# JAVA PROGRAMS

- **Constructor Demo**

```
class Add{
int a,b,c;
Add(){
a=20;
b=30;
}
void add(){
c=a+b;
}
void display(){
System.out.println("the addition is:"+c);
}
}
public class ConstructorDemo{
public static void main(String[] args){
Add a1=new Add();
a1.add();
a1.display();
}
}
```

Output :

```
the addition is:50
```

- **Abstract Demo**

```
abstract class Shape{
int l,b,h;
Shape()
```

```
{
l=b=h=-1;
}
abstract void CalVol();
}
class Box extends Shape{
Box(int l,int b,int h)
{
this.l=l;
this.b=b;
this.h=h;
}
void CalVol()
{
System.out.println("the volume of box is :"+l*b*h);
}
}
public class AbstractDemo
{
public static void main(String[] args)
{
Box b=new Box(10,20,30);
b.CalVol();
}
}
```

Output:

```
the volume of box is :6000
```

- **Design an application whether the username and password are valid or not.**

```
import java.util.*
public class Application
{
        public static void main(String[] args) {
                String Username,Password,college_mail,htno;
                college_mail="2103A54017@sru.edu.in";
                htno="2103A54017";
      System.out.println("enter username:");
                Scanner s1 =new Scanner(System.in);
                Username=s1.nextLine();
                System.out.println("enter password:");
                Password=s1.nextLine();
                String cm=college_mail.toLowerCase();
                String ht=htno.toUpperCase();
                if ((cm.equals(Username)) &&  (ht.equals(Password)))
                  System.out.println("valid");
               else
```

```
                System.out.println(" not valid");
            }
        }
```

Output:


- **Array Demo**

```
public class ArrayDemo
{
public static void main(String[] args)
{
int[] a=new int[]{1,2,3,4,5};
for(int i=0;i<a.length;i++)
  System.out.println(a[i]+" ");
int[] b=new int[10];
for(int i=0;i<b.length;i++)
    b[i]=i+11;
for(int i=0;i<b.length;i++)
  System.out.println(b[i]+" ");
}
}
```

Output:

❖ **Find the average and highest Score from given scores.**

```
import java.util.*;
public class AverageArray {
   public static void main(String[] args) {
      //write your code here
      Scanner in=new Scanner(System.in);
      String scores;
      scores=in.nextLine();
      String a[]=(scores.split("\\s"));
      int i,m_score=-1,tot_score=0;
      int[] score=new int[a.length];
      double avg_score=0;
      for(i=0;i<a.length;i++)
      {
         score[i]=Integer.parseInt(a[i]);
      }
      for(i=0;i<a.length;i++)
      {
         if(m_score<score[i])
         {
            m_score=score[i];
         }
         tot_score+=score[i];
      }
      avg_score=tot_score/(a.length);
      System.out.println("Highest Score is: "+m_score);
      System.out.println("Average Score is: "+avg_score);
   }
}
```

Output:

```
20 22 12
Highest Score is: 22
Average Score is: 18.0
```

- Find the average salary of given employees according to their salaries.

```
import java.util.*;


class Employee
{
   //write your code here
   String name;
   int age,count=0;
   double salary,totSalary=0;
   void setName(String name){
      this.name=name;
   }
   void setAge(int age){
      this.age=age;
      if(age>30){
         count=count+1;
      }
   }
   void setSalary(double salary){
      this.salary=salary;
      if(this.age>30){
         totSalary=salary;
      }
   }
   double sum(Employee e2,Employee e3,Employee e4){
      if(e2.age>30){
         totSalary+=e2.salary;
         count++;
      }
```

```
        if(e3.age>30){
            totSalary+=e3.salary;
            count++;
        }
        if(e4.age>30){
            totSalary+=e4.salary;
            count++;
        }
        if(count>0){
            return (totSalary/count);
        }
        else{
            return 0.0;
        }
    }
}

public class Averagesalary {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);
        String name = s.next();
        int age = s.nextInt();
        double salary = s.nextDouble();
        int cnt = 0;
        Employee e1 = new Employee();
        e1.setName(name);
        e1.setAge(age);
        e1.setSalary(salary);
        String name2 = s.next();
        int age2 = s.nextInt();
        double salary2 = s.nextDouble();
        Employee e2 = new Employee();
        e2.setName(name2);
        e2.setAge(age2);
```

```
        e2.setSalary(salary2);
        String name3 = s.next();
        int age3 = s.nextInt();
        double salary3 = s.nextDouble();
        Employee e3 = new Employee();
        e3.setName(name3);
        e3.setAge(age3);
        e3.setSalary(salary3);
        String name4 = s.next();
        int age4 = s.nextInt();
        double salary4 = s.nextDouble();
        Employee e4 = new Employee();
        e4.setName(name4);
        e4.setAge(age4);
        e4.setSalary(salary4);
        //write your code here
        System.out.println("The average salary is: "+e1.sum(e2,e3,e4));
    }
}
```

Output:

```
abcd 20 20000
hijk 19 23000
ioup 23 40000
wert 34 45000
The average salary is: 45000.0
```

- **Find number of characters and words in a String**

```
import java.util.*;
class ProblemSolution {
    public void solution(String s){
        //write your code here
        //length method used to print the characters in string
        System.out.println("Number of characters are: "+ s.length());
        //create array and separated by space
        String arr[]=s.split("\\s");
```

```
        //length refers to arrays and printd number of words
        System.out.println("Number of Words are: " +arr.length);
    }
}

public class Characters {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);//to take input from user
        String S = s.nextLine();
        ProblemSolution problemSolution = new ProblemSolution();//creation of object
        problemSolution.solution(S);//calling  the method
    }
}
```

Output:

```
hi hello namaste
Number of characters are: 16
Number of Words are: 3
```

- **Input from Command Line Demo**

```
class Student
{
String name,addr;
int age;
Student(String n,int a,String add)
{
name=n;
age=a;
addr=add;
}
void disp()
{
System.out.println("name:"+name);
System.out.println("age:"+age);
System.out.println("address:"+addr);
```

```
}
}
public class CommandLinedemo
{
public static void main(String[] args)
{
String n=args[0];
int a=Integer.parseInt(args[1]);
String addr=args[2];
Student s1=new Student(n,a,addr);
s1.disp();
}
}
```

Output:

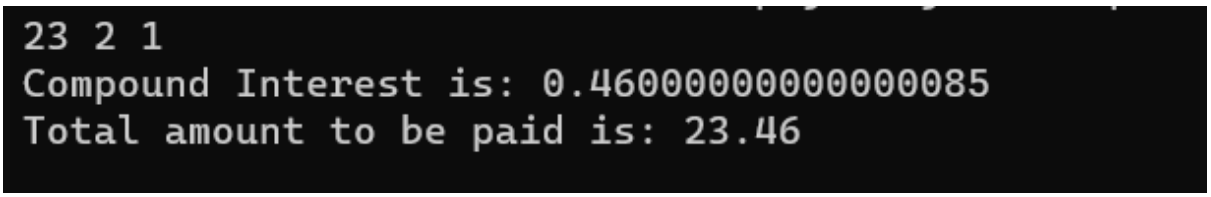
```
C:\oopc>java CommandLinedemo abcd 20 wgl
name:abcd
age:20
address:wgl
```

- **Find the Compound Interest**

```
import java.util.*;


class ProblemSolution{
   // write your code here
   int i;
   double ci=1,r,t,p;
   ProblemSolution(int p,double r,int t)
   {
      String ex=Integer.toString(p);
      this.p=p;
      this.r=r;
      this.t=t;
   }
```

```
    void calculateInterest()
    {
        for(i=0;i<t;i++)
        {
            ci*=(1+(r/100));
        }
        System.out.println("Compound Interest is: "+((ci*p)-p));
        System.out.println("Total amount to be paid is: "+(ci*p));
    }
}

public class CompundInterest {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);
        int p = s.nextInt();
        double r = s.nextDouble();
        int t = s.nextInt();
        ProblemSolution p1 = new ProblemSolution(p, r, t);
        p1.calculateInterest();
    }
}
```

Output:




- **Checked Exception Demo**

```
public class CheckedException
{
public static void main(String[] args) throws InterruptedException
{
System.out.println("hi");
Thread.sleep(3000);
```

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

Output:

```
hi
bye
```

- **Given two arrays for arrival and departure dates of same size N, find whether advance bookings is possible or not. A hotel manager has to process N advance bookings.**
  **His hotel has K rooms .Bookings contain an arrival date and departure date .He wants to find out whether there are enough rooms in the hotel to satisfy the demand.**

```
import java.util.*;
public class Bookings {
   public static void main(String args[]) {
      Scanner sc = new Scanner(System.in);

      // Read the number of bookings (N)
      int N = sc.nextInt();

      // Read the arrival dates
      int[] arrivalDates = new int[N];
      for (int i = 0; i < N; i++) {
         arrivalDates[i] = sc.nextInt();
      }

      // Read the departure dates
      int[] departureDates = new int[N];
      for (int i = 0; i < N; i++) {
         departureDates[i] = sc.nextInt();
      }

      // Read the number of rooms in the hotel (K)
      int K = sc.nextInt();

      // Check if bookings are possible
```

```
        String result = isBookingPossible(N, arrivalDates, departureDates, K);
        System.out.println(result);

        sc.close();
    }

    public static String isBookingPossible(int N, int[] arrivalDates, int[] departureDates, int K) {
        // Initialize an array to represent room availability for each date (1 to 30)
        int[] roomsAvailable = new int[31];

        // Loop through the bookings and update room availability
        for (int i = 0; i < N; i++) {
            for (int date = arrivalDates[i]; date <= departureDates[i]; date++) {
                roomsAvailable[date]++;
                // If at any point rooms required exceed available rooms, return 'No'
                if (roomsAvailable[date] > K) {
                    return "No";
                }
            }
        }

        // If all bookings were possible, return 'Yes'
        return "Yes";
    }
}
```

Output:

```
3
1 2 3
4 3 2
1
No
```

- **Constructor Demo**

```
class Add{
int a,b,c;
Add(){
a=20;
b=30;
}
void add(){
c=a+b;
}
void display(){
System.out.println("the addition is:"+c);
}
}
public class ConstructorDemo{
public static void main(String[] args){
Add a1=new Add();
a1.add();
a1.display();
}
}
```

Output :-

```
the addition is:50
```

- **ConstructorOverloadingdemo**

```
class Student{
String htno,name,addr,phno,email;
Student(String name,String addr,String phno){
this.htno="1234";
```

```
this.name=name;
this.addr=addr;
this.phno=phno;
this.email="abc@m";
}
Student(String htno,String name,String addr,String phno,String email){
this(name,addr,phno);
this.htno=htno;
this.email=email;
}
void show(){
System.out.println("htno:"+ htno);
System.out.println("name:"+ name);
System.out.println("addr:"+ addr);
System.out.println("phno:"+ phno);
System.out.println("email id:"+ email);
}
}
public class ConstructorOverloadingdemo{
public static void main(String[] args){
Student s1=new Student("abcd","wgl","xxxxxxx");
s1.show();
Student s2=new Student("5678","abcde","hyd","9xxxxx","abcde@s");
s2.show();
}
}
```

Output:


- **CurrentThreadDemo**

```
public class CurrentThreadDemo {
	public static void main(String[] args) {
		// TODO Auto-generated constructor stub
		Thread t1=Thread.currentThread();
		t1.setName("abcd");
		t1.setPriority(7);
		System.out.println("Name of the Thread is:"+t1.getName());
		System.out.println("Priority of Thread is:"+t1.getPriority());
		//System.out.println(10/0);
		}
}
```

Output:

```
Name of the Thread is:abcd
Priority of Thread is:7
```

14. CustomException

```
import java.util.*;
//write your code here
class InvalidNameException extends Exception{
   InvalidNameException(){
```

```
        super();
    }
}
class InvalidAgeException extends Exception{
    InvalidAgeException(){
        super();
    }
}
class Employee{
    String name;
    int age;
    int ok=1;
    void setName(String name) throws InvalidNameException{
        try{
            int n = Integer.parseInt(name);
        }
        catch(Exception e){
            ok=0;
        }
        if(ok==1){
            throw new InvalidNameException();
        }
        else{
            this.name=name;
        }
    }
    void setAge(int age) throws InvalidAgeException{
```

```
        if(age>50){
            throw new InvalidAgeException();
        }
        else{
            this.age=age;
        }
    }
}

class CustomException{
        public static void main(String[] args){
                Scanner sc = new Scanner(System.in);
                String name = sc.nextLine();
                int age = Integer.parseInt(sc.nextLine());
        //String age = sc.nextLine();
                Employee employee = new Employee();
                boolean error = false;
                try{
                        employee.setName(name);
                }catch(InvalidNameException e){
                        System.out.println("Invalid Name");
                        error = true;
                }
                try{
                        employee.setAge(age);
                }catch(InvalidAgeException e){
                        System.out.println("Invalid Age");
```

```
                error = true;
            }
            if(!error){
                System.out.println(employee.name+" "+employee.age);
            }
        }
}
```

Output:

```
abcd
21
abcd 21
```

- **Display**

```
public class Display{
public static void main(String[] args){
int n=5;
if(n==1)
System.out.println("Hello");
else if (n==2)
System.out.println("How are you");
else if(n==3)
System.out.println("Welcome to java lab");
else
System.out.println("error msg");
}
}
```

Output:

```
error msg
```

- **DriverMain**

```
import java.util.*;
class ProblemSolution {
    String Name,Address,Phno,htno,mail;
    ProblemSolution(String Name,String Address,String Phno){
        this.Name=Name;
        this.Address=Address;
        this.Phno=Phno;
    }
    ProblemSolution(String htno,String Name,String Address,String Phno,String mail){
        this(Name,Address,Phno);
        this.htno=htno;
        this.mail=mail;
    }
    void display(){
        System.out.println("HTNO: "+htno);
        System.out.println("Name: "+Name);
        System.out.println("Address: "+Address);
        System.out.println("Phone Number: "+Phno);
        System.out.println("E-Mail ID: "+mail);
    }
}
public class DriverMain {
    public static void main(String[] args) {
```

```
        Scanner s = new Scanner(System.in);
        String htno = s.nextLine();
        String name = s.nextLine();
        String addr = s.nextLine();
        String phno = s.nextLine();
        String mail = s.nextLine();
        ProblemSolution problemSolution = new ProblemSolution(name, addr, phno);
        problemSolution.display();
        ProblemSolution problemSolution1 = new ProblemSolution(htno, name, addr, phno, mail);
        problemSolution1.display();
    }
}
```

Output:

```
1234
abcd
wgl
xxxxxxxx
abc@gmail.com
HTNO: null
Name: abcd
Address: wgl
Phone Number: xxxxxxxx
E-Mail ID: null
HTNO: 1234
Name: abcd
Address: wgl
Phone Number: xxxxxxxx
E-Mail ID: abc@gmail.com
```

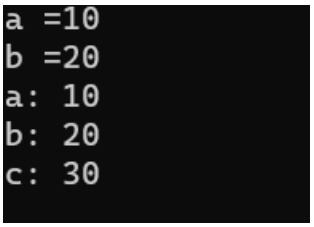
- **DynamicMethodDispatchDemo**

```
class A
{
int a,b;
A(int a,int b)
```

```
{
this.a=a;
this.b=b;
}
void show()
{
System.out.println("a ="+a);
System.out.println("b ="+b);
}
}
class B extends A{
int c;
B(int a,int b,int c)
{
super(a,b);
this.c=c;
}
void show()
{
System.out.println("a: "+a);
System.out.println("b: "+b);
System.out.println("c: "+c);
}
}
public class DynamicMethodDispatchDemo
{
public static void main(String[] args)
```

```
{
A subobj;
subobj =new A(10,20);
subobj.show();
subobj=new B(10,20,30);
subobj.show();
}
}
```

Output:




- **EvenOdd**

```
public class EvenOdd{
public static void main(String[] args){
int n=23;
if (n%2==0)
System.out.println("even number");
else
System.out.println("odd number");
}
}
```

Output:

```
odd number
```

- **ExceptionHandling2**

```
import java.util.*;

public class ExceptionHandling2

{

public static void main(String[] args)

{

int a,b,c=0;

try

{

a=Integer.parseInt(args[0]);

b=Integer.parseInt(args[1]);

c=a/b;

}

catch(ArrayIndexOutOfBoundsException aibe)

{

System.out.println("the values you have not specified in CL");

a=20;

b=10;

c=a/b;

}

catch(ArithmeticException ae)

{

System.out.println("denominator should not be zero");

a=20;

b=10;
```

```
c=a/b;

}

System.out.println("division is:"+c);

}

}
```

