frame f=new Frame("ActionListener Example");
    final TextField tf=new TextField();
    tf.setBounds(50,50, 150,20);
    Button b=new Button("Click Here");
    b.setBounds(50,100,60,30);

    b.addActionListener(new ActionListener(){
    public void actionPerformed(ActionEvent e){
          tf.setText("Welcome MCA Students");
    }
    });
    f.add(b);f.add(tf);
    f.setSize(400,400);
    f.setLayout(null);
    f.setVisible(true);
}
}
```

OUTPUT



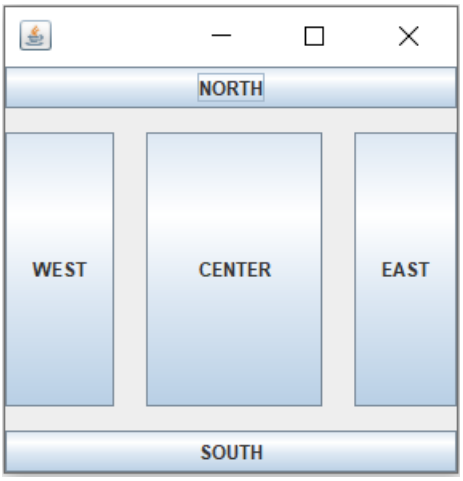
20. Write program of any two Layout Managers JAVA

BorderLayoutExample.java

```
import java.awt.*;
import javax.swing.*;
public class BorderLayoutExample
{
JFrame jframe;

BorderLayoutExample()
{
   jframe = new JFrame();

   JButton btn1 = new JButton("NORTH");
   JButton btn2 = new JButton("SOUTH");
   JButton btn3 = new JButton("EAST");
   JButton btn4 = new JButton("WEST");
   JButton btn5 = new JButton("CENTER");

   jframe.setLayout(new BorderLayout(20, 15));
   jframe.add(btn1, BorderLayout.NORTH);
   jframe.add(btn2, BorderLayout.SOUTH);
   jframe.add(btn3, BorderLayout.EAST);
   jframe.add(btn4, BorderLayout.WEST);
   jframe.add(btn5, BorderLayout.CENTER);
   jframe.setSize(300,300);
   jframe.setVisible(true);
}

public static void main(String argvs[])
{
   new BorderLayoutExample();
```

```
}
}
```

OUTPUT



GridLayoutExample.java

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

public class GridLayoutExample
{
JFrame frameObj;

GridLayoutExample()
{
frameObj = new JFrame();
JButton btn1 = new JButton("1");
JButton btn2 = new JButton("2");
JButton btn3 = new JButton("3");
JButton btn4 = new JButton("4");
JButton btn5 = new JButton("5");
JButton btn6 = new JButton("6");
JButton btn7 = new JButton("7");
JButton btn8 = new JButton("8");
```

```
JButton btn9 = new JButton("9");

frameObj.add(btn1); frameObj.add(btn2); frameObj.add(btn3);
frameObj.add(btn4); frameObj.add(btn5); frameObj.add(btn6);
frameObj.add(btn7); frameObj.add(btn8); frameObj.add(btn9);

frameObj.setLayout(new GridLayout());


frameObj.setSize(300, 300);
frameObj.setVisible(true);
}

public static void main(String argvs[])
{
new GridLayoutExample();
}
}
```

OUTPUT