Output:

```
the values you have not specified in CL
division is:2
```

- **ExceptionHandling3**

```
import java.util.*;

public class ExceptionHandling3

{

public static void main(String[] args)

{

int a,b,c=0;

try

{

a=Integer.parseInt(args[0]);

b=Integer.parseInt(args[1]);

c=a/b;

}

catch(ArrayIndexOutOfBoundsException | ArithmeticException e)

{

e.printStackTrace();

a=20;
```

```
b=10;

c=a/b;

}

System.out.println("division is:"+c);

}

}
```

Output:

```
java.lang.ArrayIndexOutOfBoundsException: Index 0 out of bounds for length 0
        at ExceptionHandling3.main(ExceptionHandling3.java:9)
division is:2
```

- **ExceptionHandling4**

```
import java.util.*;

public class ExceptionHandling4

{

public static void main(String[] args)

{

int a,b,c=0;

try

{

a=Integer.parseInt(args[0]);

b=Integer.parseInt(args[1]);

c=a/b;

}

catch(Exception e)

{

e.printStackTrace();

System.out.println(e);

a=20;
```

```
b=10;

c=a/b;

}

System.out.println("division is:"+c);

}

}
```

Output:

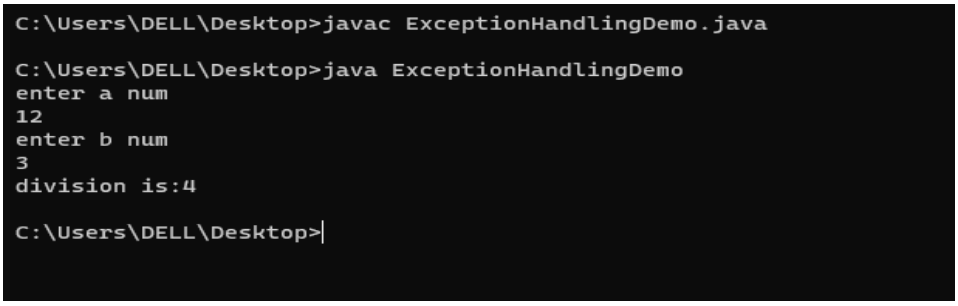
```
C:\Users\DELL\Desktop>javac ExceptionHandling4.java

C:\Users\DELL\Desktop>java ExceptionHandling4
java.lang.ArrayIndexOutOfBoundsException: Index 0 out of bounds for length 0
        at ExceptionHandling4.main(ExceptionHandling4.java:9)
java.lang.ArrayIndexOutOfBoundsException: Index 0 out of bounds for length 0
division is:2
```

- **ExceptionHandlingDemo**

```
import java.util.*;

public class ExceptionHandlingDemo

{

public static void main(String[] args)

{

int a,b,c=0;

Scanner in=new Scanner(System.in);

System.out.println("enter a num");

a=in.nextInt();

System.out.println("enter b num");

b=in.nextInt();

try

{

c=a/b;

}
```

```
catch(ArithmeticException ae)
{
System.out.println("denominator should not be zero");
System.out.println("enter b value again");
b=in.nextInt();
c=a/b;
}
System.out.println("division is:"+c);
}
}
```

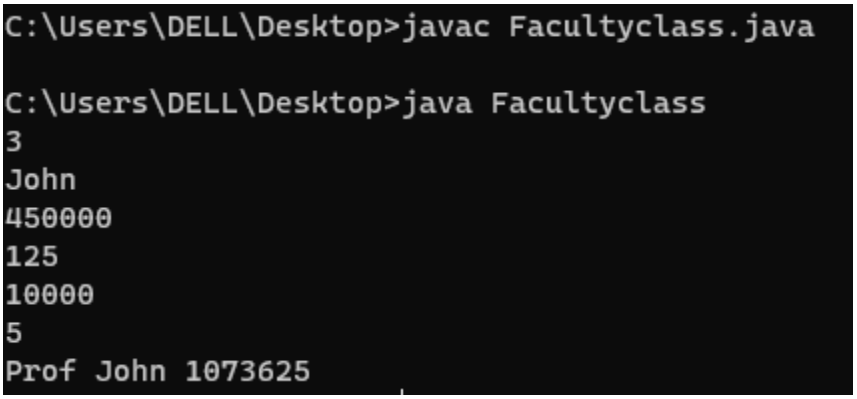
Output:




- **ExceptionTypeDemo**

```
public class ExceptionTypeDemo
{
public static void main(String[] args)
{
String s="abc";
int i=Integer.parseInt(s);
String s1=null;
System.out.println(s1.length());
}
}
```

Output:

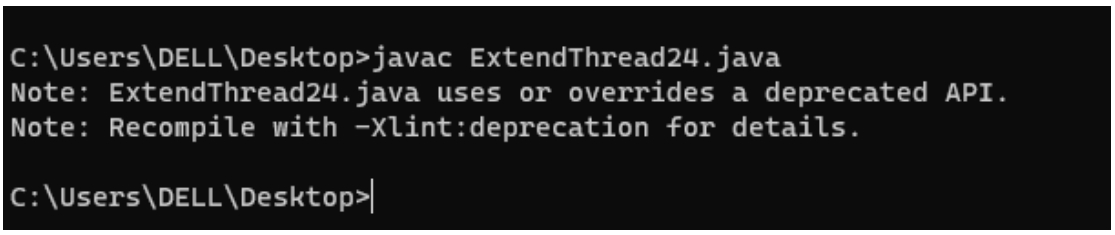



- **ExtendThread**

```
class NewThread extends Thread
{
public void run()
{
try
{
System.out.println("Thread "+" "+ Thread.currentThread().getId()+" "+" is running");
}
catch(Exception e)
{
System.out.println("Exception is caught");
}
}
}
public class ExtendThread
{
public static void main(String[] args)
{
for(int i=0;i<10;i++)
```

```
{
NewThread n=new NewThread();
n.start();
}
}
}
```

Output:




- **Facultyclass**

```
import java.util.*;
class Faculty{
   String name;
   int basic;
   double salary;
   Faculty(String name,int basic)
   {
      this.name=name;
      this.basic=basic;
   }
   public void getDetails()
   {
      System.out.print(name+" "+salary);
   }
```

```
    public double getSalary()
    {
        salary=basic*100;
        return salary;
    }
}
class AssistantProfessor extends Faculty{
    int DA;
    AssistantProfessor(String name,int basic,int DA)
    {
        super(name,basic);
        this.DA=DA;
    }
    public double getSalary()
    {
        salary=basic+((basic*DA)/100);
        return salary;
    }
    public void getDetails()
    {
         System.out.print("AssiProf"+" "+name+" "+(int)salary);
    }
}
class AssociateProfessor extends AssistantProfessor{
    int MedAllowance;
    AssociateProfessor(String name,int basic,int DA,int MedAllowance){
        super(name,basic,DA);
```

```
        this.MedAllowance=MedAllowance;
    }
    public double getSalary()
    {
        salary=basic+((basic*DA)/100)+MedAllowance;
        return salary;
    }
    public void getDetails()
    {
        System.out.print("AssoProf"+" "+name+" "+(int)salary);
    }
}
class Professor extends AssociateProfessor{
    int OtherAllowance;
    Professor(String name,int basic,int DA,int MedAllowance,int OtherAllowance)
    {
        super(name,basic,DA,MedAllowance);
        this.OtherAllowance=OtherAllowance;
    }
    public double getSalary(){
        salary = super.getSalary();
        salary += ((salary * OtherAllowance)/100);
        return salary;
    }
    public void getDetails()
    {
        System.out.print("Prof"+" "+name+" "+(int)salary);
```

```
    }
}
public class Facultyclass {
    public static void main(String[] args) {
        //Write your code here
        int ch,basic,DA,MedAllowance,OtherAllowance;
        String name;
        Scanner in=new Scanner(System.in);
        ch=in.nextInt();
        if(ch==3)
        {
            name = in.next();
            basic = in.nextInt();
            DA=in.nextInt();
            MedAllowance=in.nextInt();
            OtherAllowance=in.nextInt();
            Professor p=new Professor(name,basic,DA,MedAllowance,OtherAllowance);
            p.getSalary();
            p.getDetails();
        }
        else if(ch==1)
        {
            name=in.next();
            basic=in.nextInt();
            DA=in.nextInt();
            AssistantProfessor ap=new AssistantProfessor(name,basic,DA);
            ap.getSalary();
```

```
            ap.getDetails();
        }
        else if(ch==2){
            name=in.next();
            basic=in.nextInt();
            DA=in.nextInt();
            MedAllowance=in.nextInt();
            AssociateProfessor acp=new AssociateProfessor(name,basic,DA,MedAllowance);
            acp.getSalary();
            acp.getDetails();
        }

    }
}
```

Output:

```
C:\Users\DELL\Desktop>javac Facultyclass.java

C:\Users\DELL\Desktop>java Facultyclass
3
John
450000
125
10000
5
Prof John 1073625
```

- **FinalClassDemo**

```
final class A
{
int a;
void show()
{
```

```
System.out.println("a="+a);

}

}

class B extends A //error-->class a cannot be inherited to b

{

int b;

void show()

{

System.out.println("a and b are"+a+" ,"+b);

}

}

public class FinalClassDemo

{

public static void main(String[] args)

{

B obj=new B();

obj.show();

}

}
```

Output:

```
C:\Users\DELL\Desktop>javac FinalClassDemo.java
FinalClassDemo.java:9: error: cannot inherit from final A
class B extends A //error-->class a cannot be inherited to b
                  ^
1 error

C:\Users\DELL\Desktop>
```

- **FinalDemo**

```
class Add
```

```
{
final int a;
Add()
{
a=10;
}
void add()
{
//a=a+1; this is an error as we are assigning a value to final variable
System.out.println(a);
}
}
public class FinalDemo
{
public static void main(String[] args)
{
Add a=new Add();
a.add();
}
}
```

Output:

```
C:\Users\DELL\Desktop>javac FinalDemo.java

C:\Users\DELL\Desktop>java FinalDemo
10
```

- **FinalMethodDemo**

```
class A
{
```

```
int a;
A()
{
a=10;
}
final void show()
{
System.out.println("a="+a);
}
}
class B extends A
{
int b;
B()
{
a=20;
b=30;
}
//void show()-->error generated due to declaration of show() in a as final
void showB()
{
System.out.println("a and b are"+a+" ,"+b);
}
}
public class FinalMethodDemo
{
public static void main(String[] args)
```

```
{
B obj=new B();
obj.showB();
}
}
```

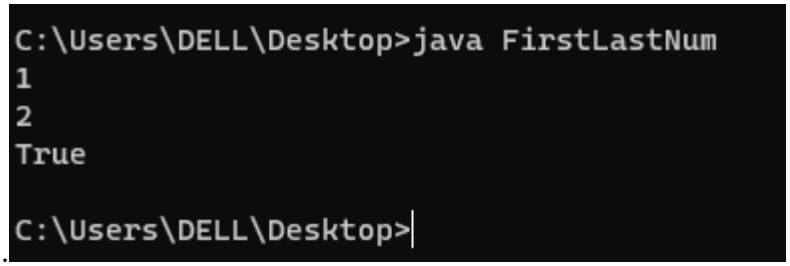
Output:

```
C:\Users\DELL\Desktop>javac  FinalMethodDemo.java

C:\Users\DELL\Desktop>java  FinalMethodDemo
a and b are20 ,30
```

- **FirstLastNum**

```
import java.util.*;


public class FirstLastNum {
   public static void main(String[] args) {
       // write your code here
       int n;
       Scanner in=new Scanner(System.in);
       n=in.nextInt();
       int[] a=new int[n];
       for(int i=0;i<a.length;i++)
          a[i]=in.nextInt();
       if(a[0]==a[n-1])
          System.out.println("True");
       else
          System.out.println("False");
   }
}
```

Output:

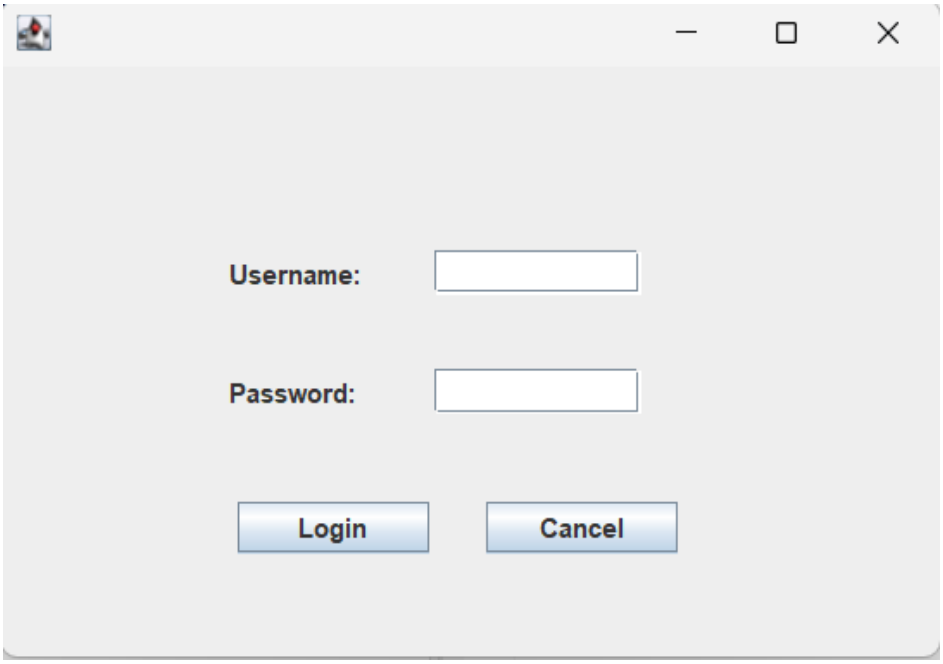

C:\Users\DELL\Desktop>java FirstLastNum
1
2
True
C:\Users\DELL\Desktop>

❖ **FIRST PAGE**

```
package com.rcinfosoftsolutions;

import java.awt.*;

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

public class FirstPage {

	private JFrame frame;
	private JTextField txtUname;
	private JPasswordField txtPwd;
	private String uname, pwd;

	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
					FirstPage window = new FirstPage();
					window.frame.setVisible(true);
				} catch (Exception e) {
					e.printStackTrace();
				}
			}
		});
	}

	/**
	 * Create the application.
	 */
	public FirstPage() {
		initialize();
	}

	/**
	 * Initialize the contents of the frame.
	 */
	private void initialize() {
		frame = new JFrame();
		frame.setBounds(100, 100, 450, 300);
		frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		frame.getContentPane().setLayout(null);
```

```
		JLabel lblNewLabel = new JLabel("Username:");
		lblNewLabel.setBounds(106, 85, 71, 14);
		frame.getContentPane().add(lblNewLabel);

		txtUname = new JTextField();
		txtUname.setBounds(201, 82, 96, 20);
		frame.getContentPane().add(txtUname);
		txtUname.setColumns(10);

		JLabel lblPassword = new JLabel("Password:");
		lblPassword.setBounds(106, 138, 71, 14);
		frame.getContentPane().add(lblPassword);

		txtPwd = new JPasswordField();
		txtPwd.setBounds(201, 135, 96, 20);
		frame.getContentPane().add(txtPwd);

		JButton btnLogin = new JButton("Login");
		btnLogin.addActionListener(new ActionListener() {
			public void actionPerformed(ActionEvent e) {
				uname = txtUname.getText();
				pwd = txtPwd.getText();
				if(uname.equalsIgnoreCase("Chythu") && pwd.equals("Chythu")) {
					SecondPage s = new SecondPage(uname);
					frame.setVisible(false);
				}
				else {
					JOptionPane.showMessageDialog(btnLogin, "Login failed");
				}
			}
		});
		btnLogin.setBounds(110, 194, 89, 23);
		frame.getContentPane().add(btnLogin);

		JButton btnCancel = new JButton("Cancel");
		btnCancel.addActionListener(new ActionListener() {
			public void actionPerformed(ActionEvent e) {
				txtUname.setText(null);
				txtPwd.setText(null);
			}
		});
		btnCancel.setBounds(225, 194, 89, 23);
		frame.getContentPane().add(btnCancel);
	}
}
```

Output:




- **Greatest**

```
public class Greatest{
public static void main(String[] args){
int a,b,c;
a=10;
b=20;
c=3;
if (a>b && a>c)
System.out.println("a is bigger");
else if(b>c)
System.out.println("b is bigger");
else
System.out.println("c is bigger");
}
}
```

Output:


- **Hello World**

```
public class Helo
```

```
{
        public static void main(String[] args)
        {
                System.out.println("hello world");
        }
}
```

Output :

```
hello world
```

- **Hierachial Inheritance Demo**

```
class Vehicle1{
int now,seats,mileage,speed,hp;
   public void display()
   {
   System.out.println("no of wheels:"+now);
   System.out.println("no of seats:"+seats);
   System.out.println("Mileage:"+mileage);
   System.out.println("Max Speed:"+speed);
   System.out.println("Horse power:"+hp);
   }
}
class Bike1 extends Vehicle1{
Bike1(int now,int seats,int mileage,int speed,int hp){
this.now=now;
this.seats=seats;
this.mileage=mileage;
this.speed=speed;
this.hp=hp;
}
}
class Car extends Vehicle1{
Car(int now,int seats,int mileage,int speed,int hp){
this.now=now;
```

```
this.seats=seats;
this.mileage=mileage;
this.speed=speed;
this.hp=hp;
}
}
public class HierachialInheritenceDemo{
public static void main(String[] args){
Bike1 b1=new Bike1(2,2,45,120,120);
Car c1=new Car(4,5,60,140,140);
b1.display();
c1.display();
}
}
```

Output:


- **Hierachial**

```
import java.util.*;

class Car
{
    String color;
    String model;

    String getColor()
```

```
        {
            return color;
        }

        String getModel()
        {
            return model;
        }
};
class BMW extends Car{
        int wheels;
    BMW(String model,String color,int wheels)
    {
        this.model=model;
        this.color=color;
        this.wheels=wheels;
    }
         int getAlloyWheelCount()
        {
            return wheels;
        }
    }
class Honda extends Car{
    int wheels;
    Honda(String model,String color,int wheels)
    {
        this.model=model;
        this.color=color;
        this.wheels=wheels;
    }
      int getNormalWheelCount()
        {
            return wheels;
        }
```

```
    }
public class Hierarchial {
    static void display(Car car,int wheels){
        System.out.println(car.getModel()+" "+car.getColor()+" "+wheels);
    }
    public static void main(String[] args) {
        Scanner in= new Scanner(System.in);
        String line;
        String model;
        String color;
        int wheels;

        line = in.nextLine();
        String[] tokens = line.split(" ");

        model = tokens[0];
        color = tokens[1];
        wheels = Integer.parseInt(tokens[2]);
        BMW bmw=new BMW(model,color,wheels);

        line = in.nextLine();
        tokens = line.split(" ");

        model = tokens[0];
        color = tokens[1];
        wheels = Integer.parseInt(tokens[2]);
        Honda honda=new Honda(model,color,wheels);

        display(bmw,bmw.getAlloyWheelCount());
        display(honda,honda.getNormalWheelCount());
    }
}
```

Output:

```
BMW1Series5-door Red 4
i-VTECS1497 Black 6
```

```
BMW3SeriesGT white 8
i-VTECSV1497 Gray 10
```

- **HomePage**

```
import java.awt.EventQueue;

import javax.swing.JFrame;
import javax.swing.JLabel;
import java.awt.Font;
import javax.swing.SwingConstants;

public class HomePage {

	private JFrame frame;
	private String name;

	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
					HomePage window = new HomePage();
					window.frame.setVisible(true);
				} catch (Exception e) {
					e.printStackTrace();
				}
			}
		});
	}

	/**
	 * Create the application.
	 */
	public HomePage() {
		initialize();
	}
	public HomePage(String name) {
		this.name = name;
		initialize();
	}

	/**
	 * Initialize the contents of the frame.
	 */
	private void initialize() {
```

```
            frame = new JFrame();
            frame.setBounds(100, 100, 450, 300);
            frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
            frame.getContentPane().setLayout(null);
            frame.setVisible(true);
            JLabel lblWish = new JLabel("");
            lblWish.setHorizontalAlignment(SwingConstants.CENTER);
            lblWish.setFont(new Font("Times New Roman", Font.BOLD, 18));
            lblWish.setBounds(10, 48, 416, 35);
            frame.getContentPane().add(lblWish);
            System.out.println(name);
            lblWish.setText("Hello Mr./Ms. " + name);
        }

}
```

Output:


- **InsertatN**

```
import java.util.*;

public class DriverMain {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

        int n=sc.nextInt();

        int a[]=new int[]{0,0,0,0,0,0,0,0,0,0};

        //write your code here

        System.out.println("\nInput List is ");

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

            a[i]=sc.nextInt();
```

```
        for(int i=0;i<n;i++)
            System.out.print(a[i]+" ");
        int pos = sc.nextInt();
        int data = sc.nextInt();
            if(n<9){
                for(int i=pos;i<n+1;i++){
                    int temp=a[i];
                    a[i]=data;
                    data=temp;
                    if(i==9){
                        break;
                    }
                }
                if(n<9){
                    n+=1;
                }
            }
            else{
                a[9]=data;
            }
        System.out.println("\nOutput List is ");
        for(int i=0;i<n;i++)
            System.out.print(a[i]+" ");
    }
}
```

Output:

```
Input List is
1 2 3 4 5 6 7 8 9 10
Output List is
1 2 3 4 5 6 7 8 9 99
```

```
Input List is
1 2 3 4 5 6 7
Output List is
1 2 3 4 5 6 99 7
```

- **InterfaceDemo**

```
interface Number
{
int a=10,b=20;
void add(int a,int b);
void sub(int a,int b);
void mul(int a,int b);
void div(int a,int b);
}
class NumImp implements Number
{
public void add(int a,int b)
{
System.out.println(a+b);
}
public void sub(int a,int b)
{
System.out.println(a-b);
}
public void mul(int a,int b)
{
```

```
System.out.println(a*b);

}

public void div(int a,int b)

{

System.out.println(a/b);

}

}

public class InterfaceDemo

{

public static void main(String[] args)

{

NumImp n=new NumImp();

n.add(10,20);

n.sub(10,20);

n.mul(10,20);

n.div(10,20);

}

}
```

Output:

```
30
-10
200
0
```

- **JCheckBox Demo**

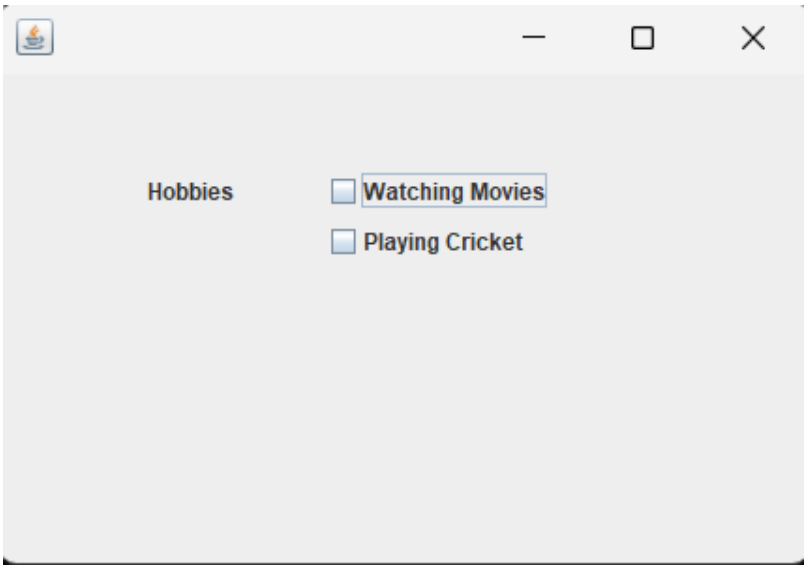
```
import java.awt.EventQueue;

import java.awt.event.ItemEvent;

import java.awt.event.ItemListener;
```

```
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JCheckBox;
import javax.swing.JButton;

public class JCheckBoxDemo {

	private JFrame frame;
	private String hobbies = "";

	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
					JCheckBoxDemo window = new JCheckBoxDemo();
					window.frame.setVisible(true);
				} catch (Exception e) {
					e.printStackTrace();
				}
			}
		});
	}

	/**
	 * Create the application.
```

```
 */
public JCheckBoxDemo() {
	initialize();
}

/**
 * Initialize the contents of the frame.
 */
private void initialize() {
	frame = new JFrame();
	frame.setBounds(100, 100, 450, 300);
	frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
	frame.getContentPane().setLayout(null);

	JLabel lblNewLabel = new JLabel("Hobbies");
	lblNewLabel.setBounds(79, 53, 49, 14);
	frame.getContentPane().add(lblNewLabel);

	JCheckBox chckbxNewCheckBox = new JCheckBox("Watching Movies");
	chckbxNewCheckBox.setBounds(173, 49, 151, 23);
	chckbxNewCheckBox.addItemListener(new ItemListener() {
		@Override
		public void itemStateChanged(ItemEvent e) {
			// TODO Auto-generated method stub
			hobbies += "Watching Movies";
		}
	});
	frame.getContentPane().add(chckbxNewCheckBox);
```

```
        JCheckBox chckbxNewCheckBox_1 = new JCheckBox("Playing Cricket");
        chckbxNewCheckBox_1.setBounds(173, 75, 151, 23);
        frame.getContentPane().add(chckbxNewCheckBox_1);

        JLabel output = new JLabel("");
        output.setBounds(10, 126, 416, 76);
        output.setText(hobbies);
        frame.getContentPane().add(output);

    }
}
```

Output:




- **JDBC Demo**

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

public class JDBCDemo {
```

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

		//Step-I: Establishing JDBC Connection
		Class.forName("com.mysql.cj.jdbc.Driver");
		Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/sru", "root",
"");

		//Step-II: Creating JDBC Statements
		Statement stmt = con.createStatement();

		//Step-III: Execute SQL Statements
		Scanner in = new Scanner(System.in);
		System.out.print("Enter Student ID: ");
		String sid = in.next();
		System.out.print("Enter Student Name: ");
		String sname = in.next();
		System.out.print("Enter Student Age: ");
		String sage = in.next();
		System.out.print("Enter Student Address: ");
		String saddr = in.next();
		String sql = "insert into student values('"+sid+"', '"+sname+"', '"+sage+"', '"+saddr+"')";
		stmt.executeUpdate(sql);
		String qry = "Select * from student";

		//Step-IV: Get ResultSet
		ResultSet rs = stmt.executeQuery(qry);
		while(rs.next()) {
			System.out.println(rs.getString("sid") + "\t" + rs.getString(2)+ "\t" + rs.getString(3) +
"\t" + rs.getString(4));
		}

		//Step=V: Close Connections
		stmt.close();
```

```
            con.close();
        }

}
```

Output:

```
Enter student id:abcd
Enter student name:hello
Enter student age:20
Enter student address:hyd
abcd    hello   20      hyd
```

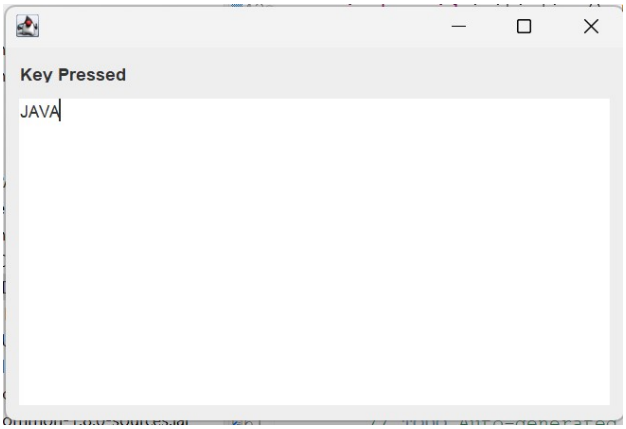
- **KEYS DEMO:**

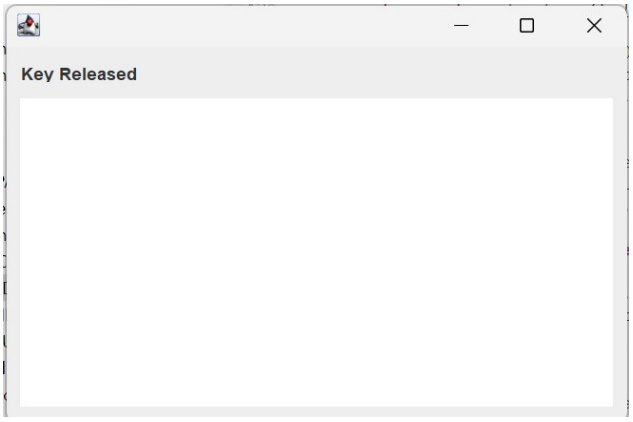
```
package LOGIN;
import java.awt.EventQueue;
import java.awt.event.KeyEvent;
import java.awt.event.KeyListener;

import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JTextArea;

public class KeysDemo implements KeyListener{

        private JFrame frame;
        private JLabel lblNewLabel;

        /**
         * Launch the application.
         */
        public static void main(String[] args) {
                EventQueue.invokeLater(new Runnable() {
                        public void run() {
                                try {
                                        KeysDemo window = new KeysDemo();
                                        window.frame.setVisible(true);
```

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

/**
 * Create the application.
 */
public KeysDemo() {
        initialize();
}

/**
 * Initialize the contents of the frame.
 */
private void initialize() {
        frame = new JFrame();
        frame.setBounds(100, 100, 450, 300);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.getContentPane().setLayout(null);


        lblNewLabel = new JLabel("");
        lblNewLabel.setBounds(10, 11, 416, 14);
        frame.getContentPane().add(lblNewLabel);

        JTextArea textArea = new JTextArea();
        textArea.setBounds(10, 36, 416, 216);
        frame.getContentPane().add(textArea);
        textArea.addKeyListener(this);
}
```

```
	@Override
	public void keyTyped(KeyEvent e) {
		// TODO Auto-generated method stub
		//lblNewLabel.setText("Key Typed");
	}

	@Override
	public void keyPressed(KeyEvent e) {
		// TODO Auto-generated method stub
		lblNewLabel.setText("Key Pressed");

	}

	@Override
	public void keyReleased(KeyEvent e) {
		// TODO Auto-generated method stub
		lblNewLabel.setText("Key Released");

	}
}
```

Output:




- **Menu Demo:**

```
package LOGIN;
import javax.swing.*;
```

```
import java.awt.event.*;
public class MenuDemo {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		JFrame jf = new JFrame("Menu Demo");

		JTextArea jta = new JTextArea();
		jta.setBounds(0, 10, 400, 500);
		jf.add(jta);

		JMenuBar mb = new JMenuBar();

		JMenu jm = new JMenu("File");
		jm.setMnemonic('F');
		JMenuItem mi1 = new JMenuItem("New");
		mi1.setMnemonic('N');
		mi1.addActionListener(new ActionListener() {

			@Override
			public void actionPerformed(ActionEvent arg0) {
				// TODO Auto-generated method stub
				jta.setText("");
			}
		});
		JMenuItem mi2 = new JMenuItem("Open");

		jm.add(mi1); jm.add(mi2);

		mb.add(jm);

		JMenu submenu = new JMenu("Save");

		JMenuItem mi3 = new JMenuItem("Save");
```

```
                JMenuItem mi4 = new JMenuItem("Save as");

                submenu.add(mi3);
                submenu.add(mi4);

                jm.add(submenu);

                jf.setJMenuBar(mb);

                jf.setSize(400, 500);
                jf.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
                jf.setLayout(null);
                jf.setVisible(true);
        }

}
```

Output:

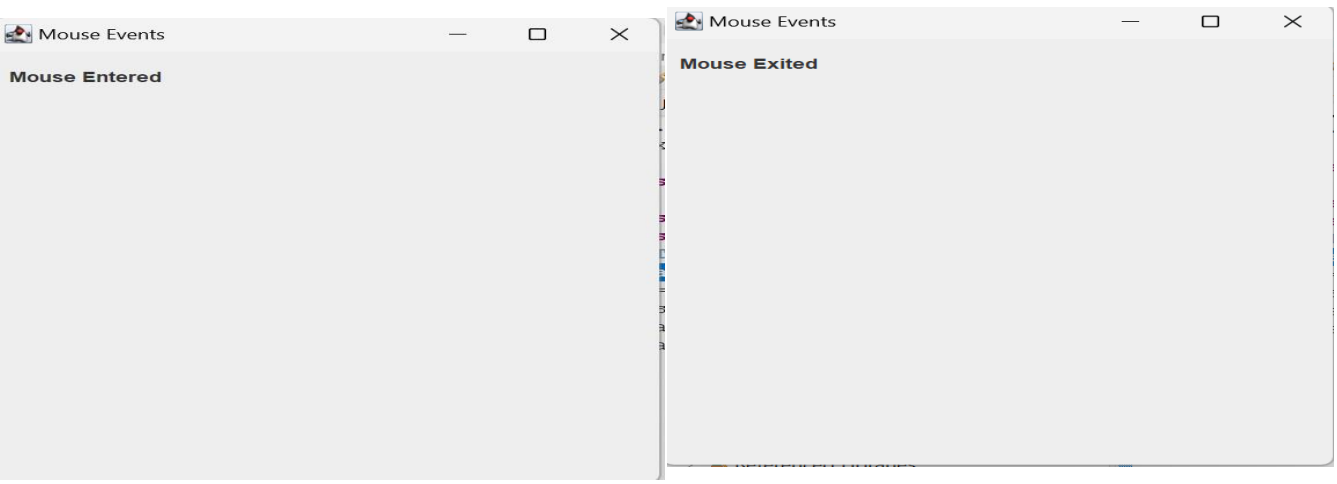

- **MouseListenerDemo:**

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

```
public class MouseListenerDemo{

	public static JLabel jl;
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		JFrame jf = new JFrame("Mouse Events");
		jl = new JLabel();
		jl.setBounds(10, 10, 120, 20);
		jf.add(jl);
		jf.addMouseListener(new MouseListener() {

			@Override
			public void mouseReleased(MouseEvent arg0) {
				// TODO Auto-generated method stub
				jl.setText("Mouse Released");
			}

			@Override
			public void mousePressed(MouseEvent arg0) {
				// TODO Auto-generated method stub
				jl.setText("Mouse Pressed");
			}

			@Override
			public void mouseExited(MouseEvent arg0) {
				// TODO Auto-generated method stub
				jl.setText("Mouse Exited");
			}

			@Override
			public void mouseEntered(MouseEvent arg0) {
				// TODO Auto-generated method stub
				jl.setText("Mouse Entered");
			}
```

```
                @Override
                public void mouseClicked(MouseEvent me) {
                        // TODO Auto-generated method stub
                        //jl.setText("Mouse Clicked");
                        Graphics g = jf.getGraphics();
                        g.setColor(Color.red);
                        g.fillOval(me.getX(), me.getY(), 20, 20);
                }
        });

        jf.setSize(400,400);
        jf.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        jf.setLayout(null);
        jf.setVisible(true);
    }

}
```

Output:



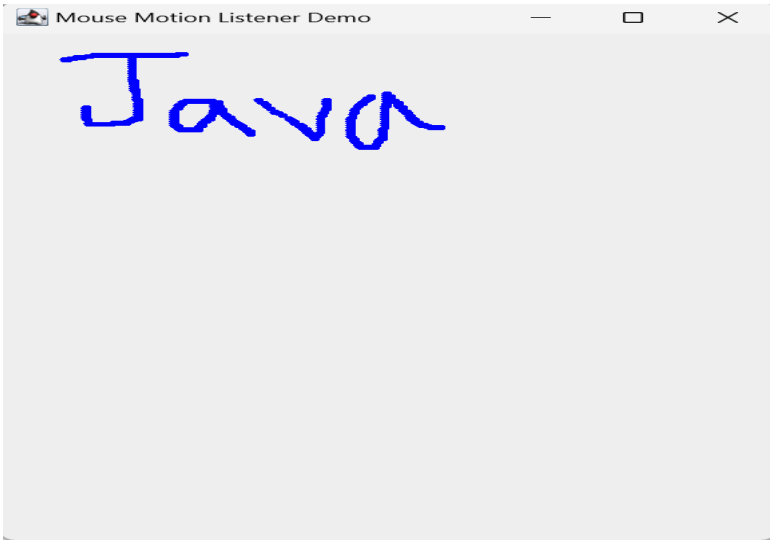

- **MouseMotionListenerDemo:**

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

```
public class MouseMotionListenerDemo implements MouseMotionListener{

	JFrame jf;
	JLabel jl;

	public MouseMotionListenerDemo() {
		// TODO Auto-generated constructor stub
		jf = new JFrame("Mouse Motion Listener Demo");
		jf.addMouseMotionListener(this);

		jl = new JLabel();
		jl.setBounds(10,10,120,20);
		jf.add(jl);

		jf.setSize(400,500);
		jf.setLayout(null);
		jf.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		jf.setVisible(true);
	}
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		new MouseMotionListenerDemo();
	}

	@Override
	public void mouseDragged(MouseEvent me) {
		// TODO Auto-generated method stub
		Graphics g = jf.getGraphics();
		g.setColor(Color.BLUE);
		g.fillOval(me.getX(), me.getY(), 5, 5);
	}

	@Override
```

```
	public void mouseMoved(MouseEvent arg0) {
		// TODO Auto-generated method stub
	}
}
```

Output:



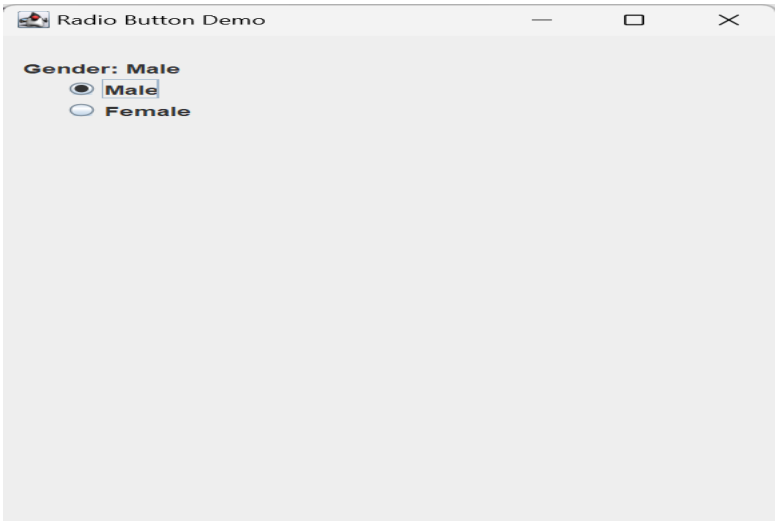

- **RadioButtonDemo:**

```
package LOGIN;
 import javax.swing.*;
import java.awt.Color;
import java.awt.event.*;
public class RadioButtonDemo {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		JFrame jf = new JFrame("Radio Button Demo");
		JLabel jl = new JLabel("Gender: ");
		jl.setBounds(10,20, 100,20);
		jf.add(jl);
		JRadioButton rb1, rb2;
		rb1 = new JRadioButton("Male");
		rb1.setBounds(30, 40, 100, 20);
		rb1.addItemListener(new ItemListener() {
			@Override
			public void itemStateChanged(ItemEvent arg0) {
				// TODO Auto-generated method stub
```

```
                    jl.setText("Gender: Male");
                }
            });
            jf.add(rb1);
            rb2 = new JRadioButton("Female");
            rb2.setBounds(30, 60, 100, 20);
            rb2.addItemListener(new ItemListener() {
                @Override
                public void itemStateChanged(ItemEvent arg0) {
                    // TODO Auto-generated method stub
                    jl.setText("Gender: Female");
                }
            });
            jf.add(rb2);
            ButtonGroup b1 = new ButtonGroup();
            b1.add(rb1); b1.add(rb2);
            jf.setSize(400,500);
            jf.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
            jf.setLayout(null);
            jf.setVisible(true);
        }
}
```

Output:

- **SecondPage:**

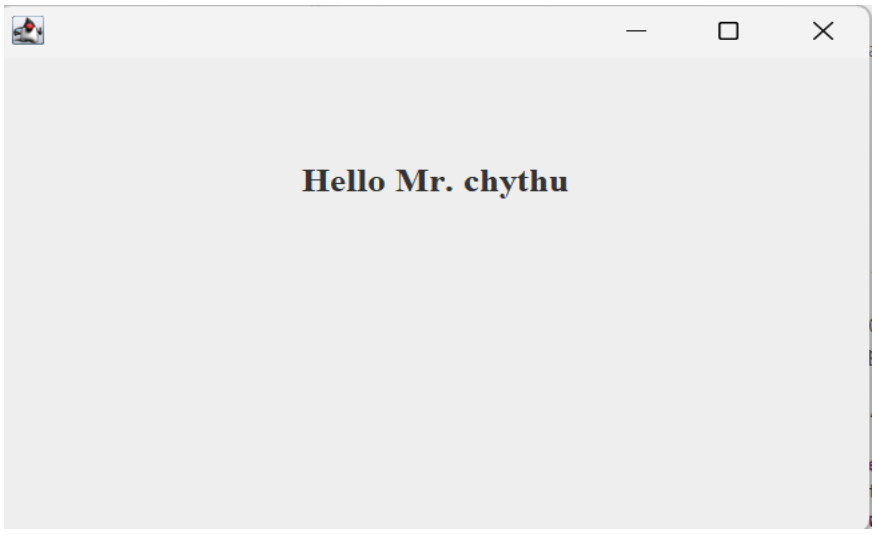



```
package com.rcinfosoftsolutions;
```

```
import java.awt.EventQueue;
import javax.swing.JFrame;
import javax.swing.JLabel;
import java.awt.Font;
import javax.swing.SwingConstants;

public class SecondPage {

	private JFrame frame;
	private String name;

	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
					SecondPage window = new SecondPage();
					window.frame.setVisible(true);
				} catch (Exception e) {
					e.printStackTrace();
				}
			}
		});
	}

	/**
	 * Create the application.
	 */
	public SecondPage() {
		initialize();
	}
	public SecondPage(String name) {
```

```
		this.name = name;
		initialize();
	}

	/**
	 * Initialize the contents of the frame.
	 */
	private void initialize() {
		frame = new JFrame();
		frame.setBounds(100, 100, 450, 300);
		frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		frame.getContentPane().setLayout(null);
		frame.setVisible(true);

		JLabel lblNewLabel = new JLabel("");
		lblNewLabel.setHorizontalAlignment(SwingConstants.CENTER);
		lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD, 18));
		lblNewLabel.setBounds(10, 58, 416, 21);
		frame.getContentPane().add(lblNewLabel);
		lblNewLabel.setText("Hello Mr. " + name);
	}

}
```

Output:



- **SignupPage:**

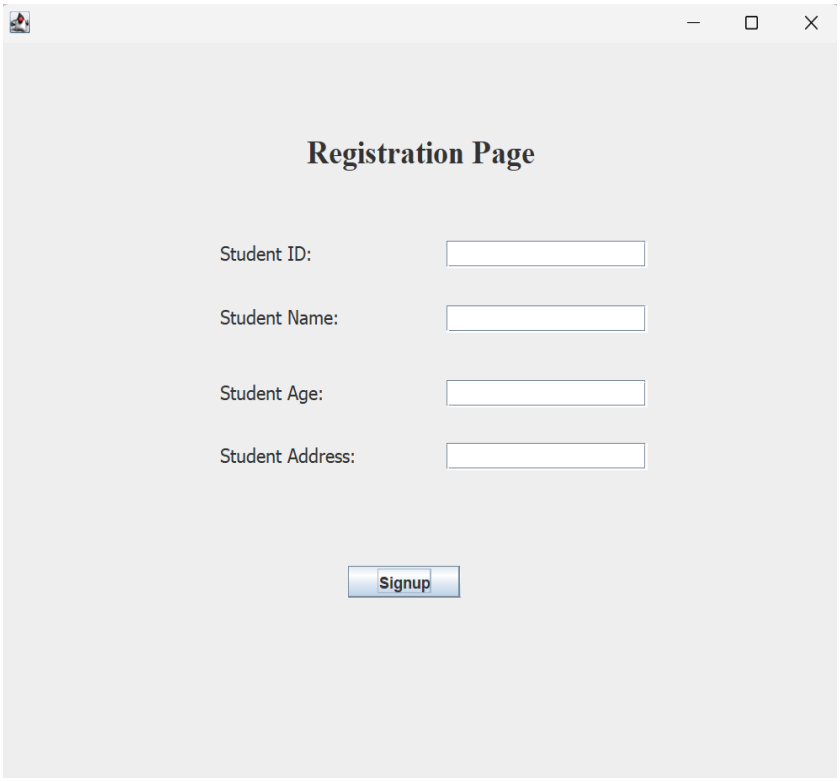
```
package com.rcinfosoftsolutions;
import java.awt.EventQueue;
import java.sql.*;

import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;

import java.awt.Font;
import javax.swing.SwingConstants;
import javax.swing.JTextField;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.sql.Connection;
import java.sql.DriverManager;
import java.awt.event.ActionEvent;

public class SignupPage {

	private JFrame frame;
	private JTextField tfSid;
	private JTextField tfSname;
	private JTextField tfSage;
	private JTextField tfSaddr;

	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
```

```
                                SignupPage window = new SignupPage();
                                //window.frame.setVisible(true);
                        } catch (Exception e) {
                                e.printStackTrace();
                        }
                }
        });
}

/**
 * Create the application.
 */
public SignupPage() {
        initialize();
        frame.setVisible(true);
}

/**
 * Initialize the contents of the frame.
 */
private void initialize() {
        frame = new JFrame();
        frame.setBounds(100, 100, 680, 580);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.getContentPane().setLayout(null);

        JLabel lblNewLabel = new JLabel("Registration Page");
        lblNewLabel.setHorizontalAlignment(SwingConstants.CENTER);
        lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD, 24));
        lblNewLabel.setBounds(10, 59, 646, 43);
        frame.getContentPane().add(lblNewLabel);

        JLabel lblNewLabel_1 = new JLabel("Student ID:");
        lblNewLabel_1.setFont(new Font("Tahoma", Font.PLAIN, 14));
```

```
lblNewLabel_1.setBounds(174, 142, 103, 23);
frame.getContentPane().add(lblNewLabel_1);

JLabel lblNewLabel_1_1 = new JLabel("Student Name:");
lblNewLabel_1_1.setFont(new Font("Tahoma", Font.PLAIN, 14));
lblNewLabel_1_1.setBounds(174, 189, 103, 23);
frame.getContentPane().add(lblNewLabel_1_1);

JLabel lblNewLabel_1_1_1 = new JLabel("Student Age:");
lblNewLabel_1_1_1.setFont(new Font("Tahoma", Font.PLAIN, 14));
lblNewLabel_1_1_1.setBounds(174, 244, 103, 23);
frame.getContentPane().add(lblNewLabel_1_1_1);

JLabel lblNewLabel_1_1_2 = new JLabel("Student Address:");
lblNewLabel_1_1_2.setFont(new Font("Tahoma", Font.PLAIN, 14));
lblNewLabel_1_1_2.setBounds(174, 290, 125, 23);
frame.getContentPane().add(lblNewLabel_1_1_2);

tfSid = new JTextField();
tfSid.setBounds(354, 145, 159, 20);
frame.getContentPane().add(tfSid);
tfSid.setColumns(10);

tfSname = new JTextField();
tfSname.setColumns(10);
tfSname.setBounds(354, 192, 159, 20);
frame.getContentPane().add(tfSname);

tfSage = new JTextField();
tfSage.setColumns(10);
tfSage.setBounds(354, 247, 159, 20);
frame.getContentPane().add(tfSage);

tfSaddr = new JTextField();
```

```
		tfSaddr.setColumns(10);
		tfSaddr.setBounds(354, 293, 159, 20);
		frame.getContentPane().add(tfSaddr);


		JButton btnNewButton = new JButton("Signup");
		btnNewButton.addActionListener(new ActionListener() {
			public void actionPerformed(ActionEvent e) {
				try {
					Class.forName("com.mysql.cj.jdbc.Driver");
					Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/sru", "root", "");
					Statement stmt = con.createStatement();
					String sid = tfSid.getText();
					String sname = tfSname.getText();
					String sage = tfSage.getText();
					String saddr = tfSaddr.getText();
					String sql = "insert into student values('"+sid+"', '"+sname+"', '"+sage+"', '"+saddr+"')";
					stmt.executeUpdate(sql);
					JOptionPane.showMessageDialog(frame, "Registration Completed Successfully");
					LoginPage lp = new LoginPage();
					frame.dispose();
				}
				catch(Exception exc) {exc.printStackTrace();}
			}
		});
		btnNewButton.setBounds(276, 383, 89, 23);
		frame.getContentPane().add(btnNewButton);
	}
}
```

Output:



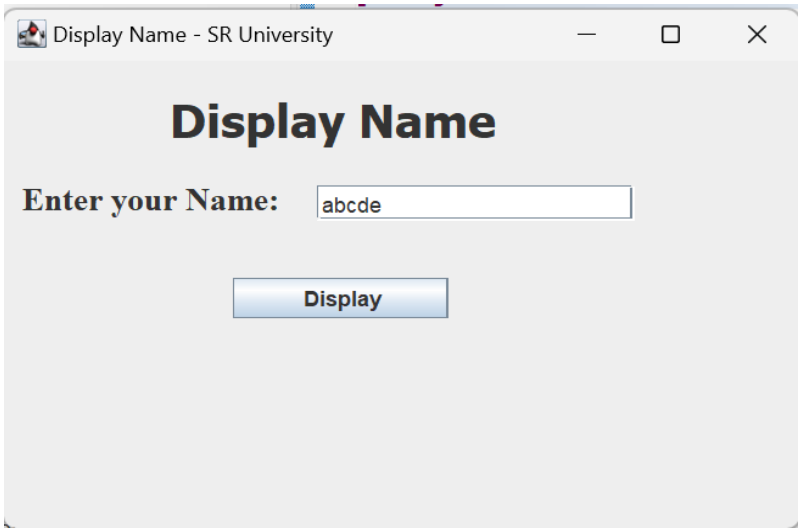

- **SwingDemo:**

```
package com.rcinfosoftsolutions;
import java.awt.EventQueue;
import javax.swing.JFrame;
import java.awt.Toolkit;
import javax.swing.JLabel;
import java.awt.Font;
import javax.swing.JTextField;
import javax.swing.JButton;
import javax.swing.SwingConstants;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class SwingDemo {

	private JFrame frmSrUniversity;
	private JTextField textField;
```

```
	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
					SwingDemo window = new SwingDemo();
					window.frmSrUniversity.setVisible(true);
				} catch (Exception e) {
					e.printStackTrace();
				}
			}
		});
	}

	/**
	 * Create the application.
	 */
	public SwingDemo() {
		initialize();
	}

	/**
	 * Initialize the contents of the frame.
	 */
	private void initialize() {
		frmSrUniversity = new JFrame();

	frmSrUniversity.setIconImage(Toolkit.getDefaultToolkit().getImage("C:\\Users\\HP\\Pictures\\SRA_
9851.JPG"));
		frmSrUniversity.setTitle("Display Name - SR University");
		frmSrUniversity.setBounds(100, 100, 450, 300);
		frmSrUniversity.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
```

```
        frmSrUniversity.getContentPane().setLayout(null);

        JLabel lblNewLabel = new JLabel("Enter your Name:");
        lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD, 18));
        lblNewLabel.setBounds(10, 68, 189, 21);
        frmSrUniversity.getContentPane().add(lblNewLabel);

        JLabel lblNewLabel_1 = new JLabel("Display Name");
        lblNewLabel_1.setFont(new Font("Tahoma", Font.BOLD, 26));
        lblNewLabel_1.setBounds(91, 11, 250, 45);
        frmSrUniversity.getContentPane().add(lblNewLabel_1);

        textField = new JTextField();
        textField.setBounds(172, 70, 174, 20);
        frmSrUniversity.getContentPane().add(textField);
        textField.setColumns(10);

        JButton btnNewButton = new JButton("Display");
        btnNewButton.setBounds(126, 122, 118, 23);
        frmSrUniversity.getContentPane().add(btnNewButton);

        JLabel lblNewLabel_2 = new JLabel("");
        lblNewLabel_2.setFont(new Font("Tahoma", Font.BOLD, 16));
        lblNewLabel_2.setHorizontalAlignment(SwingConstants.CENTER);
        lblNewLabel_2.setBounds(10, 192, 416, 21);

        frmSrUniversity.getContentPane().add(lblNewLabel_2);
        btnNewButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                String name = textField.getText();
                lblNewLabel_2.setText("Hello Mr. " + name);
            }
        });
}}
```

Output:

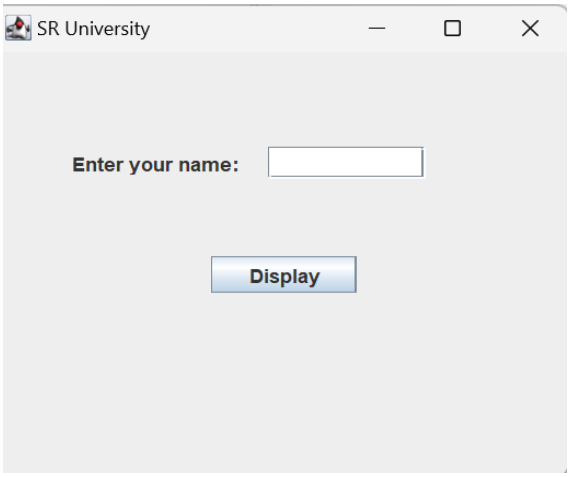



- **SwingExampleDemo:**

```
package LOGIN;

import java.awt.EventQueue;

import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JTextField;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class SwingExample {

	private JFrame frmSrUniversity;
	private JTextField textField;

	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
```

```
                        try {
                                SwingExample window = new SwingExample();
                                window.frmSrUniversity.setVisible(true);
                        } catch (Exception e) {
                                e.printStackTrace();
                        }
                }
        });
}

/**
 * Create the application.
 */
public SwingExample() {
        initialize();
}

/**
 * Initialize the contents of the frame.
 */
private void initialize() {
        frmSrUniversity = new JFrame();
        frmSrUniversity.setTitle("SR University");
        frmSrUniversity.setBounds(100, 100, 365, 300);
        frmSrUniversity.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frmSrUniversity.getContentPane().setLayout(null);

        JLabel lblNewLabel = new JLabel("Enter your name:");
        lblNewLabel.setBounds(48, 62, 110, 14);
        frmSrUniversity.getContentPane().add(lblNewLabel);

        textField = new JTextField();
        textField.setBounds(168, 59, 96, 20);
        frmSrUniversity.getContentPane().add(textField);
```

```
        textField.setColumns(10);

        JButton btnNewButton = new JButton("Display");
        btnNewButton.setBounds(133, 127, 89, 23);
        frmSrUniversity.getContentPane().add(btnNewButton);

        JLabel lblNewLabel_1 = new JLabel("");
        lblNewLabel_1.setBounds(10, 191, 331, 14);
        frmSrUniversity.getContentPane().add(lblNewLabel_1);

        btnNewButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                String name = textField.getText();
                lblNewLabel_1.setText("Hello Mr. " + name);
            }
        });
    }
```




```
}
```

Output:

- **TableDemo:**

```
package com.rcinfosoftsolutions;

import java.awt.EventQueue;

import javax.swing.JFrame;
```

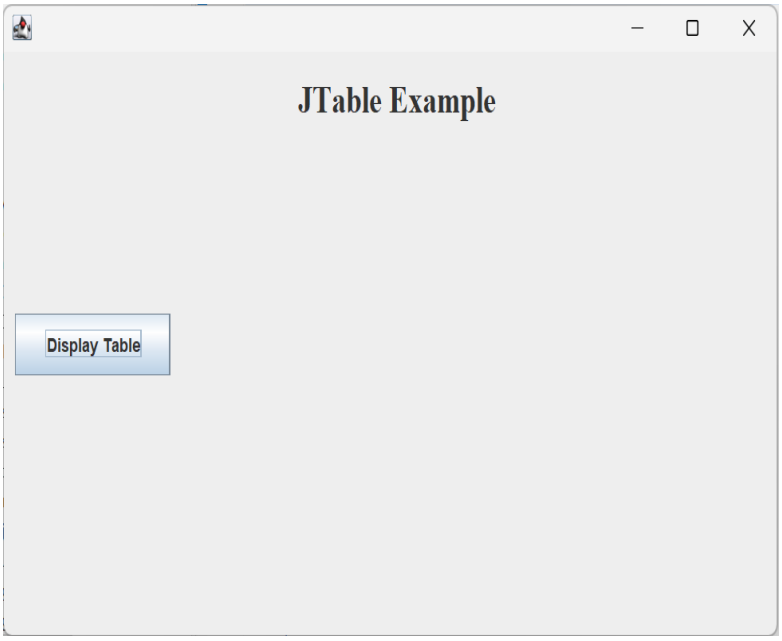
```
import javax.swing.JTable;
import javax.swing.table.DefaultTableModel;
import javax.swing.JScrollPane;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.ResultSetMetaData;
import java.sql.Statement;
import java.awt.event.ActionEvent;
import javax.swing.JLabel;
import java.awt.Font;
import javax.swing.SwingConstants;

public class TableDemo {

	private JFrame frame;
	private JTable table;
	private JLabel lblNewLabel;

	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
					TableDemo window = new TableDemo();
					window.frame.setVisible(true);
				} catch (Exception e) {
					e.printStackTrace();
				}
			}
```

```
        });
}

/**
 * Create the application.
 */
public TableDemo() {
        initialize();
}

/**
 * Initialize the contents of the frame.
 */
private void initialize() {
        frame = new JFrame();
        frame.setBounds(100, 100, 661, 403);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.getContentPane().setLayout(null);

        JScrollPane scroll = new JScrollPane();
        scroll.setBounds(150, 51, 475, 304);
        frame.getContentPane().add(scroll);

        scroll.setVisible(false);

        table = new JTable();
        scroll.setViewportView(table);

        JButton btnShow = new JButton("Display Table");
        btnShow.addActionListener(new ActionListener() {
                public void actionPerformed(ActionEvent e) {
                        try {
                                scroll.setVisible(true);
                                Class.forName("com.mysql.cj.jdbc.Driver");
```

```
                                        Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/sru", "root", "");
                                        Statement stmt = con.createStatement();
                                        String qry = "select * from student";
                                        ResultSet rs = stmt.executeQuery(qry);
                                        ResultSetMetaData rmd = rs.getMetaData();
                                        int cc = rmd.getColumnCount();
                                        DefaultTableModel model = (DefaultTableModel) table.getModel();
                                        String[] cols = new String[cc];
                                        for(int i = 0; i<cc; i++)
                                                cols[i] = rmd.getColumnName(i+1);
                                        model.setColumnIdentifiers(cols);
                                        while(rs.next()) {
                                                String sid = rs.getString(1);
                                                String sname = rs.getString(2);
                                                String sage = rs.getString(3);
                                                String saddr = rs.getString(4);
                                                String row[] = {sid, sname, sage, saddr};
                                                model.addRow(row);
                                        }

                                }
                                catch(Exception e1) {e1.printStackTrace();}
                        }
                });
                btnShow.setBounds(10, 164, 130, 39);
                frame.getContentPane().add(btnShow);

                lblNewLabel = new JLabel("JTable Example");
                lblNewLabel.setHorizontalAlignment(SwingConstants.CENTER);
                lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD, 24));
                lblNewLabel.setBounds(20, 11, 617, 38);
                frame.getContentPane().add(lblNewLabel);
        }
```

}

Output:




- **Multilevelinheritance program**

```
import java.util.*;


class Person {
   private String name;
   Person(String s) {
      setName(s);
   }

   public void setName(String name) {
      this.name = name;
   }
   public String getName() {
      return this.name;
   }
}
class Employee extends Person {
   private int id;
   Employee(String sname, int id) //Constructor Method
      {
```

```
        super(sname);
        setId(id);
    }
  public void setId(int id) {
    this.id = id;
  }
  public int getId() {
    return this.id;
  }
}
class HourlyEmployee extends Employee{
  int hourlyRate,hoursWorked;
  HourlyEmployee(String NAME,int ID,int HR ,int HW)
  {
    super(NAME,ID);
    hourlyRate=HR;
    hoursWorked=HW;
  }
  public int getGrosspay()
  {
    int Grosspay;
    Grosspay=hourlyRate*hoursWorked;
    return Grosspay;
  }
}
class Multilevel {
  public static void main(String[] args) {
    Scanner s = new Scanner(System.in);
    String NAME = s.nextLine();
    int ID = s.nextInt();
    int HR = s.nextInt();
    int HW = s.nextInt();
    HourlyEmployee hourlyEmployee = new HourlyEmployee(NAME, ID, HR, HW);
    System.out.println(hourlyEmployee.getId());
    System.out.println(hourlyEmployee.getName());
    System.out.print(hourlyEmployee.getGrosspay());
  }
```

}

Output:

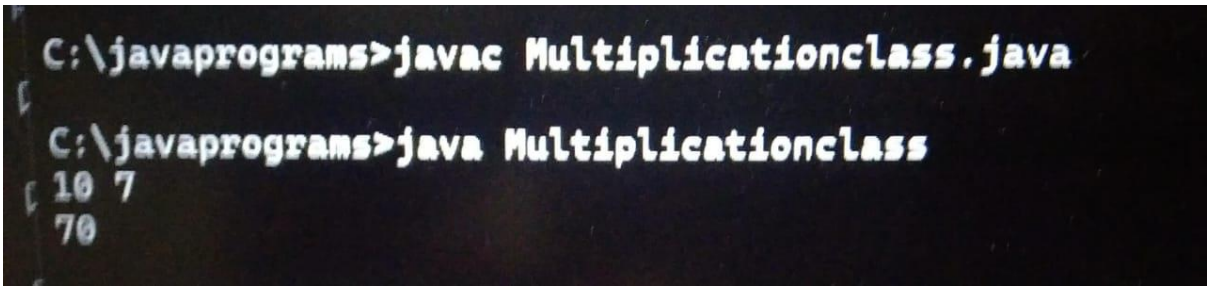
```
dora
123
10000
5000
123
dora
50000000
```

- **Multiplication Class Program**

```
import java.util.*;

//write your code here
class IllegalArgumentException extends Exception{
    IllegalArgumentException(){
        super();
    }
}

class Multiplication{
    int x,y,error=0;
    Multiplication(){
        x=0;
        y=0;
    }
    Multiplication(String x,String y) throws IllegalArgumentException{
        try{
            this.x=Integer.parseInt(x);
            this.y=Integer.parseInt(y);
        }
        catch(Exception e){
            throw new IllegalArgumentException();
        }
    }
    long multiply(){
        return x*y;
```

```
    }
}

class Multiplicationclass{
        public static void main(String[] args){
                Scanner sc = new Scanner(System.in);
                String input = sc.nextLine();
                String[] values = input.split(" ");
                try{
      Multiplication multiply = new Multiplication(values[0],values[1]);
                        System.out.println(multiply.multiply());
                }
    catch(Exception e){
                        System.out.println("java.lang."+e);
                }
        }
}
```

Output:




MultiThread program

```
class MyThread implements Runnable
{
Thread t;
MyThread(String tname)
{
t=new Thread(this,tname);
System.out.println("Thread is:" +  t);
t.start();
}
public void run()
{
try
```

```
{
for(int i=5;i>0;i--)
{
System.out.println(t + "Thread :" +i);
Thread.sleep(500);
}
}
catch(InterruptedException e)
{
System.out.println("Child interrupted");
}
System.out.println("Exiting child thread");
}
}
class MultiThreadDemo
{
public static void main(String[] args)
{
new MyThread("Kushi");
new MyThread("dora");
new MyThread("suzii");
}}
```

Output:

```
Thread is:Thread[kushi,5,main]
Thread is:Thread[dora,5,main]
Thread is:Thread[suzii,5,main]
Thread[dora,5,main]Thread :5
Thread[kushi,5,main]Thread :5
Thread[suzii,5,main]Thread :5
Thread[dora,5,main]Thread :4
Thread[kushi,5,main]Thread :4
Thread[suzii,5,main]Thread :4
Thread[dora,5,main]Thread :3
Thread[kushi,5,main]Thread :3
Thread[suzii,5,main]Thread :3
Thread[dora,5,main]Thread :2
Thread[kushi,5,main]Thread :2
Thread[suzii,5,main]Thread :2
Thread[dora,5,main]Thread :1
Thread[kushi,5,main]Thread :1
Thread[suzii,5,main]Thread :1
Exiting child thread
Exiting child thread
Exiting child thread
```

- **Negative Number program:**

```
import java.util.*;
import java.io.*;
class NegativeNumberException extends Exception
{
NegativeNumberException()
{
super();
}
}
public class NegativeNumber {
  public static void solution(int n) throws NegativeNumberException
  {
  if(n<0)
    throw new NegativeNumberException();
  else if(n==0)
    System.out.print("0");
   else
     System.out.print("1");
  }
  public static void main(String[] args)
  {
 Scanner in=new Scanner(System.in);
  int n=in.nextInt();
  try
  {
  solution(n);
  }
   catch(NegativeNumberException e)
   {
    System.out.print(e);
    }
   }
```

Output:

```
10
1
```

```
0
0
```

```
-1
NegativeNumberException
```

- **Nested TryDemo:**

```
import java.util.*;
public class NestedTryDemo
{
public static void main(String[] args)
{
int a,b,c=0;
try
{
a=Integer.parseInt(args[0]);
b=Integer.parseInt(args[1]);
try
{
c=a/b;
}
catch(ArithmeticException ex)
{
```

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

}

}

catch(ArrayIndexOutOfBoundsException e)

{

System.out.println(e);

}

System.out.println("division is:"+c);

}

}
```

Output:

```
division is:0
```

- **Object program:**

```
class Add{
int a,b,c;
   void init(){
   a=20;
   b=30;
   }
   void Add(){
   c=a+b;
   }
   void display(){
   System.out.println("The addition is:"+c);
   }
}
public class ObjectDemo{
public static void main(String[] args){
   Add a1=new Add();
   a1.init();
   a1.Add();
   a1.display();
}
}
```

Output:

```
The addition is:50
```

- **Palindrome Program:**

```
public class Palindrome{
public static void main(String[] args){
int n=34,r=0,s=0,m;
m=n;
while(n>0)
{
r=n%10;
s=s*10+r;
n=n/10;
}
if(s==m)
System.out.println("it is a palindrome");
else
System.out.println("not a palindrome");
}
}
```

Output:


- **Parametirized constructor program:**

```
class Add{
int a,b,c;
Add(int n1,int n2){
a=n1;
b=n2;
}
void add(){
c=a+b;
}
void display(){
System.out.println("the addition is:"+c);
}
}
public class ParameterizedConstructorDemo{
```

```
public static void main(String[] args){
Add a1=new Add(30,50);
a1.add();
a1.display();
}
}
```

Output:


- **PersonAbstract program:**

```
import java.util.*;
import java.lang.reflect.*;
//write your code here
abstract class Person{
    String name,address,email;
    long phone;
    abstract void toShow();
}
class Student extends Person
{
 Student(String name,String address,long phone,String email)
 {
   this.name=name;
   this.address=address;
   this.phone=phone;
   this.email=email;
 }
 public void toShow()
 {
  System.out.print("Student"+" "+name);
 }
}
class Employee extends Person
```

```
{
String office;
double salary;
  Employee(String name,String address,long phone,String email,String office,double salary)
  {
   this.name=name;
   this.address=address;
   this.phone=phone;
   this.email=email;
   this.office=office;
   this.salary=salary;
  }
  public void toShow()
  {
  System.out.print("Employee"+" "+name);
  }
}
class PersonAbstract{

        public static void main(String[] args){

                Scanner sc = new Scanner(System.in);
                int choice = Integer.parseInt(sc.nextLine());
                String name = sc.nextLine();
                String address = sc.nextLine();
                long phone = Long.parseLong(sc.nextLine());
                String email = sc.nextLine();
                Person person = null;
                switch(choice){
                        case 1:
                                person = new Student(name, address, phone, email);
        person.toShow();
                                break;
                        case 2:
                                String office = sc.nextLine();
                                double salary = Double.parseDouble(sc.nextLine());
                                person = new Employee(name, address, phone, email, office, salary);
```

```
            person.toShow();
                                        break;
                    }
            }
}
```

Output:

```
2
kushi
2-104
98765445667
kushi23@gmail.com
xyx
100000
Employee kushi
```

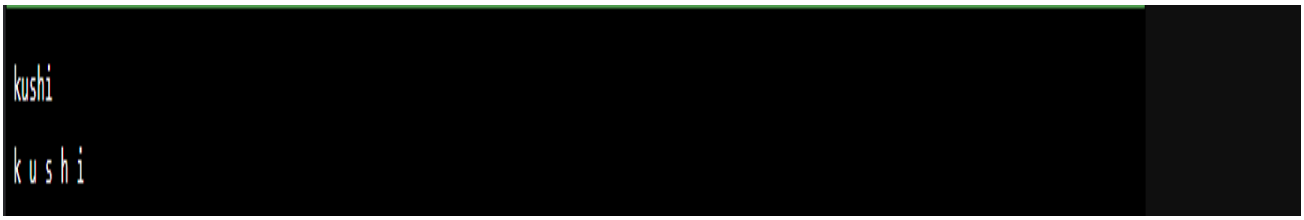
```
1
kushi
2-104
9876544498
kushi23@gmail.com
Student kushi
```

- **Object Program**:

```
import java.util.*;
class IndividualChar{
   String s;
   int i;
   //constructor is used
   IndividualChar()
   {
      Scanner s1=new Scanner(System.in);//to take input from user
      s=s1.next();
      for(i=0;i<s.length();i++)
      {
         System.out.print(s.charAt(i)+" ");//prints the characters separated by space
      }
```

```
    }
}
public class Object {
    public static void main(String[] args) {
        IndividualChar I = new IndividualChar();//creation of object
    }
}
```

Output:

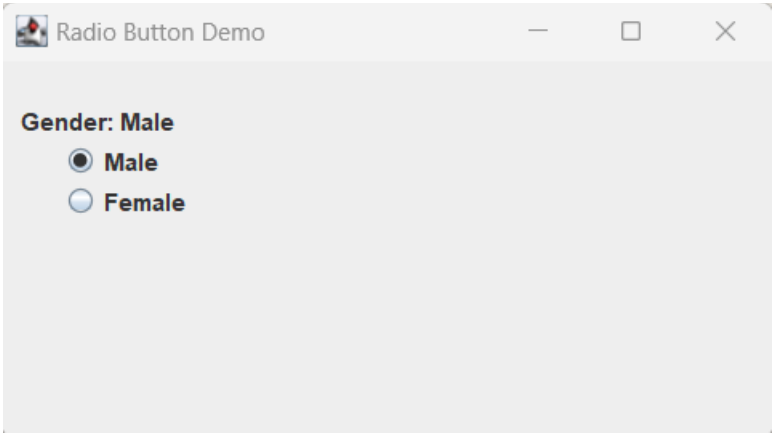


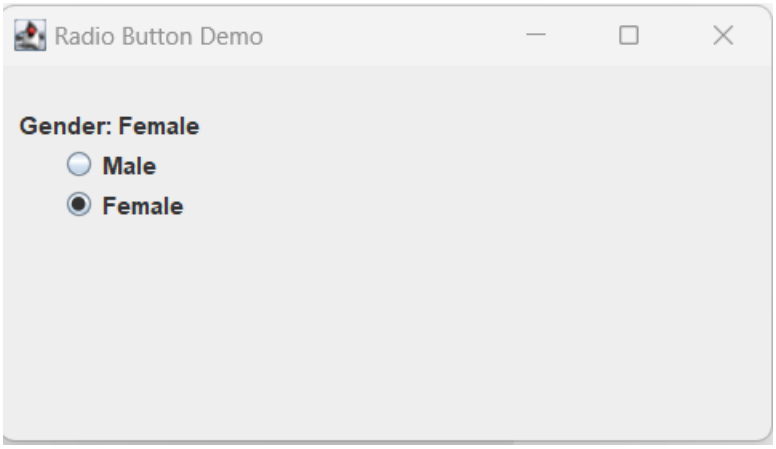

- **Radio Button Demo**

```
package gui;
import javax.swing.*;
import java.awt.Color;
import java.awt.event.*;
public class RadioButtonDEmo {
        public static void main(String[] args) {
                // TODO Auto-generated method stub
                JFrame jf = new JFrame("Radio Button Demo");
                JLabel jl = new JLabel("Gender: ");
                jl.setBounds(10,20, 100,20);
                jf.add(jl);
                JRadioButton rb1, rb2;
                rb1 = new JRadioButton("Male");
                rb1.setBounds(30, 40, 100, 20);
                rb1.addItemListener(new ItemListener() {
                        @Override
                        public void itemStateChanged(ItemEvent arg0) {
                                jl.setText("Gender: Male");
                        }
                });
                jf.add(rb1);
```

```
        rb2 = new JRadioButton("Female");
        rb2.setBounds(30, 60, 100, 20);
        rb2.addItemListener(new ItemListener() {
            @Override
            public void itemStateChanged(ItemEvent arg0) {
                jl.setText("Gender: Female");
            }
        });
        jf.add(rb2);
        ButtonGroup b1 = new ButtonGroup();
        b1.add(rb1); b1.add(rb2);
        jf.setSize(400,500);
        jf.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        jf.setLayout(null);
        jf.setVisible(true);
    }
}
```

Output:




- **Implement an abstract class Reservation and two subclasses ReserveTrain and Reserve Bus.**

```
import java.util.Scanner;
abstract class Reservation {
    abstract boolean reserve(int seats, int typeOfSeat);
    abstract int getAvailableSeats();
}
class ReserveBus extends Reservation {
    private int totalSeats;
    public ReserveBus(int totalSeats) {
        this.totalSeats = totalSeats;
    }
    @Override
    boolean reserve(int seats, int typeOfSeat) {
        if (seats <= getAvailableSeats()) {
            totalSeats -= seats;
            return true;
        }
        return false;
    }
    @Override
    int getAvailableSeats() {
        return totalSeats;
    }
}

class ReserveTrain extends Reservation {
    private int lowerBirthTotalSeats;
    private int middleBirthTotalSeats;
    private int upperBirthTotalSeats;
```

```
public ReserveTrain(int lowerBirthTotalSeats, int middleBirthTotalSeats, int upperBirthTotalSeats) {
    this.lowerBirthTotalSeats = lowerBirthTotalSeats;
    this.middleBirthTotalSeats = middleBirthTotalSeats;
    this.upperBirthTotalSeats = upperBirthTotalSeats;
}
@Override
boolean reserve(int seats, int typeOfSeat) {
    int availableSeats = getAvailableSeatsForType(typeOfSeat);
    if (seats <= availableSeats) {
        updateAvailableSeats(typeOfSeat, seats);
        return true;
    }
    return false;
}
@Override
int getAvailableSeats() {
    return lowerBirthTotalSeats + middleBirthTotalSeats + upperBirthTotalSeats;
}
private int getAvailableSeatsForType(int typeOfSeat) {
    if (typeOfSeat == 1) {
        return lowerBirthTotalSeats;
    } else if (typeOfSeat == 2) {
        return middleBirthTotalSeats;
    } else if (typeOfSeat == 3) {
        return upperBirthTotalSeats;
    }
    return 0;
}
```

```
    private void updateAvailableSeats(int typeOfSeat, int reservedSeats) {
        if (typeOfSeat == 1) {
            lowerBirthTotalSeats -= reservedSeats;
        } else if (typeOfSeat == 2) {
            middleBirthTotalSeats -= reservedSeats;
        } else if (typeOfSeat == 3) {
            upperBirthTotalSeats -= reservedSeats;
        }
    }
}
public class Solution1 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int reservationType = scanner.nextInt();
        if (reservationType == 1) {
            int totalSeats = scanner.nextInt();
            int numBookings = scanner.nextInt();
            ReserveBus busReservation = new ReserveBus(totalSeats);
            for (int i = 0; i < numBookings; i++) {
                int seatsToReserve = scanner.nextInt();
                boolean success = busReservation.reserve(seatsToReserve, 0);
                if (success) {
                    System.out.println("Booked-" + seatsToReserve);
                } else {
                    System.out.println("SEATS NOT AVAILABLE FOR BUS-" + seatsToReserve);
                }
            }
            System.out.println("Remaining Seats-" + busReservation.getAvailableSeats());
```

```
    } else if (reservationType == 2) {
        int lowerBirthTotalSeats = scanner.nextInt();
        int middleBirthTotalSeats = scanner.nextInt();
        int upperBirthTotalSeats = scanner.nextInt();
        int numBookings = scanner.nextInt();
        ReserveTrain trainReservation = new ReserveTrain(lowerBirthTotalSeats, middleBirthTotalSeats,
upperBirthTotalSeats);
        for (int i = 0; i < numBookings; i++) {
            int typeOfSeat = scanner.nextInt();
            int seatsToReserve = scanner.nextInt();
            boolean success = trainReservation.reserve(seatsToReserve, typeOfSeat);
            if (success) {
                System.out.println("Booked-" + seatsToReserve);
            } else {
                System.out.println("SEATS NOT AVAILABLE FOR TRAIN-" + seatsToReserve);
            }
        }
        System.out.println("Remaining Seats-" + trainReservation.getAvailableSeats());
    }}}
```

Output:

```
1
10
3
2 3 7
Booked-2
Booked-3
SEATS NOT AVAILABLE FOR BUS-7
Remaining Seats-5
```

- **Return Object Demo**

```
class Number{
int num;
```

```
Number compare(Number n){
if(this.num<n.num)
  return this;
else
  return n;
}
}
public class ReturnObjectDemo{
public static void main(String[] args){
Number n1=new Number();
Number n2=new Number();
n1.num=20;
n2.num=30;
Number n3=n2.compare(n1);
System.out.println("n3.num "+ n3.num +" is small");
}
}
```

Output:

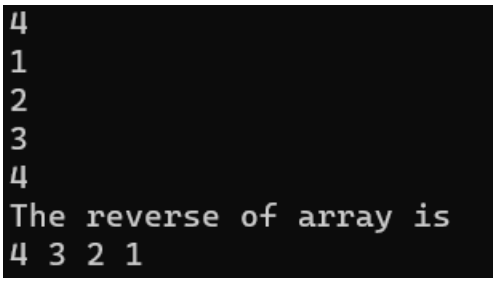
```
n3:num=20 is small
```

- **Reverse of array**

```
import java.util.*;
//Your program will be evaluated by this DriverMain class and several test cases.
public class Reverse {
   public static void main(String[] args) {
       Scanner s = new Scanner(System.in);
       int N = s.nextInt();
       int A[] =  new int[N];
                   for(int i = 0; i < N; i++) {
```

```
                A[i] = s.nextInt();
            }
System.out.println("The reverse of array is");
        for (int i=N-1; i>=0; i--) {
            System.out.print(A[i] + " ");
        }
    }
}
```

Output:




**Scanner Demo**

```
import java.util.*;
public class ScannerDemo
{
public static void main(String[] args)
{
Scanner in=new Scanner(System.in);
int a,b,c;
System.out.println("enter a num");
a=in.nextInt();
System.out.println("enter another num");
b=in.nextInt();
c=a/b;
System.out.println("division is " + c);
```

```
}

}
```
Output:

```
enter a num
6
enter another num
3
division is 2
```

- **Scope Variable Demo**

```
class Scopevariable

{

public static void main(String[] args)

{

int a[]={1,2,3,4,5};

int sum=0;

for(int i:a){

sum=sum+i;

}

System.out.println("The sum is :"+sum);

}

}
```

```
The sum is :15
```

- **Second Page Demo**

```
package gui;

import java.awt.EventQueue;

import javax.swing.JFrame;

import javax.swing.JLabel;

import java.awt.Font;

import javax.swing.SwingConstants;

public class SecondPage {
```

```
private JFrame frame;
private String name;
/**
 * Launch the application.
 */
public static void main(String[] args) {
	EventQueue.invokeLater(new Runnable() {
		public void run() {
			try {
				SecondPage window = new SecondPage();
				window.frame.setVisible(true);
			} catch (Exception e) {
				e.printStackTrace();
			}
		}
	});
}
/**
 * Create the application.
 */
public SecondPage() {
	initialize();
}
public SecondPage(String name) {
	this.name = name;
	initialize();
}
/**
```

```
	 * Initialize the contents of the frame.
	 */
	private void initialize() {
		frame = new JFrame();
		frame.setBounds(100, 100, 450, 300);
		frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
		frame.getContentPane().setLayout(null);
		frame.setVisible(true);
		JLabel lblNewLabel = new JLabel("");
		lblNewLabel.setHorizontalAlignment(SwingConstants.CENTER);
		lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD, 18));
		lblNewLabel.setBounds(10, 58, 416, 21);
		frame.getContentPane().add(lblNewLabel);
		lblNewLabel.setText("Hello Mr. " + name);
	}
}
```

Output:


- **Sign Up Page Demo**

```
package gui;
import java.awt.EventQueue;
import java.sql.*;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import java.awt.Font;
import javax.swing.SwingConstants;
```

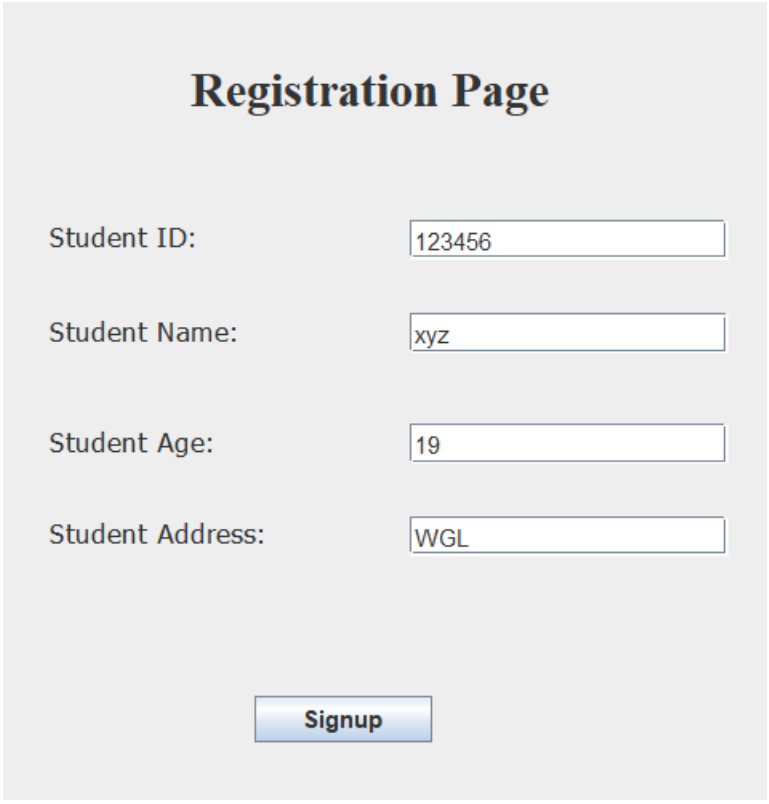
```
import javax.swing.JTextField;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.sql.Connection;
import java.sql.DriverManager;
import java.awt.event.ActionEvent;
public class SignupPage {
	private JFrame frame;
	private JTextField tfSid;
	private JTextField tfSname;
	private JTextField tfSage;
	private JTextField tfSaddr;
	/**
	 * Launch the application.
	 */
	public static void main(String[] args) {
		EventQueue.invokeLater(new Runnable() {
			public void run() {
				try {
					SignupPage window = new SignupPage();
					//window.frame.setVisible(true);
				} catch (Exception e) {
					e.printStackTrace();
				}
			}
		});
	}
	/**
```

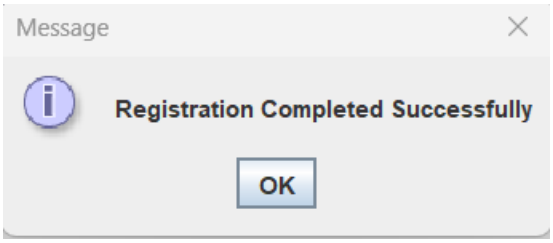
```
 * Create the application.
 */
public SignupPage() {
	initialize();
	frame.setVisible(true);
}
/**
 * Initialize the contents of the frame.
 */
private void initialize() {
	frame = new JFrame();
	frame.setBounds(100, 100, 680, 580);
	frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
	frame.getContentPane().setLayout(null);
	JLabel lblNewLabel = new JLabel("Registration Page");
	lblNewLabel.setHorizontalAlignment(SwingConstants.CENTER);
	lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD, 24));
	lblNewLabel.setBounds(10, 59, 646, 43);
	frame.getContentPane().add(lblNewLabel);
	JLabel lblNewLabel_1 = new JLabel("Student ID:");
	lblNewLabel_1.setFont(new Font("Tahoma", Font.PLAIN, 14));
	lblNewLabel_1.setBounds(174, 142, 103, 23);
	frame.getContentPane().add(lblNewLabel_1);
	JLabel lblNewLabel_1_1 = new JLabel("Student Name:");
	lblNewLabel_1_1.setFont(new Font("Tahoma", Font.PLAIN, 14));
	lblNewLabel_1_1.setBounds(174, 189, 103, 23);
	frame.getContentPane().add(lblNewLabel_1_1);
	JLabel lblNewLabel_1_1_1 = new JLabel("Student Age:");
```

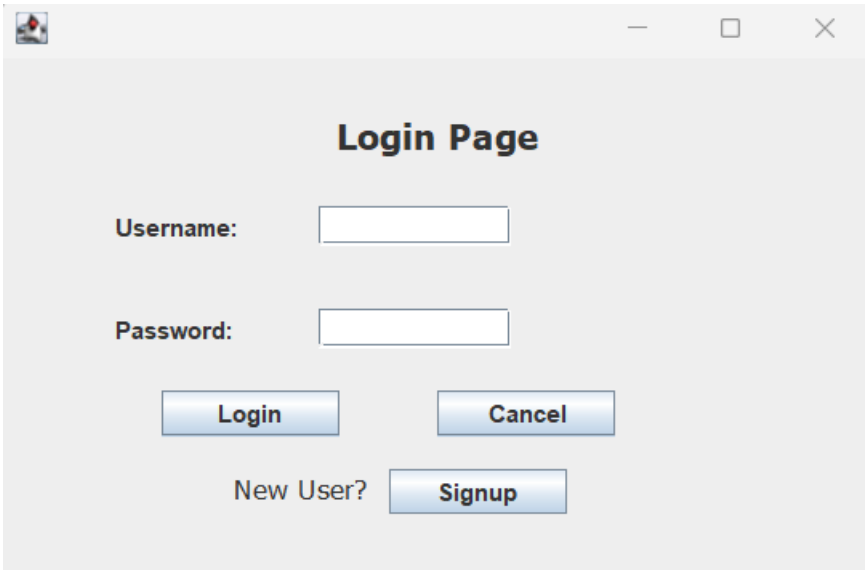
```
lblNewLabel_1_1_1.setFont(new Font("Tahoma", Font.PLAIN, 14));
lblNewLabel_1_1_1.setBounds(174, 244, 103, 23);
frame.getContentPane().add(lblNewLabel_1_1_1);
JLabel lblNewLabel_1_1_2 = new JLabel("Student Address:");
lblNewLabel_1_1_2.setFont(new Font("Tahoma", Font.PLAIN, 14));
lblNewLabel_1_1_2.setBounds(174, 290, 125, 23);
frame.getContentPane().add(lblNewLabel_1_1_2);
tfSid = new JTextField();
tfSid.setBounds(354, 145, 159, 20);
frame.getContentPane().add(tfSid);
tfSid.setColumns(10);
tfSname = new JTextField();
tfSname.setColumns(10);
tfSname.setBounds(354, 192, 159, 20);
frame.getContentPane().add(tfSname);
tfSage = new JTextField();
tfSage.setColumns(10);
tfSage.setBounds(354, 247, 159, 20);
frame.getContentPane().add(tfSage);
tfSaddr = new JTextField();
tfSaddr.setColumns(10);
tfSaddr.setBounds(354, 293, 159, 20);
frame.getContentPane().add(tfSaddr);
JButton btnNewButton = new JButton("Signup");
btnNewButton.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
                try {
                        Class.forName("com.mysql.cj.jdbc.Driver");
```

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

                                        Statement stmt = con.createStatement();

                                        String sid = tfSid.getText();

                                        String sname = tfSname.getText();

                                        String sage = tfSage.getText();

                                        String saddr = tfSaddr.getText();

                                        String sql = "insert into student values('"+sid+"', '"+sname+"',
'"+sage+"', '"+saddr+"')";

                                        stmt.executeUpdate(sql);

                                        JOptionPane.showMessageDialog(frame, "Registration Completed
Successfully");

                                        LoginPage lp = new LoginPage();

                                        frame.dispose();

                                }

                                catch(Exception exc) {exc.printStackTrace();}

                        }

                });

                btnNewButton.setBounds(276, 383, 89, 23);

                frame.getContentPane().add(btnNewButton);

        }

}
```

Output:




- **Simple Interest Demo**

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

```
class Bank{
    double prin;
    int time;
    int rate=2;
    Bank(double prin,int time){
        this.prin=prin;
        this.time=time;
    }
    double calculateSimpleInterest(){
        return (prin*time*rate)/100;
    }
}
class BankA extends Bank{
    int r=10;
    BankA(double prin,int time){
        super(prin,time);
    }
    double claculateSimpleInterest(){
        return (prin*r*time)/100;
    }
}
class BankB extends Bank{
    int r=9;
    BankB(double prin,int time){
        super(prin,time);
    }
    double calculateSimpleInterest(){
        return (prin*r*time)/100;
```

```
    }
}
class BankC extends Bank{
    int r=7;
    BankC(double prin,int time){
        super(prin,time);
    }
    double calculateSimpleInterest(){
        return (prin*r*time)/100;
    }
}
public class Simpleinterest {
    public static void main(String[] args) {
        //Write your code here
        Scanner input = new Scanner(System.in);
        int bank = input.nextInt();
        double prin=input.nextDouble();
        int time = input.nextInt();
        if(bank==1){
            BankA ba = new BankA(prin,time);
            System.out.println(ba.claculateSimpleInterest());
        }
        else if(bank==2){
            BankB bb = new BankB(prin,time);
            System.out.println(bb.calculateSimpleInterest());
        }
        else if(bank==3){
            BankC bc = new BankC(prin,time);
```

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

Output:

```
1
12
30
36.0
```

```
2
12
30
32.4
```

```
3
12
30
25.2
```

- **Single Inheritance Demo**

```
class Vehicle{
int now;
public void display(){
System.out.println(now);
}
}
class Bike extends Vehicle{
Bike(int now){
this.now = now;
}
void show(){
System.out.println(now);
}}
public class SingleInheritance{
```

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

Bike b1 = new Bike(1);

b1.display();

b1.show();

}

}
```

Output:

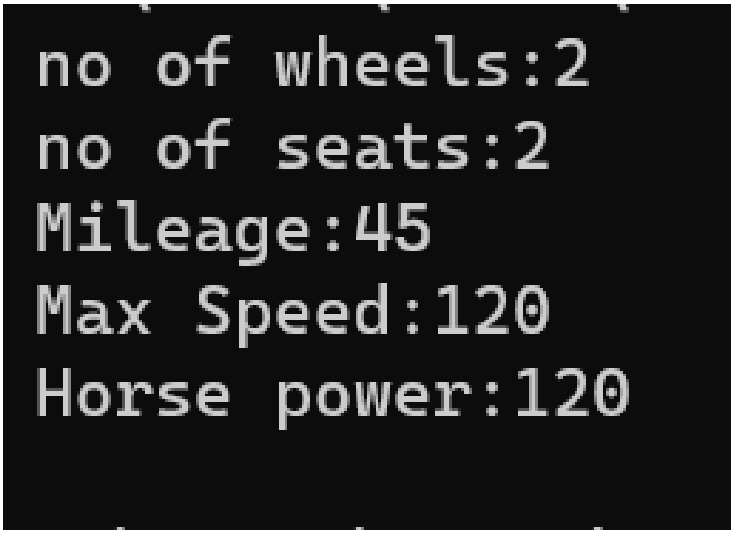
```
1
1
```

- **SingleInheritenceDemo**

```
class Vehicle{
int now,seats,mileage,speed,hp;
   public void display()
   {
   System.out.println("no of wheels:"+now);
   System.out.println("no of seats:"+seats);
   System.out.println("Mileage:"+mileage);
   System.out.println("Max Speed:"+speed);
   System.out.println("Horse power:"+hp);
   }
}
class Bike extends Vehicle{
Bike(int now,int seats,int mileage,int speed,int hp){
this.now=now;
this.seats=seats;
this.mileage=mileage;
this.speed=speed;
this.hp=hp;
}
}
public class SingleInheritenceDemo{
public static void main(String[] args){
```

```
Bike b1=new Bike(2,2,45,120,120);
b1.display();
}
}
```

Output:




- **StaticBlockDemo**

```
class Number
{
static int a=10;
static int b;
static void disp()
{
System.out.println(a+" "+b);
}
}
public class StaticBlockDemo
{
public static void main(String[] args)
{
Number.b=20;
Number.disp();
}
static
{
System.out.println("I am in static block");
```

```
}
}
```

Output:


- **StaticDemo**

```
 class Add{
static int a;
int b;
void operation(){
System.out.println("static value:"+ ++a+"normal value:"+ ++b);
}
static void smethod()
{
System.out.println(a);
}
}
public class StaticDemo
{
public static void main(String[] args)
{
Add a1=new Add();
a1.operation();
Add a2=new Add();
a2.operation();
Add a3=new Add();
a3.operation();
Add.smethod();
}
}
```

Output:

```
static value:1normal value:1
static value:2normal value:1
static value:3normal value:1
3
```

- **StringDemo**

```
public class StringDemo{
public static void main(String[] args){
String s1="Chythu";
String s2= new String(s1);
String s3= new String("chythu");
String s4=s1;
String s5="Chythu";
String s6=" ";
System.out.println(s1);
System.out.println(s2);
System.out.println(s3);
System.out.println("The length of s1 is:" + s1.length());
if (s4==s1) // equality of values
  System.out.println("True");
else
  System.out.println("False");
if (s2==s1)
  System.out.println("True");
else
  System.out.println("False");
if (s1.equals(s2)) //equality of objects
  System.out.println("True");
else
  System.out.println("False");
if (s1.equalsIgnoreCase(s5))
  System.out.println("True");
else
  System.out.println("False");
System.out.println(s1.isEmpty());
```

```
System.out.println(s6.isEmpty());
System.out.println("The character at 3rd index is :" +s1.charAt(3));
System.out.println(" Is the character b is in s1 :" +s1.indexOf('b'));
System.out.println("Is the character h is in s1 :" +s1.indexOf('h'));
System.out.println(" Is the character h in s1 :" +s1.lastIndexOf('h'));
System.out.println("Is the string tha in s1:" +s1.lastIndexOf("tha"));
System.out.println(s1.compareTo(s5));
String s7="SR Univeristy is the best university in telangana";
String arr[]=s7.split("\\s");
System.out.println("The num of char in s7 are:"+s7.length());
System.out.println("The size of arr is :"+arr.length);
for(String c:arr){
System.out.println(c);
}
String arr1[]=s1.split("y");
for(String c1:arr){
System.out.println(c1);
}
System.out.println(s1.toLowerCase());
System.out.println(s1.toUpperCase());
String s8="Ravi Chaitanya";
System.out.println(s8.trim()+s1);
System.out.println(s7.substring(3,14));
System.out.println(s7.substring(6));
}
}
```

Output:

```
Chythu
Chythu
chythu
The length of s1 is:6
True
False
True
True
false
false
The character at 3rd index is :t
 Is the character b is in s1 :-1
Is the character h is in s1 :1
 Is the character h in s1 :4
Is the string tha in s1:-1
0
The num of char in s7 are:49
The size of arr is :8
SR
Univeristy
is
the
best
university
in
telangana
SR
Univeristy
is
the
best
university
```

- **SuperDemo**

```
class Employee
{
int eid;
private String name;
private int age;
Employee()
{
eid=1010;
name="raju";
age=20;
}
```

```
void show()
{
System.out.println(eid+" "+name);
}
}
class Tstaff extends Employee
{
int noh;
String sub_name;
Tstaff()
{
super();
noh=10;
sub_name="OOPC";
}
void display()
{
super.show();
System.out.println(noh+","+sub_name);
}
}
public class SuperDemo
{
public static void main(String[] args){
Tstaff t1=new Tstaff();
t1.display();
}
}
```

Output:

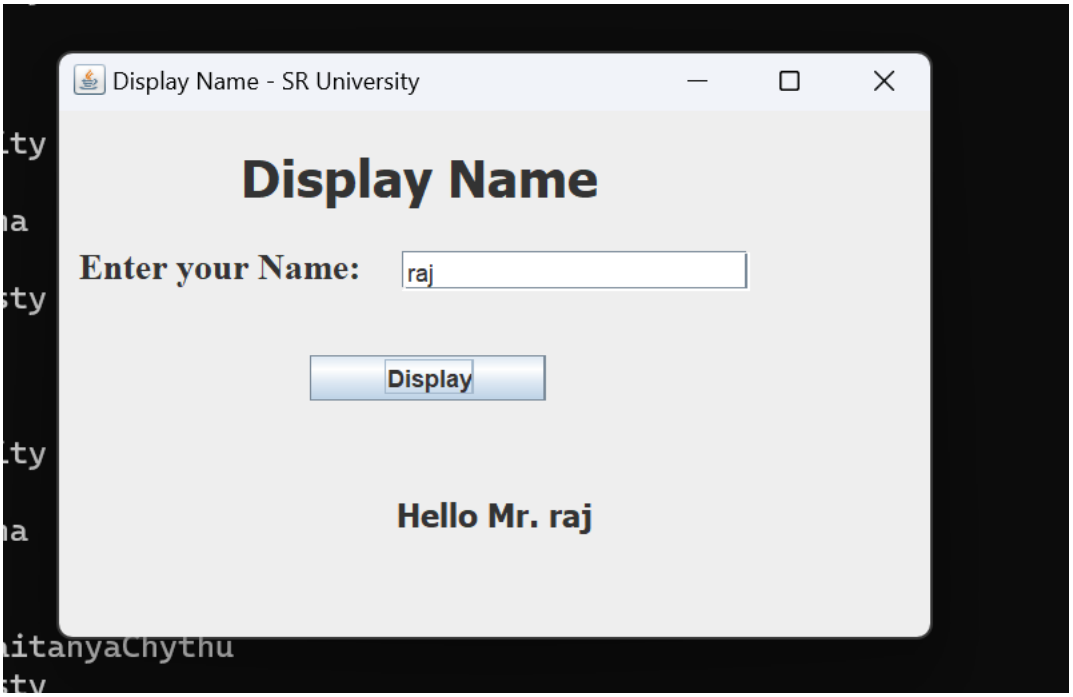

- **SwingDemo**

```
import java.awt.EventQueue;

import javax.swing.JFrame;
import java.awt.Toolkit;
import javax.swing.JLabel;
import java.awt.Font;
import javax.swing.JTextField;
import javax.swing.JButton;
import javax.swing.SwingConstants;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class SwingDemo {

private JFrame frmSrUniversity;
private JTextField textField;

/**
* Launch the application.
*/
public static void main(String[] args) {
EventQueue.invokeLater(new Runnable() {
public void run() {
try {
SwingDemo window = new SwingDemo();
window.frmSrUniversity.setVisible(true);
} catch (Exception e) {
e.printStackTrace();
}
}
});
}

/**
```

```
* Create the application.
*/
public SwingDemo() {
initialize();
}

/**
* Initialize the contents of the frame.
*/
private void initialize() {
frmSrUniversity = new JFrame();
frmSrUniversity.setIconImage(Toolkit.getDefaultToolkit().getImage("C:\\Users\\HP\\Pictures\\SRA_9851.JPG"));
frmSrUniversity.setTitle("Display Name - SR University");
frmSrUniversity.setBounds(100, 100, 450, 300);
frmSrUniversity.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frmSrUniversity.getContentPane().setLayout(null);

JLabel lblNewLabel = new JLabel("Enter your Name:");
lblNewLabel.setFont(new Font("Times New Roman", Font.BOLD, 18));
lblNewLabel.setBounds(10, 68, 189, 21);
frmSrUniversity.getContentPane().add(lblNewLabel);

JLabel lblNewLabel_1 = new JLabel("Display Name");
lblNewLabel_1.setFont(new Font("Tahoma", Font.BOLD, 26));
lblNewLabel_1.setBounds(91, 11, 250, 45);
frmSrUniversity.getContentPane().add(lblNewLabel_1);

textField = new JTextField();
textField.setBounds(172, 70, 174, 20);
frmSrUniversity.getContentPane().add(textField);
textField.setColumns(10);

JButton btnNewButton = new JButton("Display");
```

```
btnNewButton.setBounds(126, 122, 118, 23);
frmSrUniversity.getContentPane().add(btnNewButton);

JLabel lblNewLabel_2 = new JLabel("");
lblNewLabel_2.setFont(new Font("Tahoma", Font.BOLD, 16));
lblNewLabel_2.setHorizontalAlignment(SwingConstants.CENTER);
lblNewLabel_2.setBounds(10, 192, 416, 21);

frmSrUniversity.getContentPane().add(lblNewLabel_2);
btnNewButton.addActionListener(new ActionListener() {
public void actionPerformed(ActionEvent e) {
String name = textField.getText();
lblNewLabel_2.setText("Hello Mr. " + name);
}
});                                                                    }
}
```

Output:



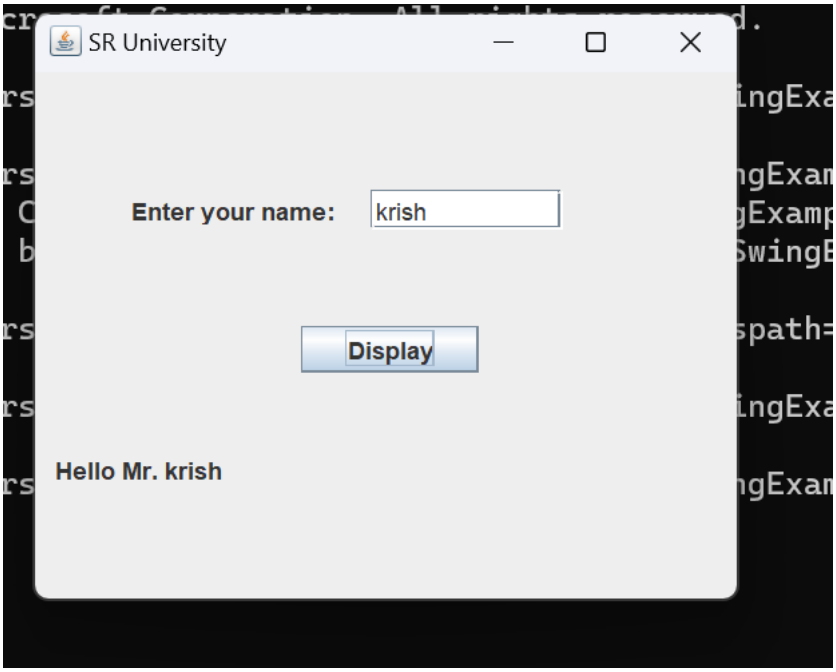

- **SwingExample**

```
import java.awt.EventQueue;

import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JTextField;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;

public class SwingExample {

private JFrame frmSrUniversity;
private JTextField textField;

/**
* Launch the application.
*/
public static void main(String[] args) {
EventQueue.invokeLater(new Runnable() {
public void run() {
try {
SwingExample window = new SwingExample();
window.frmSrUniversity.setVisible(true);
} catch (Exception e) {
e.printStackTrace();
}
}
});
}
/**
* Create the application.
*/
public SwingExample() {
```

```
initialize();
}

/**
* Initialize the contents of the frame.
*/
private void initialize() {
frmSrUniversity = new JFrame();
frmSrUniversity.setTitle("SR University");
frmSrUniversity.setBounds(100, 100, 365, 300);
frmSrUniversity.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
frmSrUniversity.getContentPane().setLayout(null);

JLabel lblNewLabel = new JLabel("Enter your name:");
lblNewLabel.setBounds(48, 62, 110, 14);
frmSrUniversity.getContentPane().add(lblNewLabel);

textField = new JTextField();
textField.setBounds(168, 59, 96, 20);
frmSrUniversity.getContentPane().add(textField);
textField.setColumns(10);

JButton btnNewButton = new JButton("Display");
btnNewButton.setBounds(133, 127, 89, 23);
frmSrUniversity.getContentPane().add(btnNewButton);

JLabel lblNewLabel_1 = new JLabel("");
lblNewLabel_1.setBounds(10, 191, 331, 14);
frmSrUniversity.getContentPane().add(lblNewLabel_1);

btnNewButton.addActionListener(new ActionListener() {
public void actionPerformed(ActionEvent e) {
String name = textField.getText();
lblNewLabel_1.setText("Hello Mr. " + name);
```

```
}
});
}
}
```

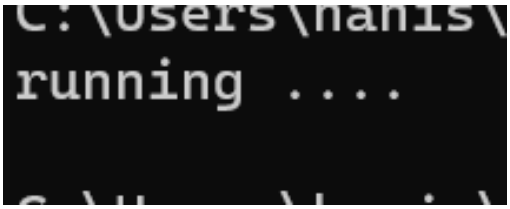
Output:




- **TestCallRun**

```
public class TestCallRun extends Thread
{
public void run()
{
System.out.println("running ....");
}
public static void main(String[] args)
{
TestCallRun t1=new TestCallRun();
t1.run(); //fine but does not start a separate call stack
}
}
```

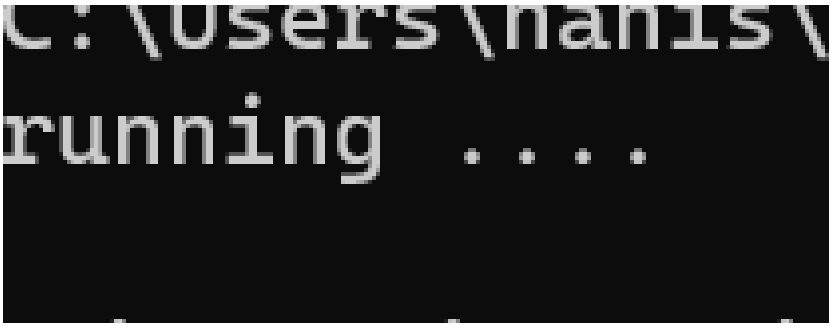
Output:




- **TestThreadTwice**

```
public class TestThreadTwice extends Thread
{
public void run()
{
System.out.println("running ....");
}
public static void main(String[] args)
{
TestThreadTwice t1=new TestThreadTwice();
t1.start();
t1.start();
}
}
```

Output:

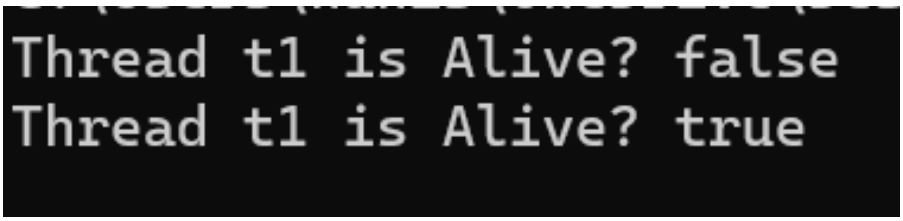



- **ThreadAlive**

```
class ThreadAlive extends Thread
{
public void run()
{
try
{
Thread.sleep(3000);
System.out.println("Thread t1 is Alive? " + Thread.currentThread().isAlive());
```

```
}
catch(InterruptedException e)
{}
}
}
public class ThreadIsAlive
{
public static void main(String[] args)
{
ThreadAlive t1=new ThreadAlive();
System.out.println("Thread t1 is Alive? " + t1.isAlive());
t1.start();
}
}
```

Output:

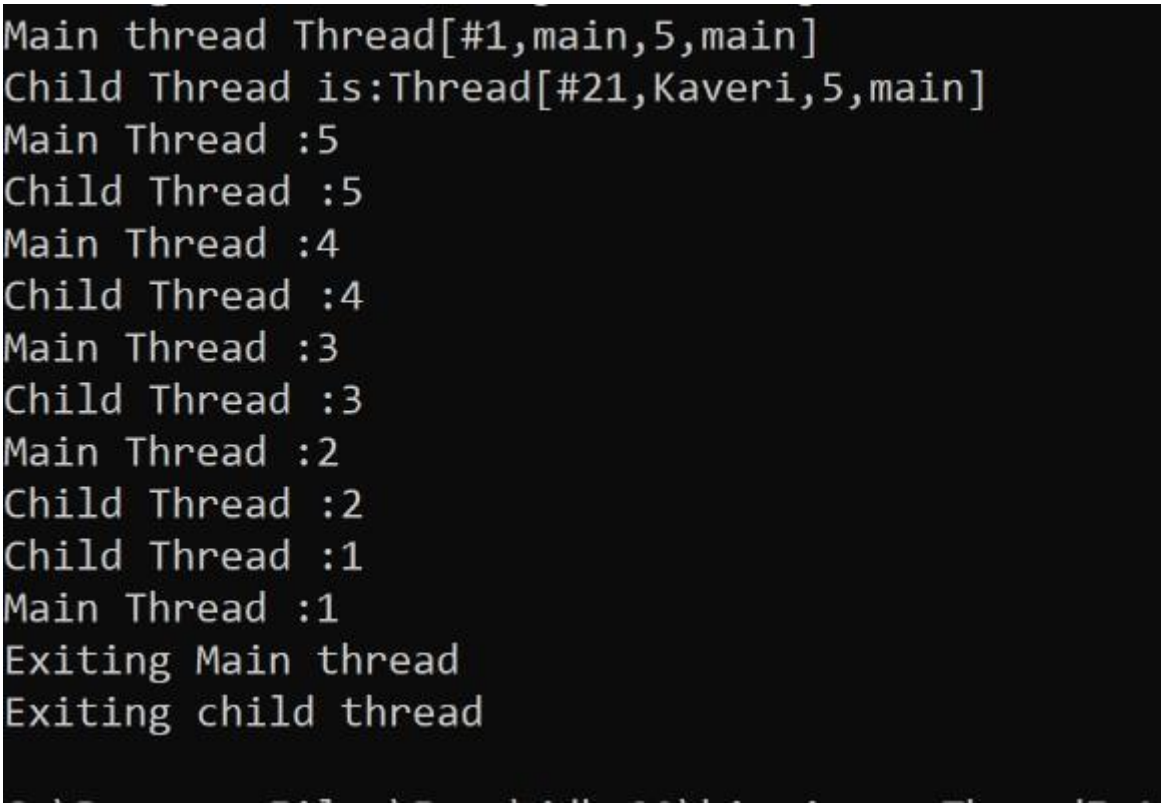



- **ThreadDemo**

```
class MyThread implements Runnable
{
Thread t;
MyThread(String tname)
{
t=new Thread(this,tname);
System.out.println("Child Thread is:" +  t);
t.start();
}
public void run()
{
try
{
for(int i=5;i>0;i--)
```

```
{
System.out.println("Child Thread :" +i);
Thread.sleep(50);
}
}
catch(InterruptedException e)
{
System.out.println("Child interrupted");
}
System.out.println("Exiting child thread");
}
}
class ThreadDemo
{
public static void main(String[] args)
{
System.out.println("Main thread " + Thread.currentThread());
new MyThread("Kaveri");
try
{
for(int i=5;i>0;i--)
{
System.out.println("Main Thread :" +i);
Thread.sleep(50);}
}
catch(InterruptedException e)
{
System.out.println("Main Thread interrupted");
}
System.out.println("Exiting Main thread");
}
}
```

Output:

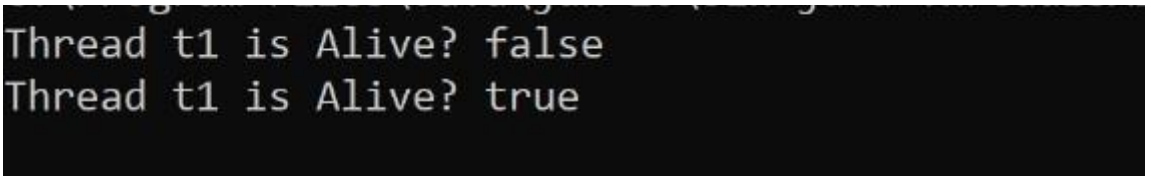



- **ThreadIsAlive**

```
class ThreadAlive extends Thread
{
public void run()
{
try
{
Thread.sleep(3000);
System.out.println("Thread t1 is Alive? " + Thread.currentThread().isAlive());
}
catch(InterruptedException e)
{}
}
}
public class ThreadIsAlive
{
public static void main(String[] args)
{
ThreadAlive t1=new ThreadAlive();
System.out.println("Thread t1 is Alive? " + t1.isAlive());
```

```
t1.start();
}
}
```

Output:




- **TwoArrayDemo**

```
public class TwoArrayDemo
{
public static void main(String[] args)
{
int t[][]=new int[][]{{1,2,3},{4,5,6},{7,8,9}};
for(int i=0;i<3;i++)
{
  for(int j=0;j<3;j++)
   {
     System.out.println(t[i][j]+" ");
}
System.out.println();
}
System.out.println("Juggle Array");
int t1[][]=new int[][]{{1,2},{4,5,6,7},{8},{9,10,11,12,13}};
for(int i=0;i<t1.length;i++)
{
for(int j=0;j<t1[i].length;j++)
{
System.out.println(t1[i][j]+" ");
}
System.out.println();
}
}
}
```

Output:


- **Uppercase**

```
import java.util.*;
public class Uppercase {
   public static void main(String[] args) {
      //Write your code here
      String s;
      Scanner s1=new Scanner(System.in);
      s=s1.nextLine();
      System.out.println(s.toUpperCase());
   }
}
```

Output:


- **AverageArray**

```
 import java.util.*;
public class AverageArray {
   public static void main(String[] args) {
      //write your code here
      Scanner in=new Scanner(System.in);
      String scores;
```

```
        scores=in.nextLine();
        String a[]=(scores.split("\\s"));
        int i,m_score=-1,tot_score=0;
        int[] score=new int[a.length];
        double avg_score=0;
        for(i=0;i<a.length;i++)
        {
           score[i]=Integer.parseInt(a[i]);
        }
        for(i=0;i<a.length;i++)
        {
           if(m_score<score[i])
           {
              m_score=score[i];
           }
           tot_score+=score[i];
        }
        avg_score=tot_score/(a.length);
        System.out.println("Highest Score is: "+m_score);
        System.out.println("Average Score is: "+avg_score);
    }
}
```

Output:

```
3
Highest Score is: 3
Average Score is: 3.0
```

- **WrapperDemo**

```
class WrapperDemo{
public static void main(String[] args){
 Integer i=10;
 int i1=i;
System.out.println(i+"\t"+i1);
System.out.println("the hexadecimal of 16 is :" +Integer.toHexString(16));
System.out.println("the octal value of 16 is :" +Integer.toOctalString(16));
```

```
System.out.println("the binary value of 16 is :" +Integer.toBinaryString(16));

}

}
```

Output: