Name: Pancham Sheoran Roll no.: 1918523 Section: A

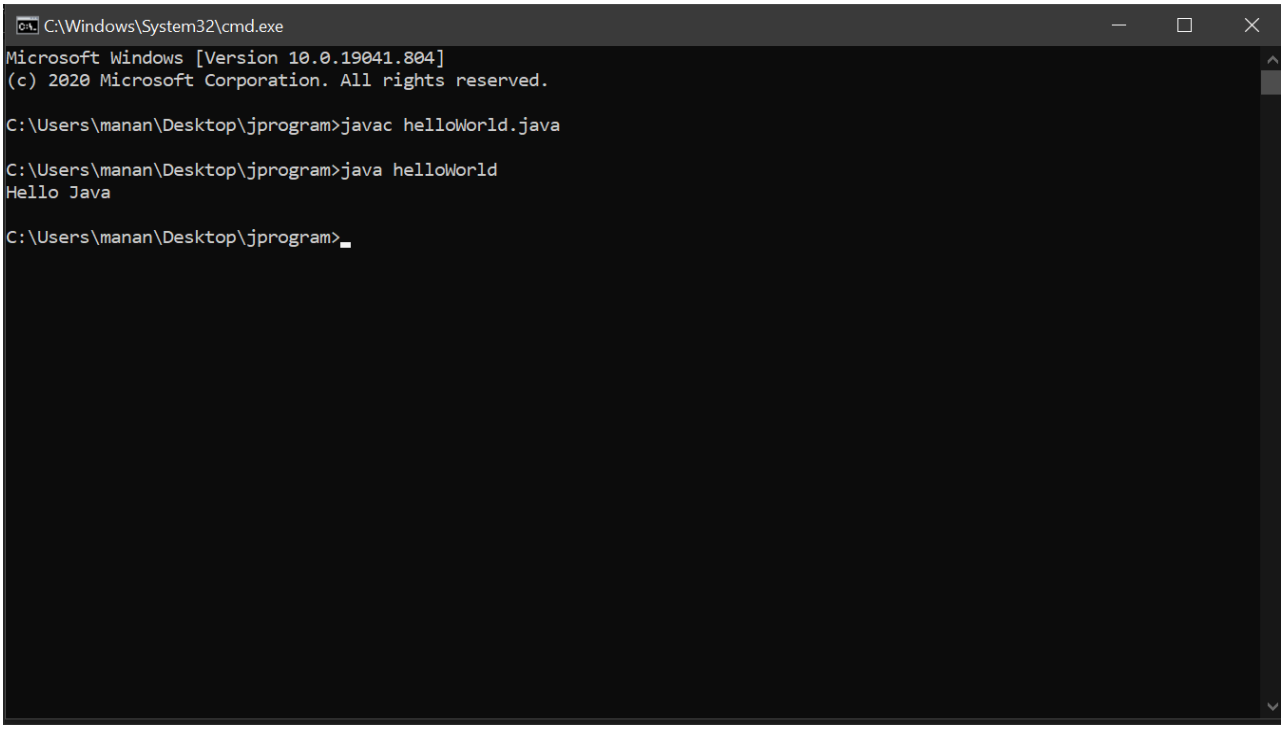
Objective

1. Write a program to print hello java using Command prompt.

Source Code:

```
public class helloWorld {

	public static void main(String[] args)
	{
		System.out.println("Hello Java");
	}

}
```

Output:



Objective

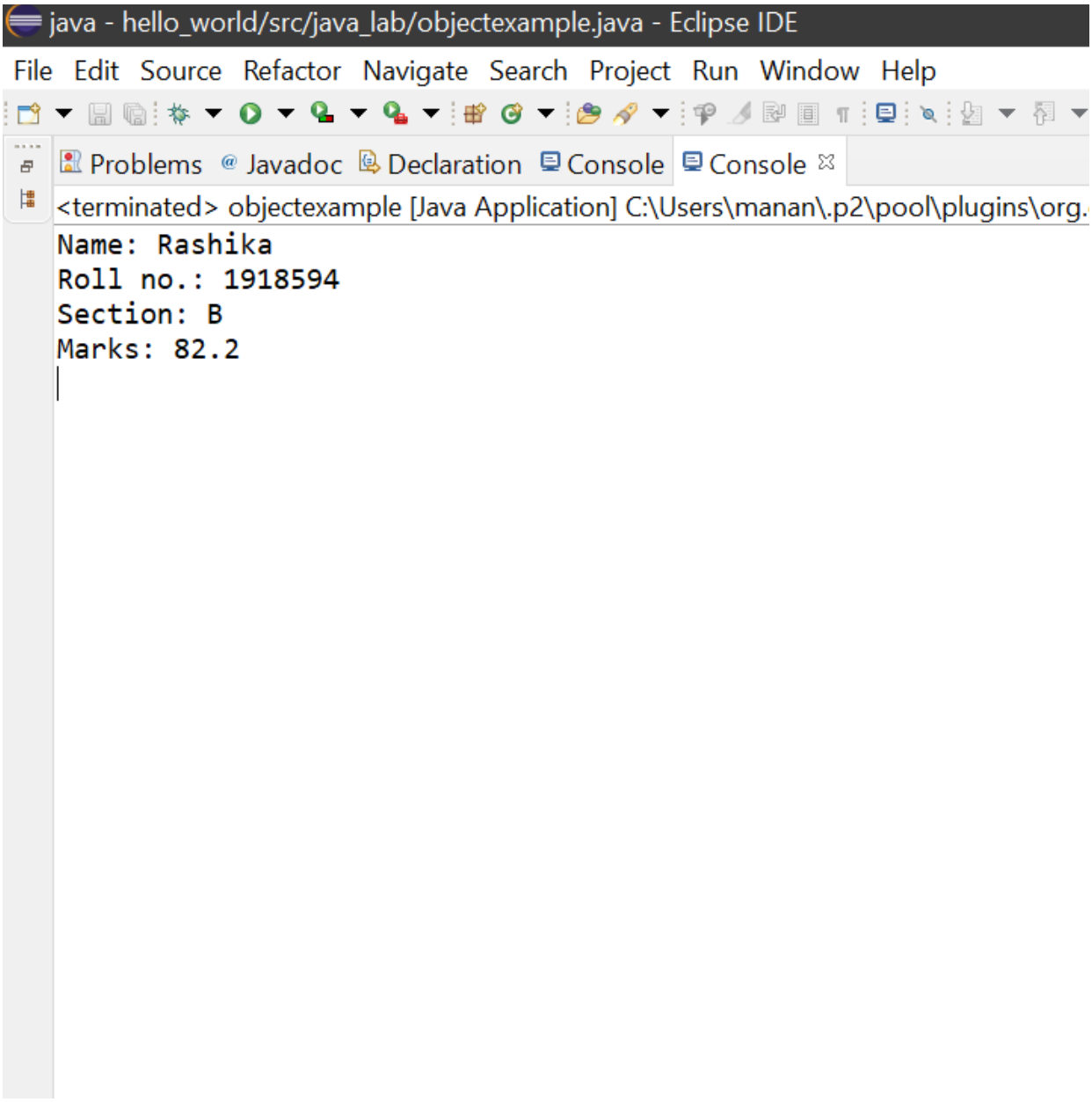
2:Write a program to demonstrate the method which creates the object of the class.

Source Code:

```
package java_lab;

class test
{
	String name;
	int rollno;
	char sec;
	double marks;
	void input(String a, int b, char c, double d)
	{
		name=a;
		rollno=b;
		sec=c;
		marks=d;
	}
	void display()
	{
		System.out.println("Name: "+name);
		System.out.println("Roll no.: "+rollno);
		System.out.println("Section: "+sec);
		System.out.println("Marks: "+marks);
	}
}

public class objectexample
{

	public static void main(String[] args)
	{
		test ob = new test();
		ob.input("Rashika", 1918594, 'B', 82.2);
		ob.display();
```

```
    }
}
```

Output


java - hello_world/src/java_lab/objectexample.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> objectexample [Java Application] C:\Users\manan\.p2\pool\plugins\org.
Name: Rashika
Roll no.: 1918594
Section: B
Marks: 82.2

Objective

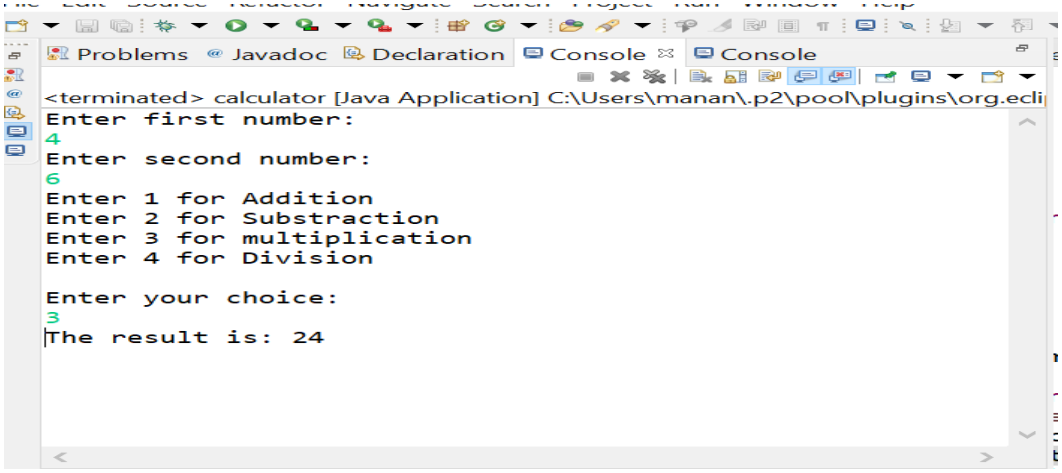
3: Write a program to design a calculator which perform addition, subtraction, division, multiplication using Switch statement.

Source Code:

```
package java_lab;
import java.util.*;

class abc
{
	int add(int x, int y)
	{
		return x+y;
	}
	int substract(int x, int y)
	{
		return x-y;
	}
	int multiply(int x, int y)
	{
		return x*y;
	}
	int divide(int x, int y)
	{
		return x/y;
	}
}
public class calculator
{
	public static void main(String[] args)
	{
		Scanner scan = new Scanner(System.in);
		int x, y, choice;
		abc ob = new abc();
		System.out.println("Enter first number: ");
		x=scan.nextInt();
		System.out.println("Enter second number: ");
```

```
            y=scan.nextInt();

            System.out.println("Enter 1 for Addition\nEnter 2 for
            Substraction\nEnter 3 for multiplication\nEnter 4 for
            Division\n\nEnter your choice:  ");

            choice=scan.nextInt();
            switch(choice)
            {
                  case 1: System.out.println("The result is: "+ob.add(x, y));
                              break;
                  case 2: System.out.println("The result is: "+ob.substract(x, y));
                              break;
                  case 3: System.out.println("The result is: "+ob.multiply(x, y));
                              break;
                  case 4: System.out.println("The result is: "+ob.divide(x, y));
                              break;
                  default:System.out.println("Invalid Choice!!!");

            }
      }

}
```

Output



Objective

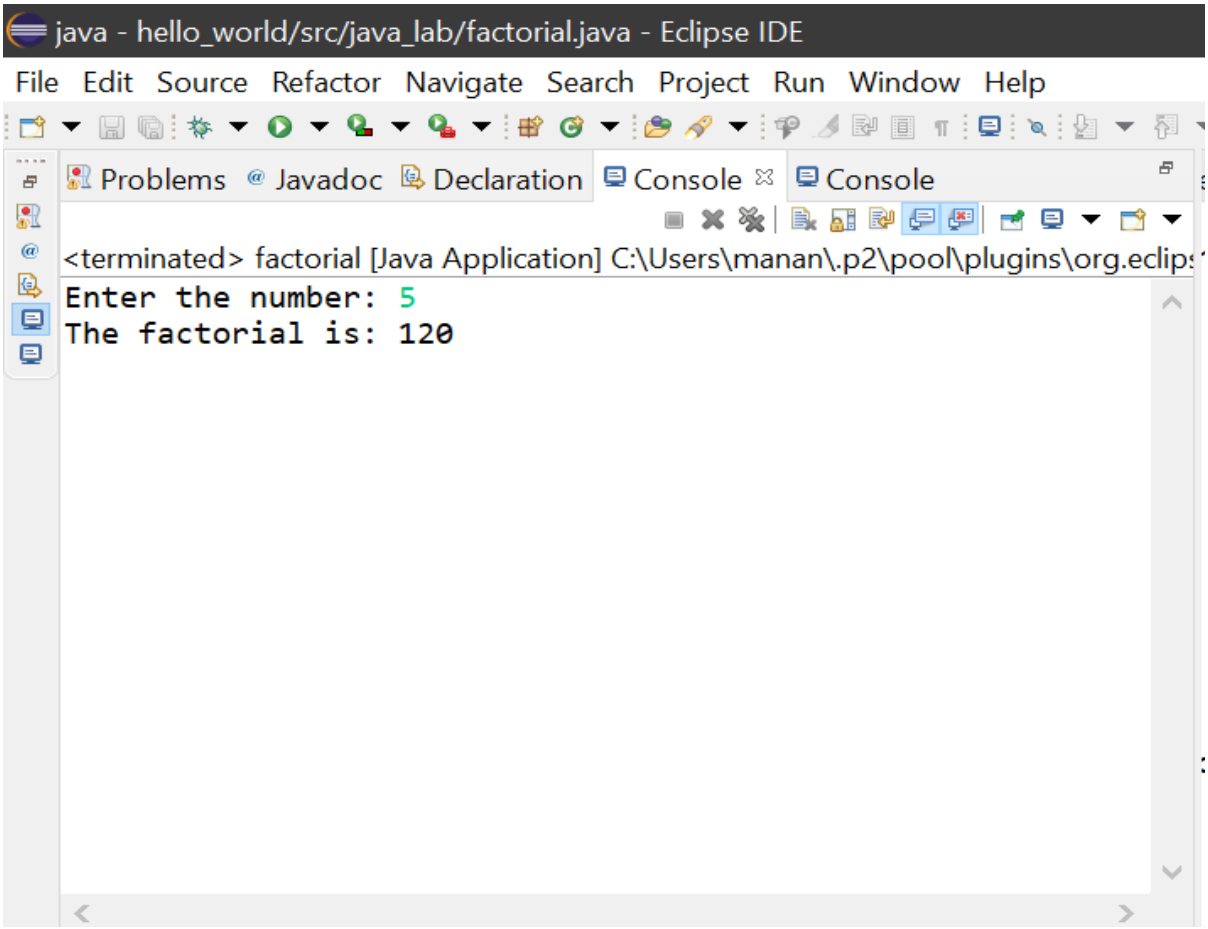
4: Write a program to find the factorial of a number using class and method.

Source Code:

```
package java_lab;
import java.util.Scanner;

class check
{
	int i, sum=0, f=1;
	void input()
	{

	}
	int fact(int n)
	{
		if(n==0)
			return 1;
		else
			return(n*fact(n-1));
	}
}
public class factorial
{
	public static void main(String[] args)
	{
		check ob= new check();
		int n;
		Scanner scan= new Scanner(System.in);
		System.out.print("Enter the number: ");
		n=scan.nextInt();
		System.out.print("The factorial is: "+ob.fact(n));
	}
}
```

Name: Pancham Sheoran Roll no.: 1918523 Section: A

Output



Objective

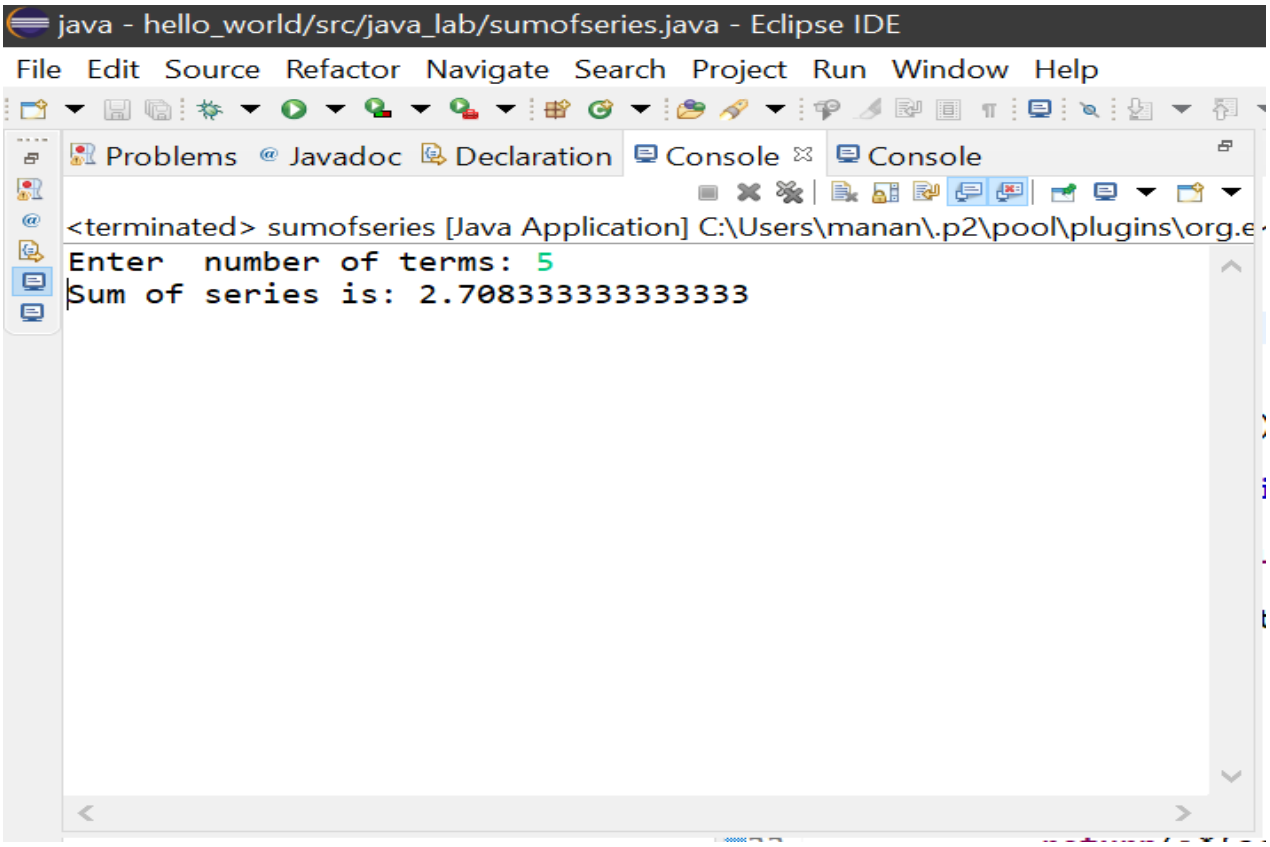
5:Write a program to find out sum of series 1/1!+2/2!+3/3!.....N terms.

Source Code:

```
package java_lab;

import java.util.Scanner;

class checkseries
{
	int i;
	double sum=0.0;
	void checksum(int n)
	{
		for(i=1; i<=n; i++)
		{
			sum=sum+(double)i/fact(i);
		}
		System.out.println("Sum of series is: "+sum);
	}
	int fact(int i)
	{
		if(i==0)
			return 1;
		else
			return(i*fact(i-1));
	}
}

public class sumofseries
{
	public static void main(String[] args)
	{
		checkseries ob=new checkseries();
		int n;
		Scanner scan= new Scanner(System.in);
		System.out.print("Enter  number of terms: ");
		n=scan.nextInt();
```

```
            ob.checksum(n);
        }
}
```

Output



Objective

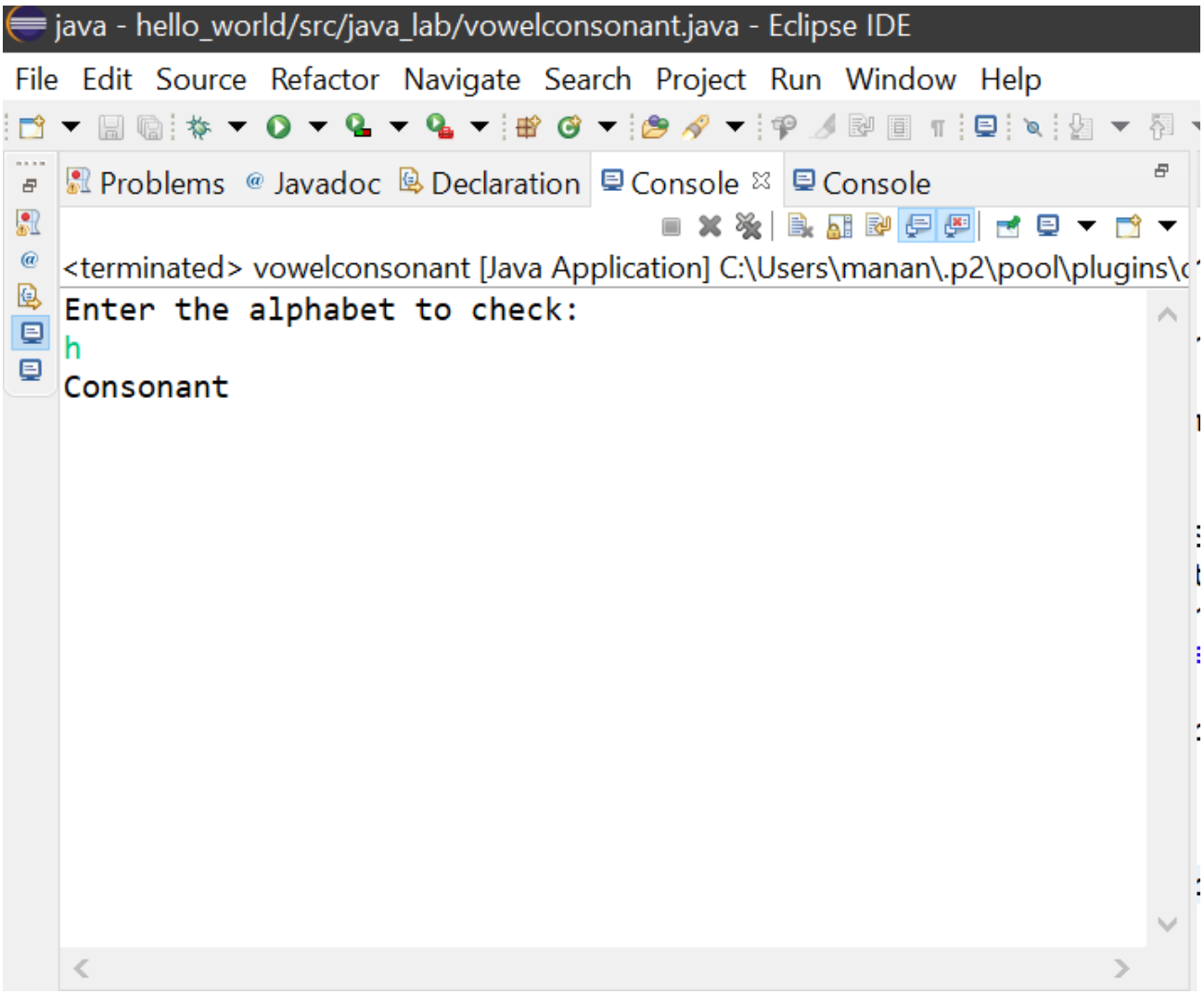
6: Write a program to check the character is vowel or consonant.

Source Code:

```
package java_lab;
import java.util.Scanner;

public class vowelconsonant
{
	public static void main(String[] args)
	{
		char c;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter the alphabet to check: ");
		c=sc.next().charAt(0);

if(c=='a'||c=='e'||c=='i'||c=='o'||c=='u'||c=='A'||c=='E'||c=='I'||c=='O'||c=='U')
		{
			System.out.println("Vowel");
		}
		else
		{
			System.out.println("Consonant");
		}
	}
}
```

Name: Pancham Sheoran Roll no.: 1918523 Section: A

Output



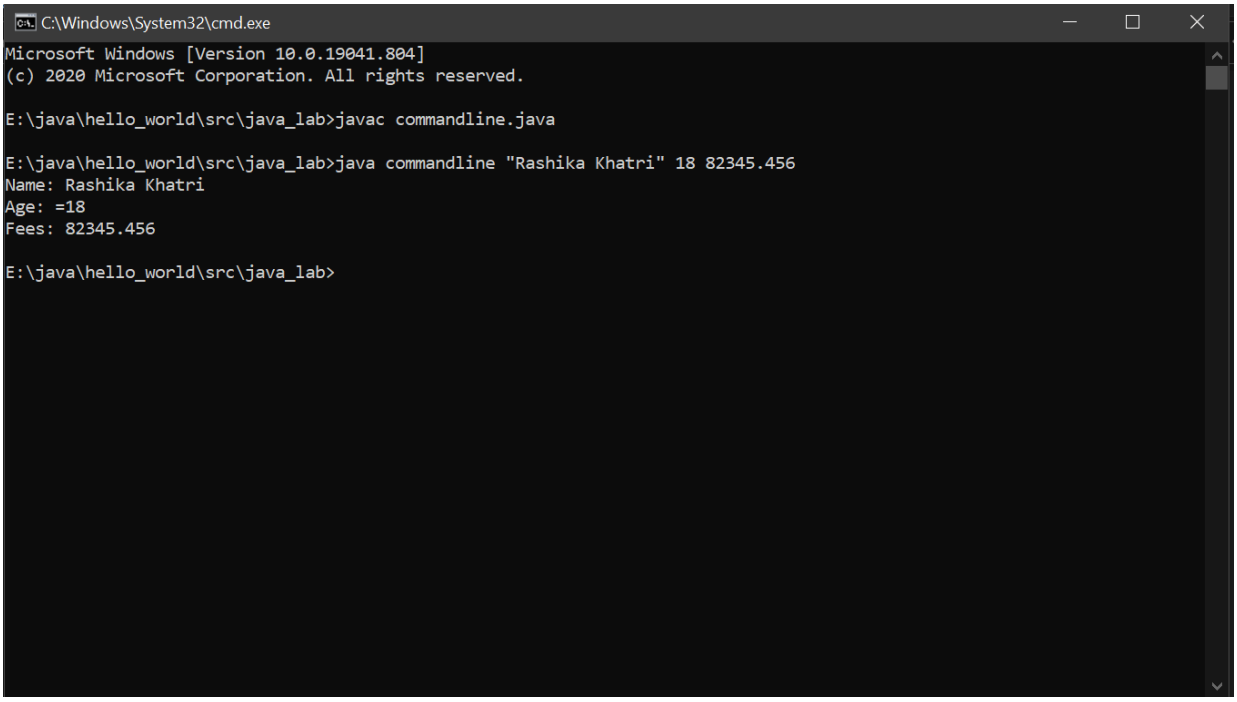
Objective

7: Write a program to demonstrate different methods which accept the input from the user using command line argument.

Source Code:

```
package java_lab;

public class commandline
{
	public static void main(String[] args)
	{
		String name;
		int age;
		double fees;
		name=args[0];
		age=Integer.parseInt(args[1]);
		fees=Double.parseDouble(args[2]);
		System.out.println("Name: "+name);
		System.out.println("Age: "+age);
		System.out.println("Fees: "+fees);

	}
}
```

Output


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.804]
(c) 2020 Microsoft Corporation. All rights reserved.
E:\java\hello_world\src\java_lab>javac commandline.java
E:\java\hello_world\src\java_lab>java commandline "Rashika Khatri" 18 82345.456
Name: Rashika Khatri
Age: =18
Fees: 82345.456
E:\java\hello_world\src\java_lab>

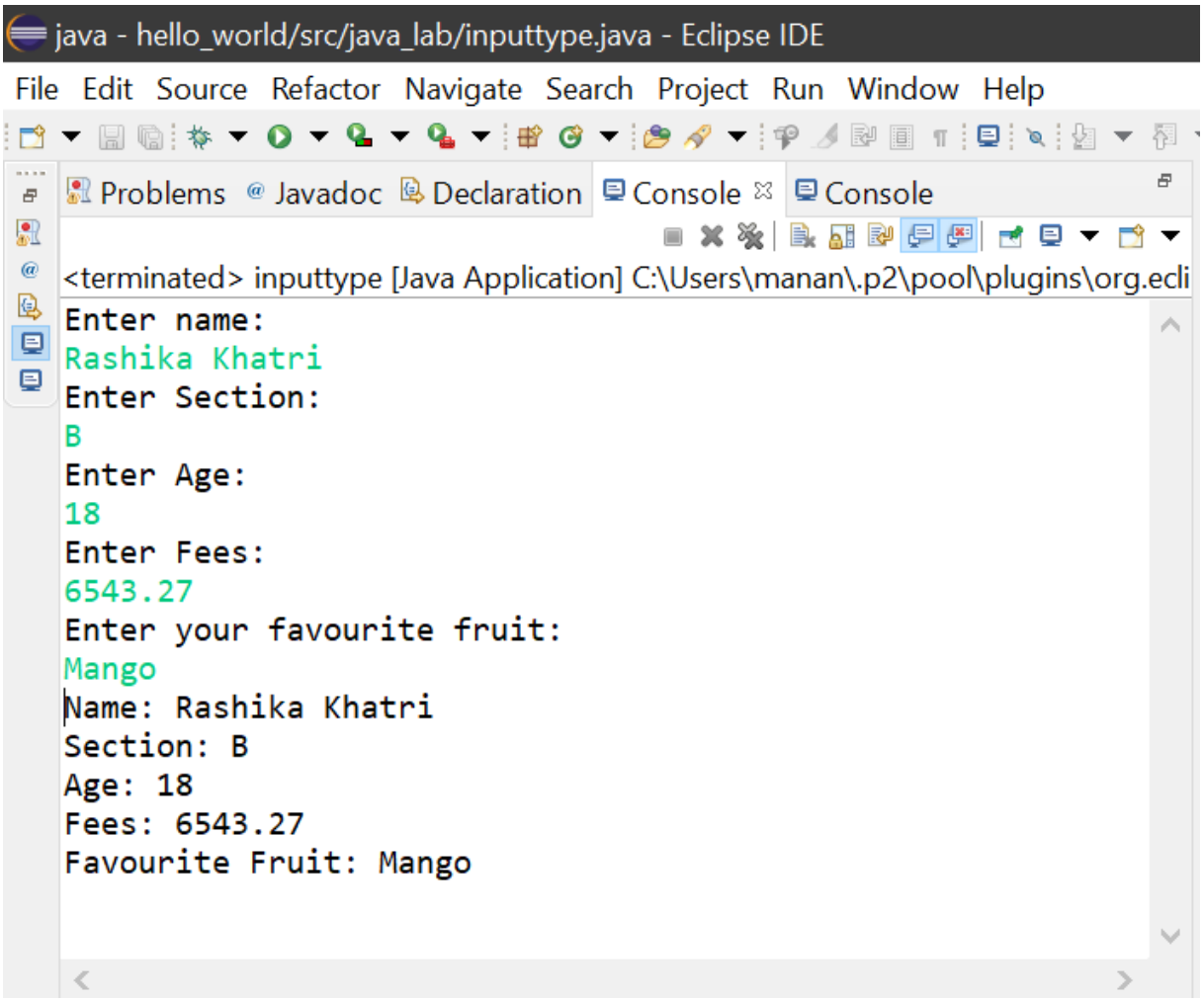
Objective

8: Write a program in java to check demonstrate different methods which accept input from the user using Scanner class.

Source Code:

```
package java_lab;

import java.util.*;
public class inputtype
{
	public static void main(String[] args)
	{
		String name;
		int age;
		double fees;
		char c;
		String str;
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter name: ");
		name=sc.nextLine();
		System.out.println("Enter Section: ");
		c=sc.next().charAt(0);
		System.out.println("Enter Age: ");
		age=sc.nextInt();
		System.out.println("Enter Fees: ");
		fees=sc.nextDouble();
		System.out.println("Enter your favourite fruit: ");
		str=sc.next();
		System.out.println("Name: "+name);
		System.out.println("Section: "+c);
		System.out.println("Age: "+age);
		System.out.println("Fees: "+fees);
		System.out.println("Favourite Fruit: "+str);
	}

}
```

Output


java - hello_world/src/java_lab/inputtype.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> inputtype [Java Application] C:\Users\manan\.p2\pool\plugins\org.ecli
Enter name:
Rashika Khatri
Enter Section:
B
Enter Age:
18
Enter Fees:
6543.27
Enter your favourite fruit:
Mango
Name: Rashika Khatri
Section: B
Age: 18
Fees: 6543.27
Favourite Fruit: Mango

Objective

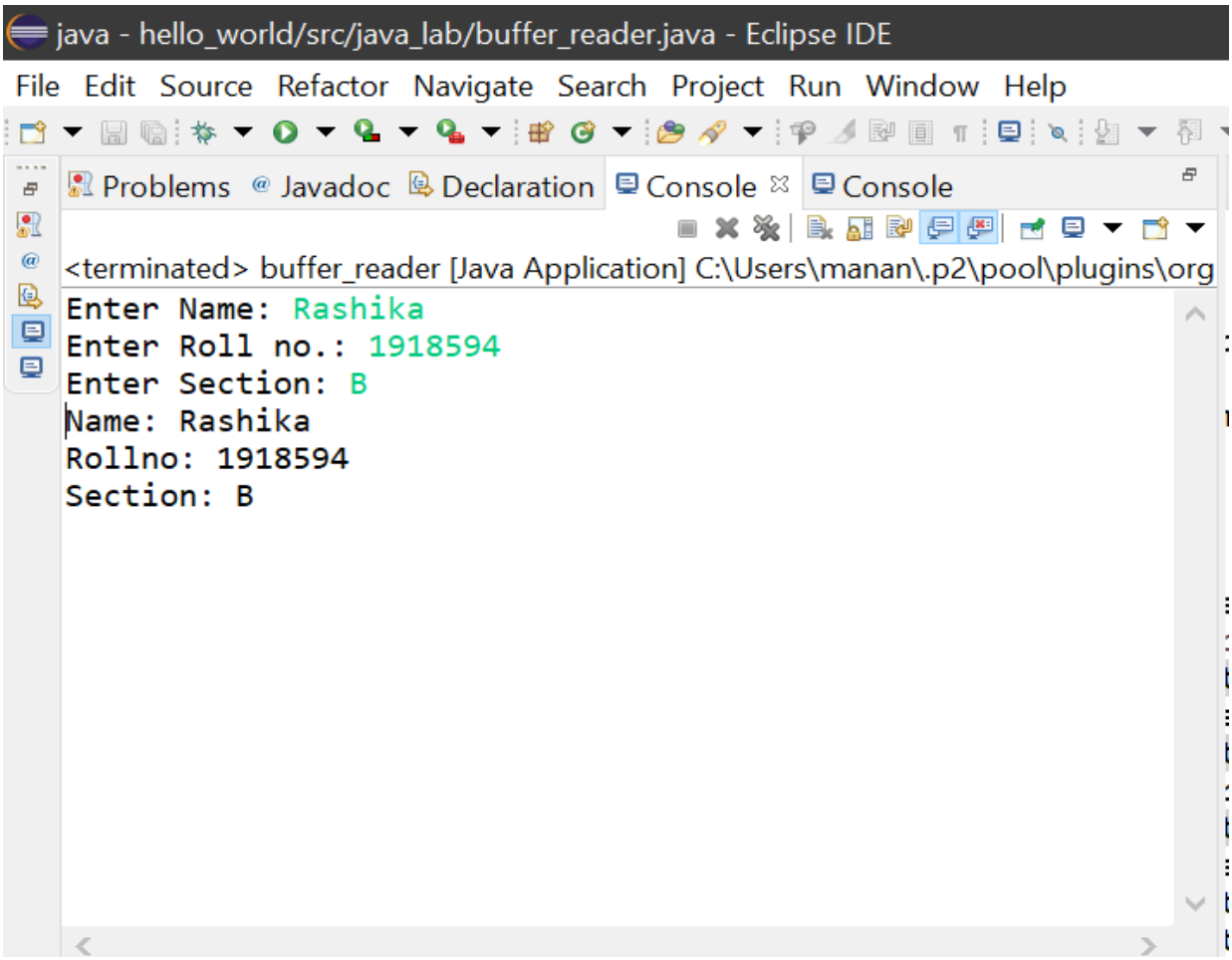
9: Write a program to demonstrate different methods which accept the input from the user using Buffered Reader.

Source Code:

```
package java_lab;
import java.io.*;

public class buffer_reader
{
	public static void main(String[] args)throws IOException
	{
		String name;
		int rollno;
		char sec;
		InputStreamReader isr=new InputStreamReader(System.in);
		BufferedReader br=new BufferedReader(isr);
		System.out.print("Enter Name: ");
		name=br.readLine();
		System.out.print("Enter Roll no.: ");
		rollno=Integer.parseInt(br.readLine());
		System.out.print("Enter Section: ");
		sec=(char)br.read();
		System.out.println("Name: "+name);
		System.out.println("Rollno: "+rollno);
		System.out.println("Section: "+sec);
	}
}
```

Name: Pancham Sheoran Roll no.: 1918523 Section: A

Output



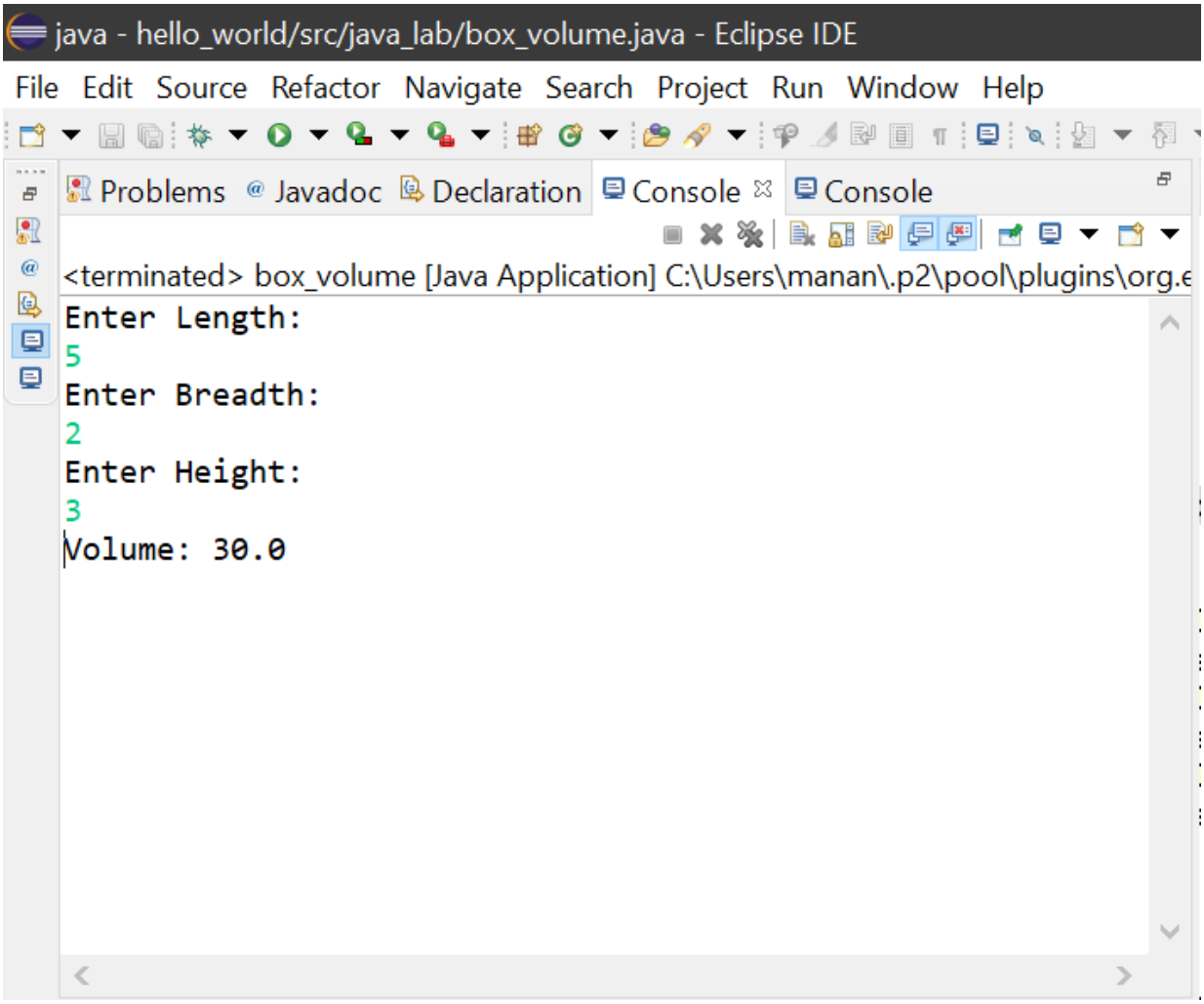
Objective

10:Write a program in java to find volume of the box using methods and Scanner class.

Source Code:

```
package java_lab;
import java.util.*;
class vol
{
	double vol;
	double l, b, h;
	Scanner scan= new Scanner(System.in);
	void input()
	{
	  System.out.println("Enter Length: ");
	  l=scan.nextDouble();
	  System.out.println("Enter Breadth: ");
	  b=scan.nextDouble();
	  System.out.println("Enter Height: ");
	  h=scan.nextDouble();
	}
	void display()
	{
		vol=l*b*h;
		System.out.println("Volume: "+vol);
	}
}
public class box_volume
{
	public static void main(String[] args)
	{
	  vol ob=new vol();
	  ob.input();
	  ob.display();
	}
}
```

Output


java - hello_world/src/java_lab/box_volume.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> box_volume [Java Application] C:\Users\manan\.p2\pool\plugins\org.e
Enter Length:
5
Enter Breadth:
2
Enter Height:
3
Volume: 30.0

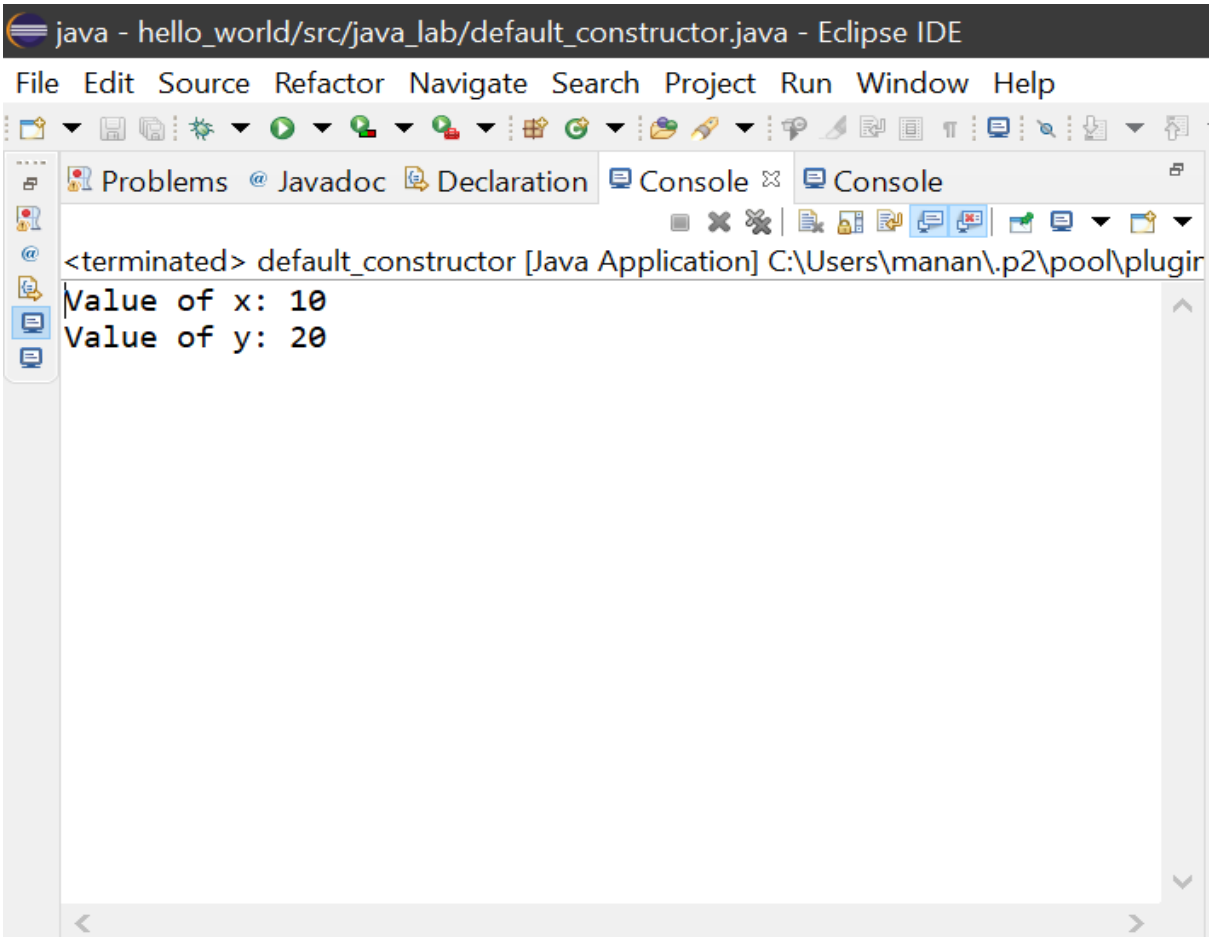
Objective

11:Write a program in java to demonstrate the use of default constructor.

Source Code:

```
package java_lab;

class dconsteg
{
	int x, y;
	dconsteg()
	{
		x=10;
		y=20;
	}
	void display()
	{
		System.out.println("Value of x: "+x);
		System.out.println("Value of y: "+y);
	}
}
public class default_constructor {

	public static void main(String[] args)
	{
		dconsteg ob= new dconsteg();
		ob.display();
	}

}
```

Output


java - hello_world/src/java_lab/default_constructor.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> default_constructor [Java Application] C:\Users\manan\.p2\pool\plugir
Value of x: 10
Value of y: 20

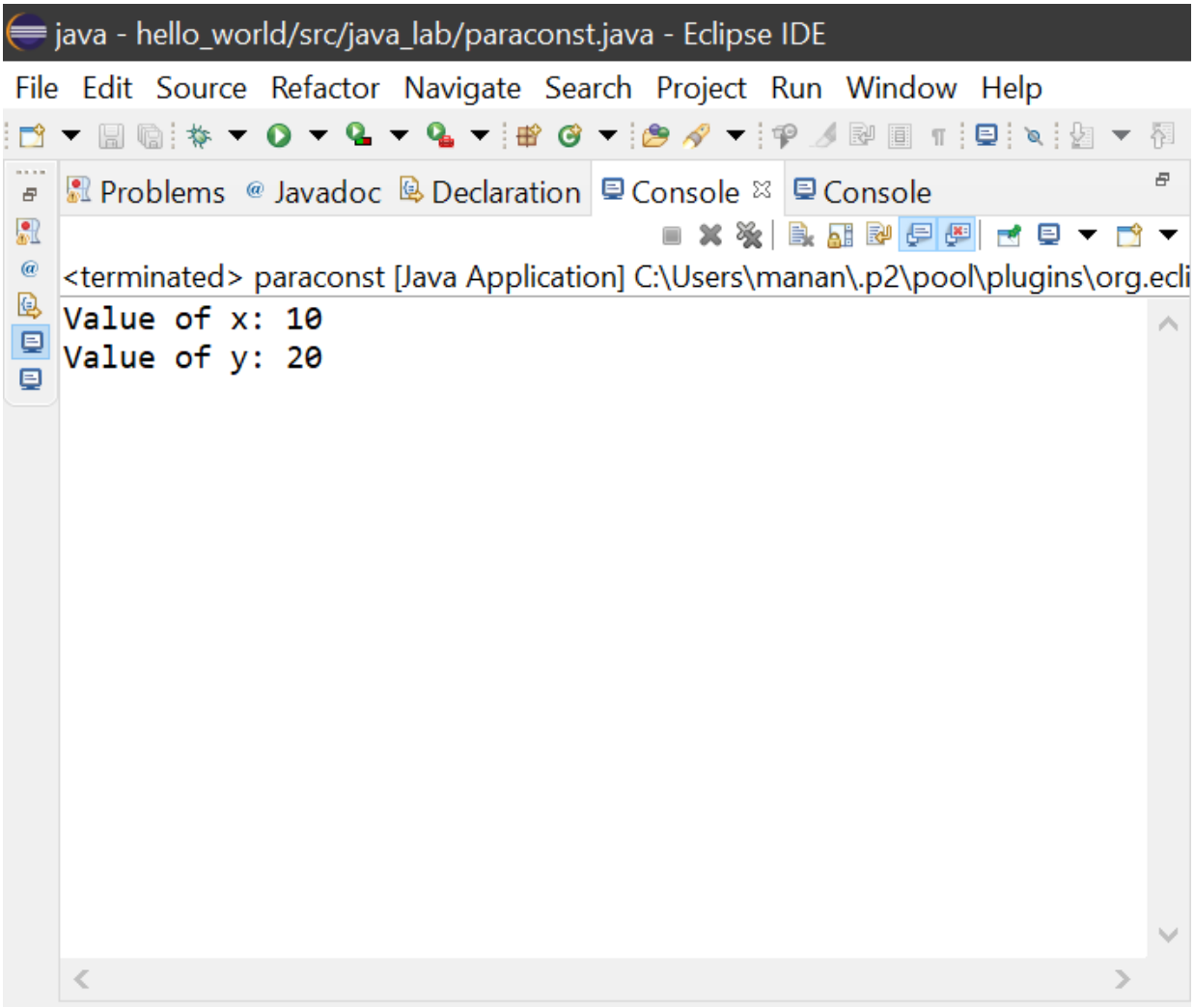
Objective

12: Write a program in java to demonstrate the use of parameterized constructor.

Source Code:

```
package java_lab;

class pconsteg
{
	int x, y;
	pconsteg(int a, int b)
	{
		x=a;
		y=b;
	}
	void display()
	{
		System.out.println("Value of x: "+x);
		System.out.println("Value of y: "+y);
	}
}
public class paraconst {

	public static void main(String[] args)
	{
		pconsteg ob= new pconsteg(10, 20);
		ob.display();
	}

}
```

Output


java - hello_world/src/java_lab/paraconst.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> paraconst [Java Application] C:\Users\manan\.p2\pool\plugins\org.ecli
Value of x: 10
Value of y: 20

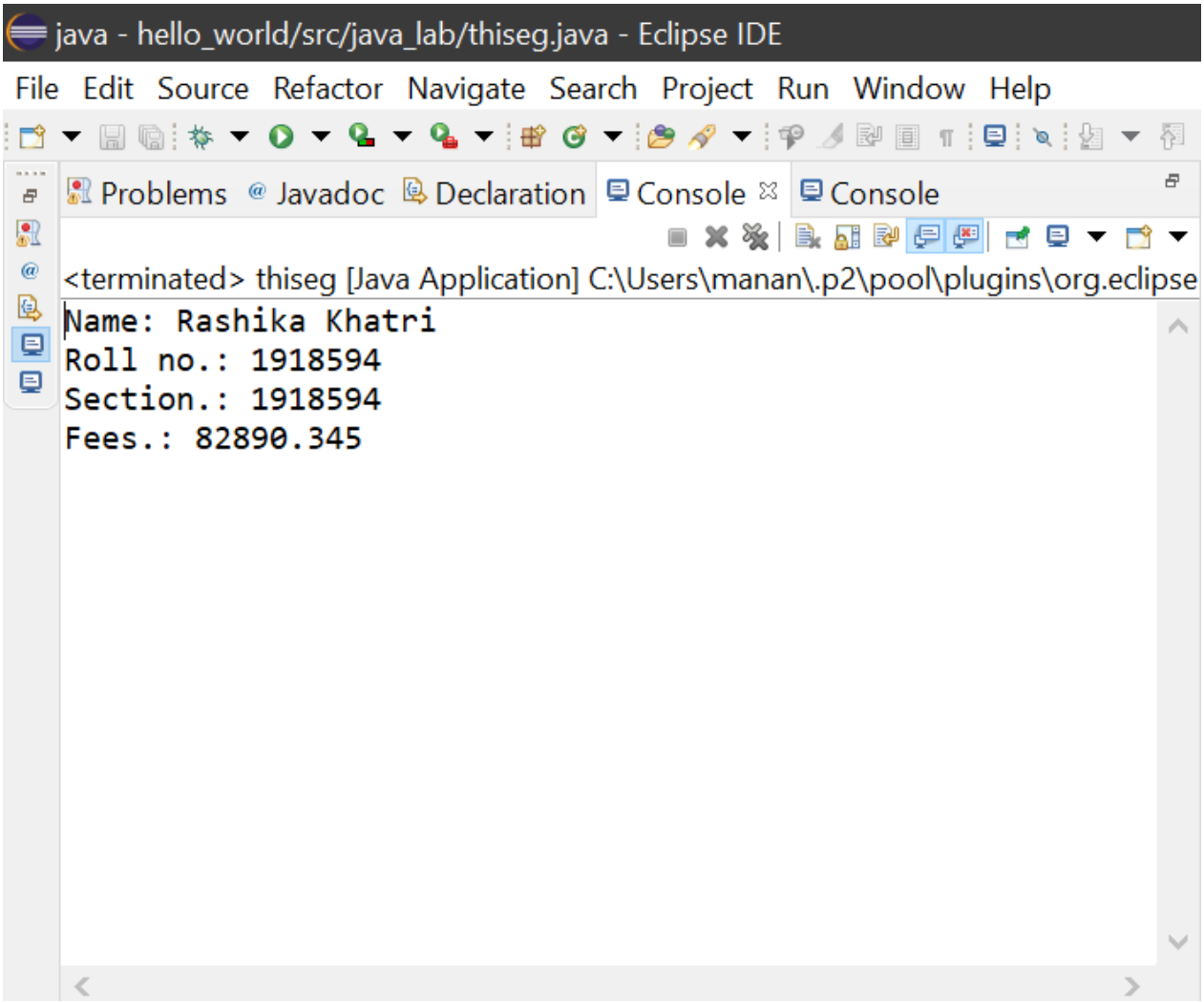
Objective

13: Write a program in java to demonstrate the use of this keyword.

Source Code:

```
package java_lab;

class teg
{
	int roll_num;
	char sec;
	String name;
	double fees;
	teg(int roll_num, char sec, String name, double fees)
	{
		this.name=name;
		this.fees=fees;
		this.sec=sec;
		this.roll_num=roll_num;
	}
	void display()
	{
		System.out.println("Name: "+this.name);
		System.out.println("Roll no.: "+this.roll_num);
		System.out.println("Section.: "+this.roll_num);
		System.out.println("Fees.: "+this.fees);
	}
}
public class thiseg
{
	public static void main(String[] args)
	{
		teg ob= new teg( 1918594, 'B',"Rashika Khatri", 82890.345);
		ob.display();
	}
}
```

Output


java - hello_world/src/java_lab/thiseg.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> thiseg [Java Application] C:\Users\manan\.p2\pool\plugins\org.eclipse
Name: Rashika Khatri
Roll no.: 1918594
Section.: 1918594
Fees.: 82890.345

Objective

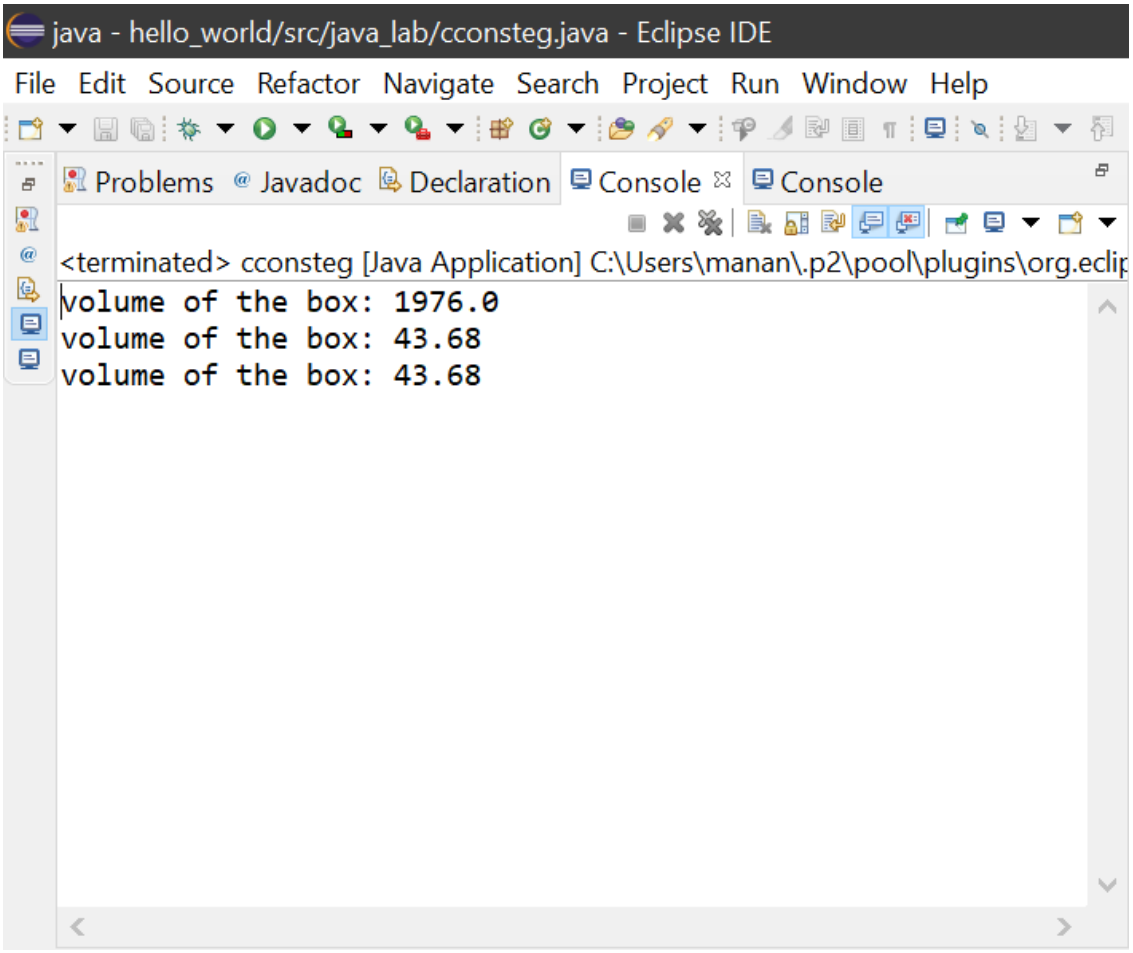
14: Write a program in java to demonstrate the use of copy constructor.

Source Code:

```
package java_lab;
import java.io.*;
class cceg
{
	double l,b,h;
	cceg()
	{
		l=10;
		b=20.8;
		h=9.5;
	}
	cceg(double x,double y,double z)
	{
		l=x;
		b=y;
		h=z;
	}
	cceg(cceg ob)
	{
		l=ob.l;
		b=ob.b;
		h=ob.h;
	}
	double vol()
	{
		return l*b*h;
	}
}

public class cconsteg {

	public static void main(String args[])
	{
		cceg b1=new cceg();
		System.out.println("volume of the box: "+b1.vol());
```

```
            cceg b2=new cceg(2, 9.1, 2.4);
            System.out.println("volume of the box: "+b2.vol());
            cceg b3=new cceg(b2);
            System.out.println("volume of the box: "+b3.vol());
        }
}
```

Output



Objective

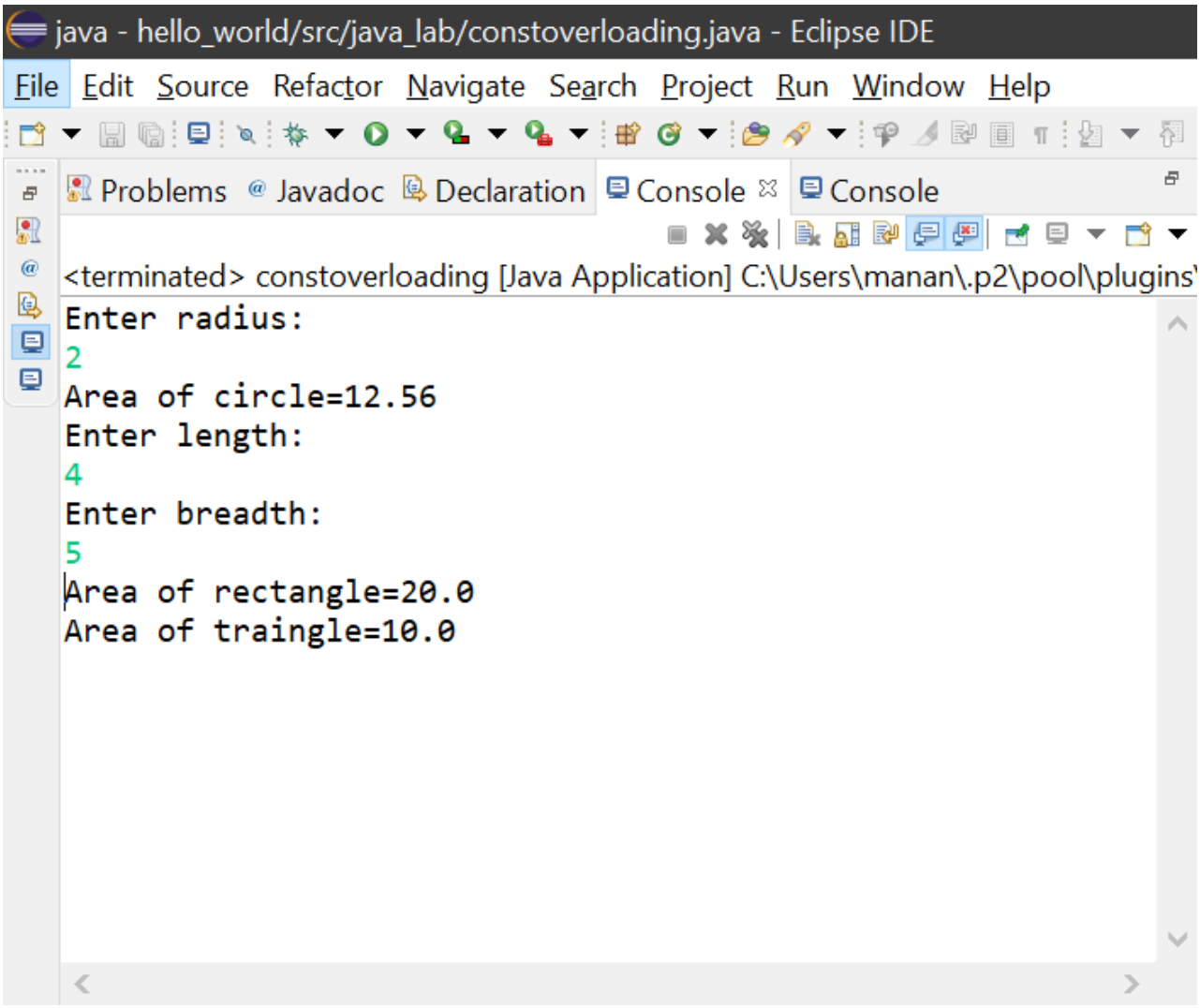
15: Write a program to perform Constructor overloading and find out the volume of the boxes.

Source Code:

```
package java_lab;

import java.util.*;
class volume
{
	double radius;
	double length,breadth;
	volume(double r)
	{
		radius=r;
	}
	volume(double l,double b)
	{
		length=l;
		breadth=b;
	}
	volume(volume b)
	{
		length=b.length;
		breadth=b.breadth;
	}
	double calcir()
	{
		return 3.14*radius*radius;
	}
	double calrect()
	{
		return length*breadth;
	}
	double caltrg()
	{
		return 0.5*length*breadth;
	}
}
```

```
public class constoverloading
{
	public static void main(String args[])
	{
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter radius: ");
		double a=sc.nextDouble();
		volume v1=new volume(a);
		System.out.println("Area of circle="+v1.calcir());
		System.out.println("Enter length: ");
		double x=sc.nextDouble();
		System.out.println("Enter breadth: ");
		double y=sc.nextDouble();
		volume v2=new volume(x,y);
		System.out.println("Area of rectangle="+v2.calrect());
		volume v3=new volume(v2);
		System.out.println("Area of traingle="+v3.caltrg());

	}
}
```

Output


java - hello_world/src/java_lab/constoverloading.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> constoverloading [Java Application] C:\Users\manan\.p2\pool\plugins
Enter radius:
2
Area of circle=12.56
Enter length:
4
Enter breadth:
5
Area of rectangle=20.0
Area of traingle=10.0

Objective

16: Write a program in java find out area of three different figures using constructor overloading concept.

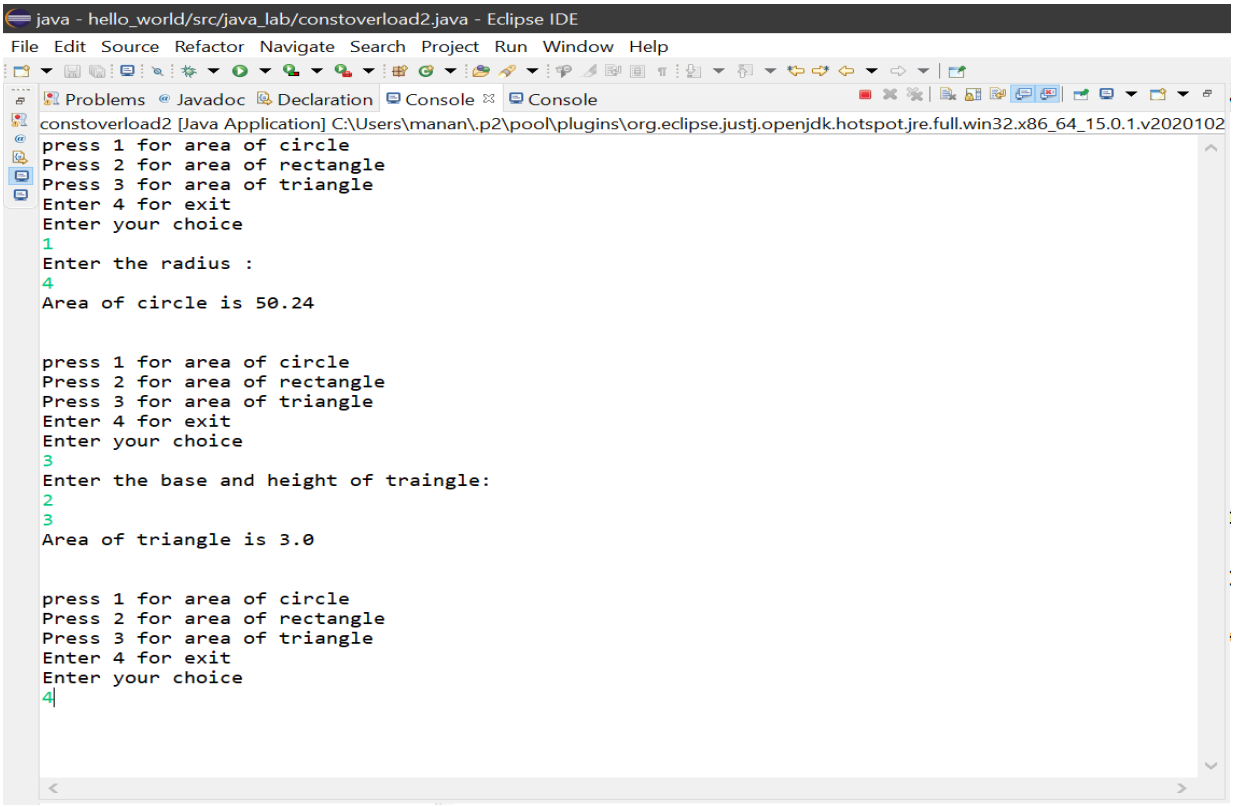
Source Code:

```
package java_lab;

import java.util.*;
class area{
   double base,h,half;
   double l,b;
   double r;
 area(double base,double h,double half){
       this.base=base;
       this.h=h;
       this.half=half;
   }
   area(double l,double b){
       this.l=l;
       this.b=b;
   }
   area(double r)
   {
        this.r=r;
   }
   double areaoftriangle()
   {
        return (0.5*base*h);
   }
   double areaofrect()
   {
        return l*b;
   }
   double areaofcircle()
   {
        return (3.14*r*r);
   }
   void displaytriangle()
```

```
    {
        System.out.println("Area of triangle is "+areaoftriangle()+"\n\n");
    }
    void displayrect(){
        System.out.println("Area of rectangle is "+areaofrect()+"\n\n");
    }
    void displaycircle(){
        System.out.println("Area of circle is "+areaofcircle()+"\n\n");
    }
}
public class constoverload2{
    public static void main(String args[]){
        Scanner sc = new Scanner (System.in);
        int ch;
        while(true)
        {
          System.out.println("press 1 for area of circle");
           System.out.println("Press 2 for area of rectangle");
          System.out.println("Press 3 for area of triangle");
          System.out.println("Enter 4 for exit");
          System.out.println("Enter your choice");
        ch=sc.nextInt();

         switch (ch)
         {
         case 1:
           System.out.println("Enter the radius : ");
             double r=sc.nextDouble();
             area ob = new area(r);
             ob.displaycircle();
             break;
         case 2:
           System.out.println("Enter the length and breadth: ");
             double l=sc.nextDouble();
             double b=sc.nextDouble();
             area ob1 = new area(l,b);
             ob1.displayrect();
             break;
         case 3:
           System.out.println("Enter the base and height of traingle:");
```

```
            double base=sc.nextDouble();
            double h=sc.nextDouble();
            double half=0.5;
            area ob2 = new area(base,h,half);
            ob2.displaytriangle();
            break;
        case 4:
          System.exit(0);
          default:
                System.out.println("Wrong choice!!!");
        }
       }
    }
}
```

Output



Objective

17: Design a class to represent the bank account includes the following members.

- **Name of depositor**
- **Account no.**
- **Type of account**
- **Balance amount in the bank**

Method:

- **To assign initial values**
- **To deposit an amount**
- **To witdraw amount after checking balance**
- **To display name and balance**

Write a program in java with te use of constructor to provide initial values.Also use this keyword and instantiate it's object.

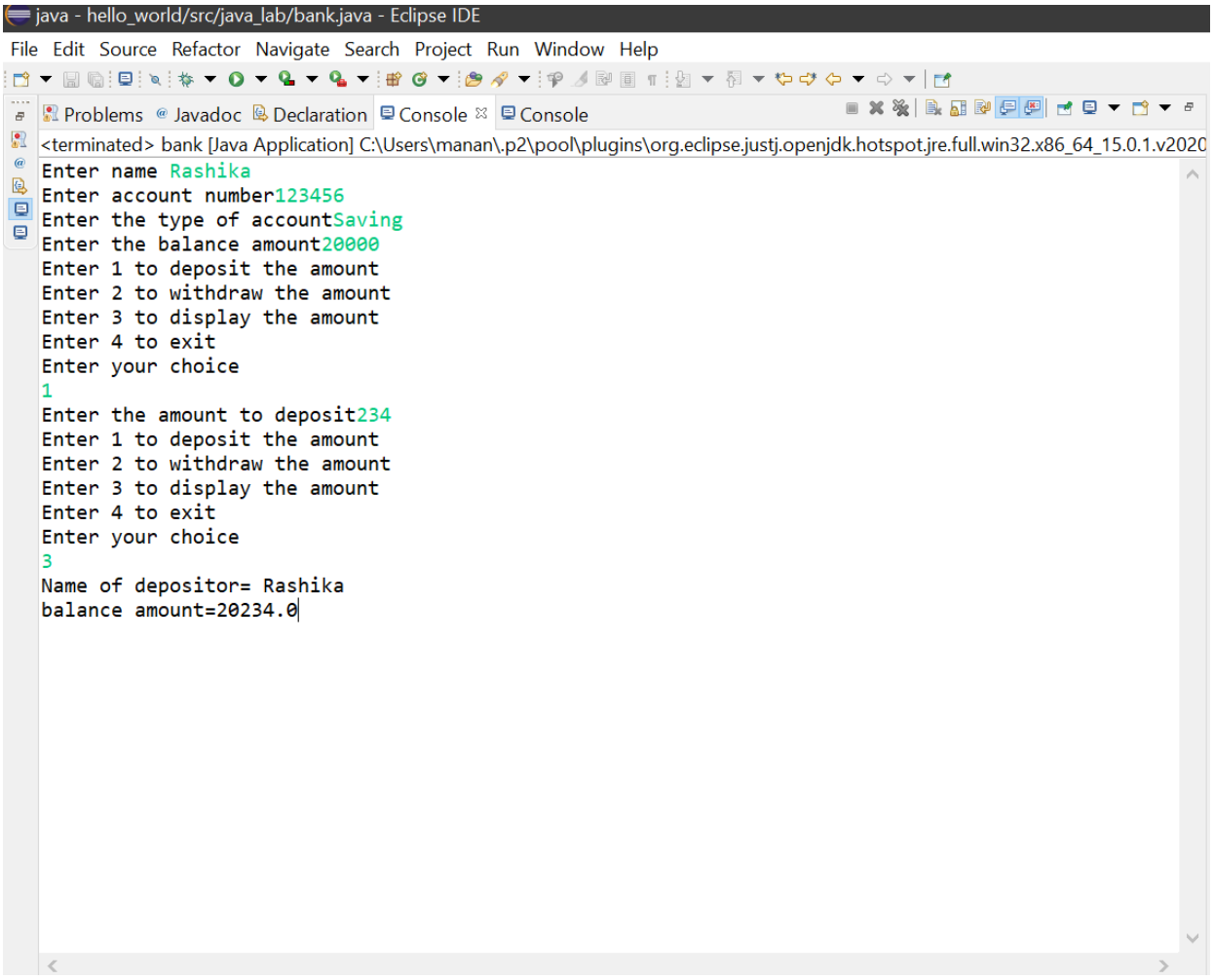
Source Code:

```
package java_lab;

import java.util.*;
class Bankacc
{
	String name;
	long accno;
	String type;
	double balance;
	Bankacc(String name,long accno,String type,double balance)
	{
		this.name=name;
		this.accno=accno;
		this.type=type;
		this.balance=balance;
	}
	void deposit(int amount)
	{
		balance=balance+amount;
	}
	void withdraw(int b)
	{
```

```
            if(balance<b)
                System.out.println("You have insufficient balance");
            else
                balance-=b;
        }
        void display()
        {
            System.out.println("Name of depositor="+name);
            System.out.println("balance amount="+balance);
        }
}
public class bank
{
        public static void main(String args[])
        {
            String name;
            long accno;
            String type;
            double balance;
            Scanner sc=new Scanner(System.in);
            System.out.print("Enter name");
            name=sc.nextLine();
            System.out.print("Enter account number");
            accno=sc.nextLong();
            System.out.print("Enter the type of account");
            type=sc.next();
            System.out.print("Enter the balance amount");
            balance=sc.nextDouble();
            Bankacc b1=new Bankacc(name,accno,type,balance);
            int ch;
            while(true)
            {
                System.out.println("Enter 1 to deposit the amount");
                System.out.println("Enter 2 to withdraw the amount");
                System.out.println("Enter 3 to display the amount");
                System.out.println("Enter 4 to exit");
                System.out.println("Enter your choice");
                ch=sc.nextInt();
                switch(ch)
                {
```

```
                    case 1:
                        int amount;
                        System.out.print("Enter the amount to deposit");
                        amount=sc.nextInt();
                        b1.deposit(amount);
                        break;
                    case 2:
                        int b;
                        System.out.print("Enter the amount to withdraw");
                        b=sc.nextInt();
                        b1.withdraw(b);
                    case 3:
                        b1.display();
                    case 4:
                        System.exit(0);
                        default:
                            System.out.print("Wrong choice!!!");
                    }
                }
            }
}
```

Output


java - hello_world/src/java_lab/bank.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console
<terminated> bank [Java Application] C:\Users\manan\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.1.v2020
Enter name Rashika
Enter account number123456
Enter the type of accountSaving
Enter the balance amount20000
Enter 1 to deposit the amount
Enter 2 to withdraw the amount
Enter 3 to display the amount
Enter 4 to exit
Enter your choice
1
Enter the amount to deposit234
Enter 1 to deposit the amount
Enter 2 to withdraw the amount
Enter 3 to display the amount
Enter 4 to exit
Enter your choice
3
Name of depositor= Rashika
balance amount=20234.0

Objective

18:A class telcall calculates the monthly phone bill of a subscriber.

Some of the members functions are given below:

- **Phno-> To store phone number of the subscriber**
- **Sname->To store subscriber's name**
- **n->To store the number of calls made by the subscriber**
- **amt->Total bill amount**

Method:

Telcall:parameterized constructor tp assign values to data members.

void compute()-> To calculate the phone bill amount based on the pricing given below.

void display()-> To display the details in the specified format.

S.no	Number of calls	Rate (in INR)
1	1-100	500 rental charges only.
2	101-200	1/call + rental charge.
3	201-300	1.20/call +rental charge.
4	Above 300	1.50/call +rental charge.

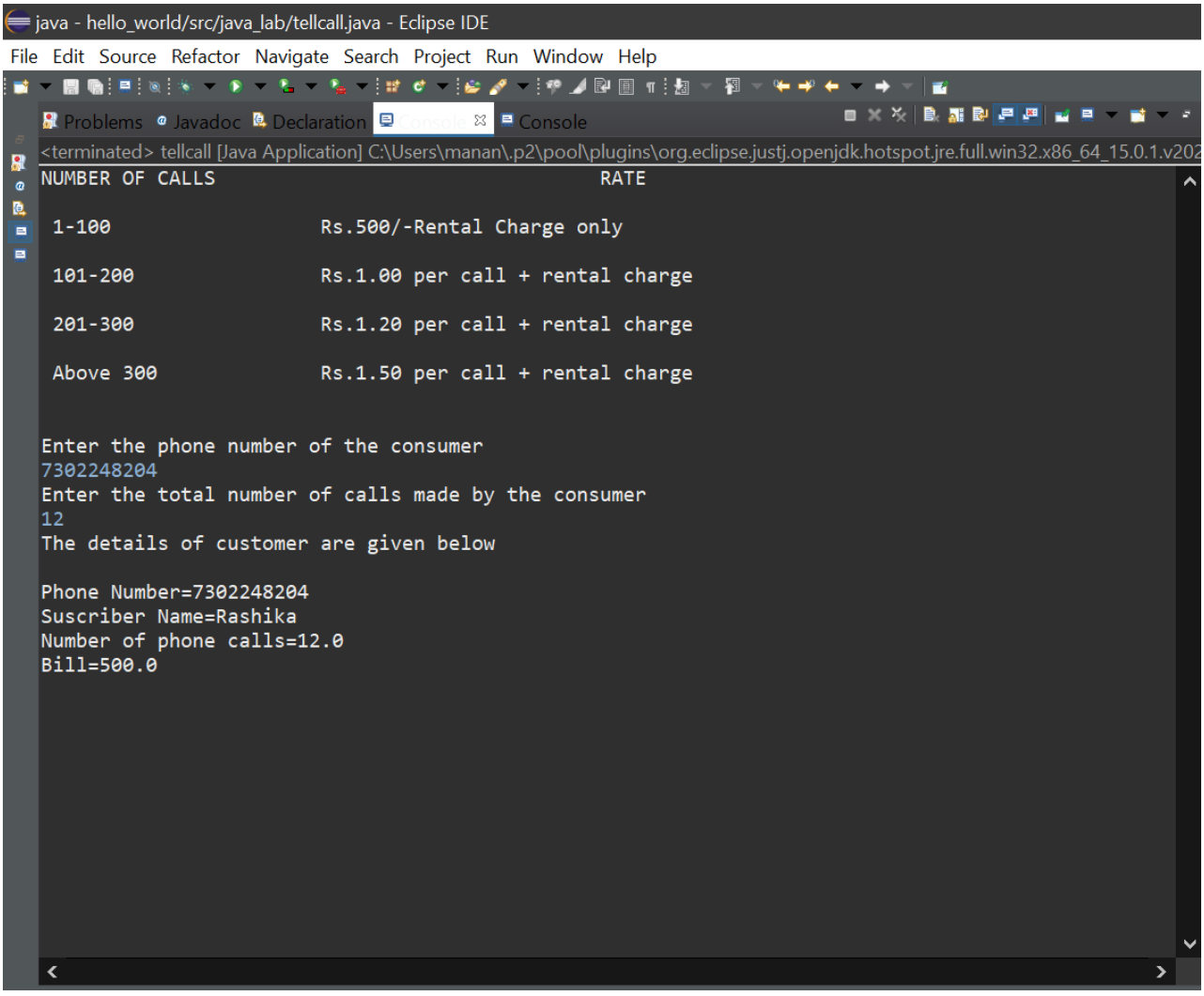
Source Code:

```
package java_lab;
import java.util.Scanner;
class Tcall
{
	long num;
	float n;
	double amount;
	String name;
	Tcall(long num,float n,String name)
	{
		this.num=num;
		this.n=n;
```

```
		this.name=name;
	}
	void compute(float n)
	{
		if(1<=n&&n<=100)
		{
			amount=500;
		}
		else if(101<=n&&n<=200)
		{
			amount=500+n;
		}
		else if(201<=n&&n<=300)
		{
			amount=500+(n*1.20);
		}
		else
			amount=500+(n*1.50);
	}
	void display(Tcall b)
	{
		b.compute(n);
		System.out.println("The details of customer are given below\n");
		System.out.println("Phone Number=" +num+ "\nSuscriber Name="
+name+ "\nNumber of phone calls=" +n+ "\nBill="+amount);
	}
}
class tellcall
{
	public static void main(String args[])
	{
		System.out.println("NUMBER OF CALLS \t\t\t\tRATE");
		System.out.println("\n 1-100 \t\t\tRs.500/-Rental Charge only");
		System.out.println("\n 101-200 \t\tRs.1.00 per call + rental charge");
		System.out.println("\n 201-300 \t\tRs.1.20 per call + rental charge");
		System.out.println("\n Above 300 \t\tRs.1.50 per call + rental
charge\n\n");
		Scanner rv=new Scanner(System.in);
		System.out.println("Enter the phone number of the consumer");
		long x=rv.nextLong();
```

```
            System.out.println("Enter the total number of calls made by the
consumer");
            float y=rv.nextFloat();
            String name="Rashika";
            Tcall b=new Tcall(x,y,name);
            b.compute(y);
            b.display(b);
        }
}
```

Output



Objective

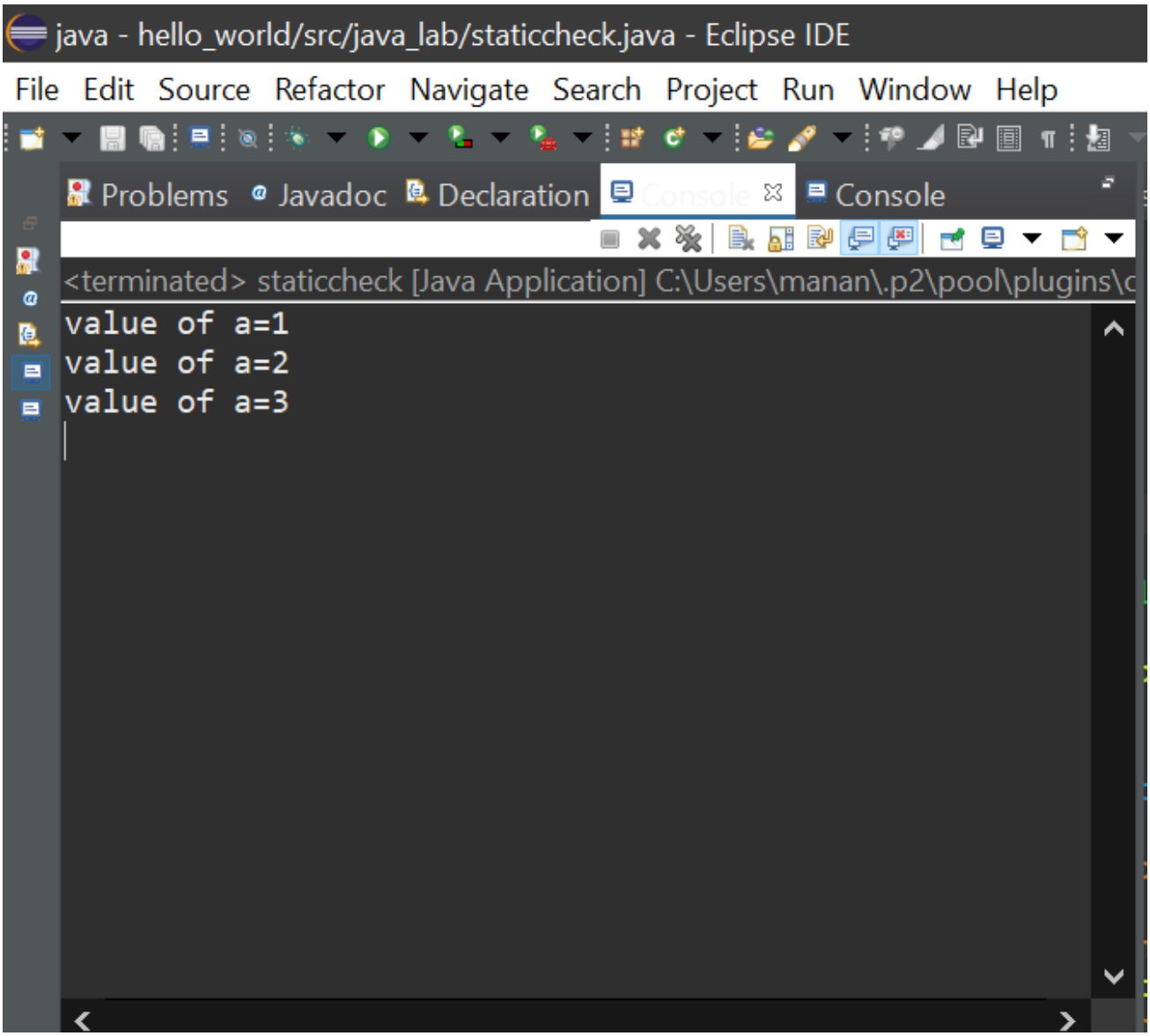
19. Create a static variable and initialize it with zero in the default constructor and print the value using method.

Source Code:

```
package java_lab;

class sclass
{
	static int n=0;
	sclass()
	{
		n=n+1;
	}
	void print ()
	{
		System.out.println("value of n="+n);
	}
}
public class staticcheck
{
	public static void main(String[] args)
	{
		sclass ob1=new sclass();
		ob1.print ();
		sclass ob2=new sclass();
		ob2.print ();
		sclass ob3=new sclass();
		ob3.print ();
	}
}
```

Name: Pancham Sheoran Roll no.: 1918523 Section: A

Output



Objective

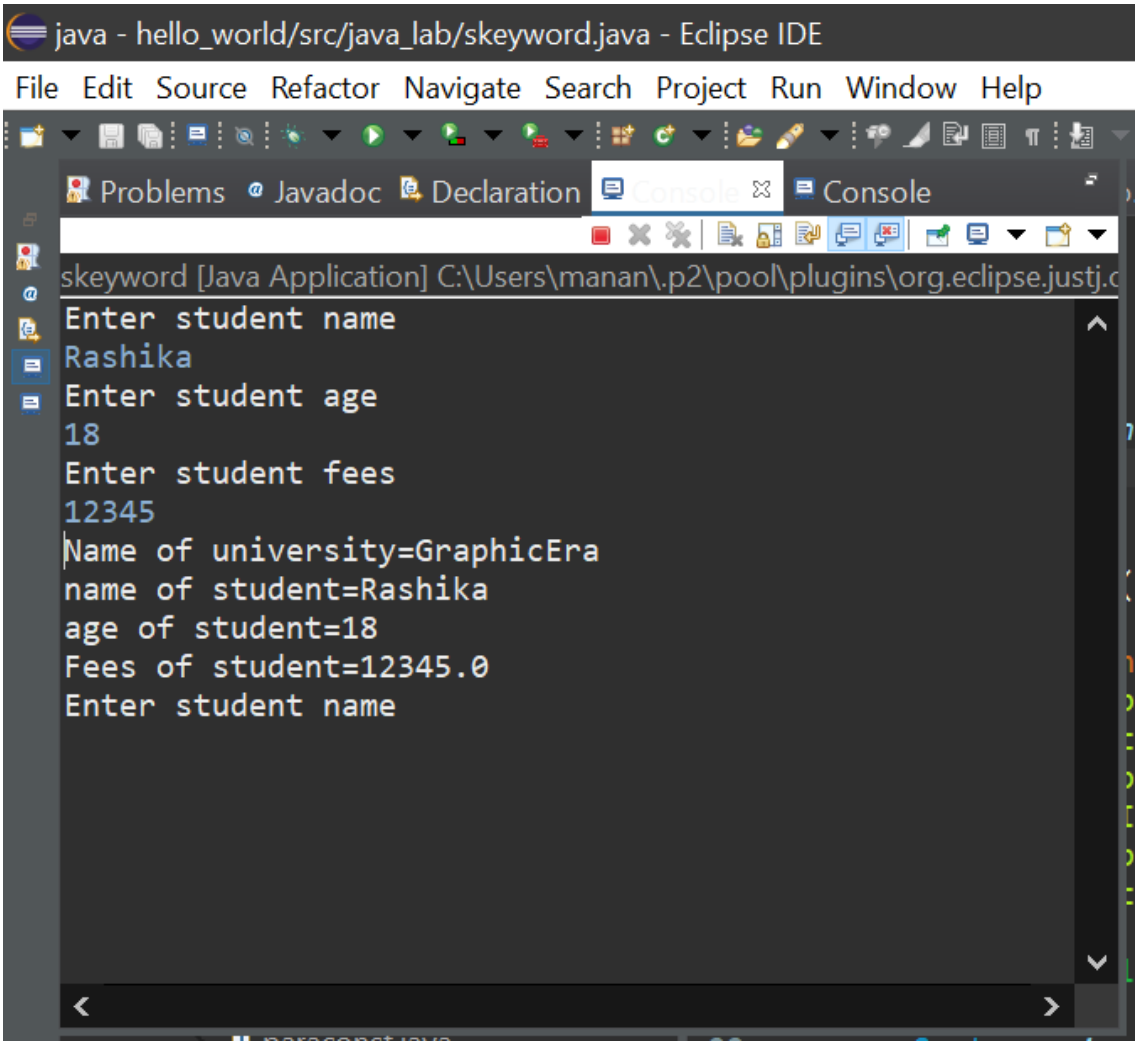
20. Write a program to maintain the data of different students a single university name with the help of static keyword.

Source Code:

```
package java_lab;

import java.util.*;
class sdetails
{
	static String univname="GraphicEra";
	String name;
	int age;
	double fees;
	void getdetails()
	{
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter student name");
		name=sc.nextLine();
		System.out.println("Enter student age");
		age=sc.nextInt();
		System.out.println("Enter student fees");
		fees=sc.nextDouble();
	}
	void printdetails()
	{
		System.out.println("Name of university="+univname);
		System.out.println("name of student="+name);
		System.out.println("age of student="+age);
		System.out.println("Fees of student="+fees);

	}

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

```
        {
                sdetails s1=new sdetails();
                sdetails s2=new sdetails();
                sdetails s3=new sdetails();
                s1.getdetails();
                s1.printdetails();
                s2.getdetails();
                s2.printdetails();
                s3.getdetails();
                s3.printdetails();
        }
}
```

Output



Objective

21. Create a Java program to perform survey on four different model of Maruti (Maruti -K10, Zen-Astelo, Wagnor, Maruti- SX4) owned by person living in four metro cities (Delhi, Mumbai, Chennai & Kolkata). Display tabulated report like format given below:

	Maruti-K10	**Zen-Astelo**	**Wagnor**	**Maruti-SX4**
Delhi				
Mumbai				
Chennai				
Kolkata				

Calculate numbers of cars of different model in each metro city.

Source Code:

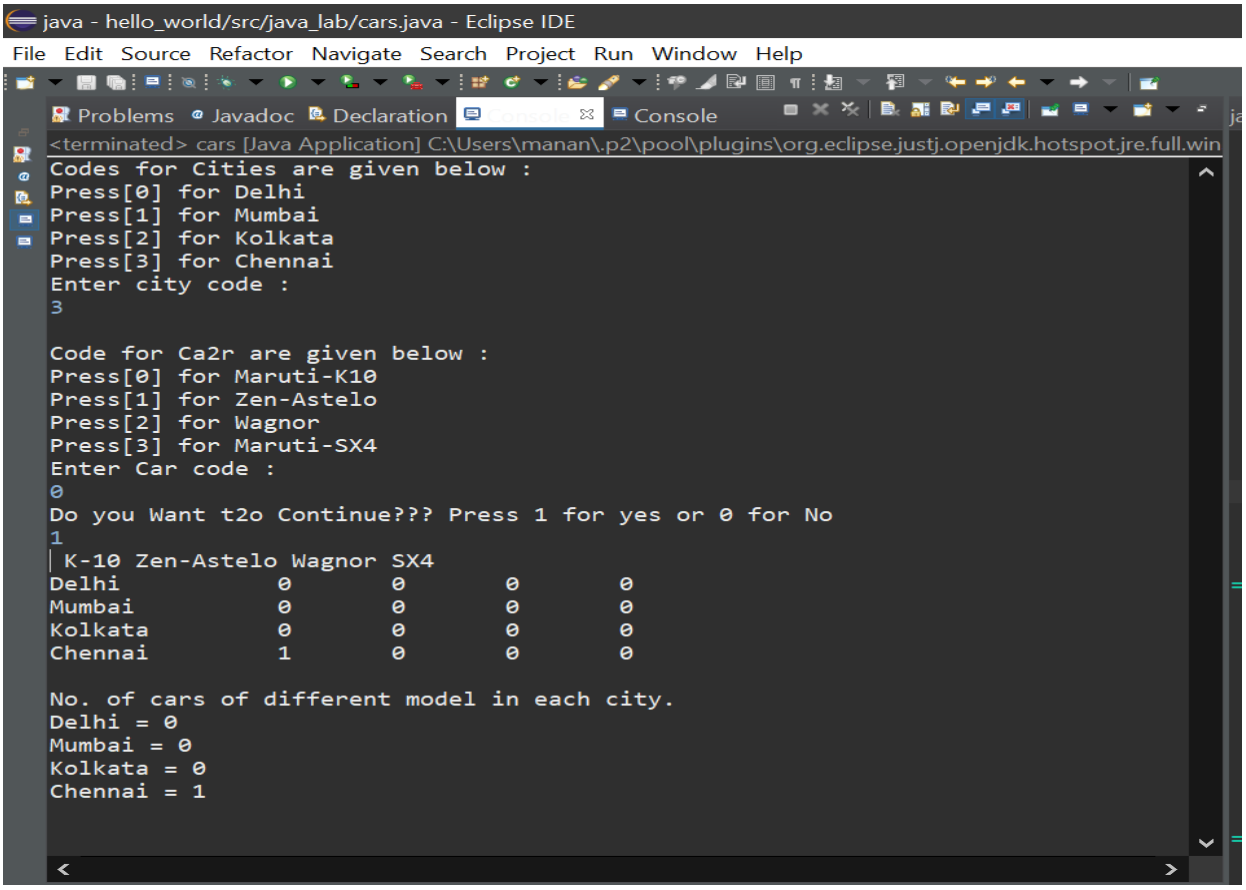
```
package java_lab;

import java.util.Scanner;
public class cars
{
	public static void main(String[] args)
	{
		int choice; int survey[][]=new int[4][4]; Scanner rv=new
Scanner(System.in);
		for(int i=0;i<4;i++)
		{
			for(int j=0;j<4;j++)
			{

				survey[i][j]=0;
			}
		}
```

```
int cityCode; int carCode;
int diffCars;
do
{
	System.out.println("Codes for Cities are given below :");
	System.out.println("Press[0] for Delhi");
	System.out.println("Press[1] for Mumbai");
	System.out.println("Press[2] for Kolkata");
	System.out.println("Press[3] for Chennai");
	System.out.println("Enter city code : "); cityCode= rv.nextInt();
	System.out.println("\nCode for Ca2" + "r are given below :");
	System.out.println("Press[0] for Maruti-K10");
	System.out.println("Press[1] for Zen-Astelo");
	System.out.println("Press[2] for Wagnor");
	System.out.println("Press[3] for Maruti-SX4");
	System.out.println("Enter Car code : "); carCode= rv.nextInt();
survey[cityCode][carCode]++; System.out.println("Do you Want t2" +"o
Continue??? Press 1 for yes or 0 for No"); choice=rv.nextInt();
} while(choice==0);
System.out.println(" K-10 Zen-Astelo Wagnor SX4");
for(int i=0;i<4;i++)
{
	if(i==0)
	{
		System.out.print("Delhi\t");
		for(int j=0;j<4;j++)
		{
			System.out.print("\t"+survey[i][j]);
		}
	}
	else if(i==1)
	{
		System.out.print("\nMumbai\t");
		for(int j=0;j<4;j++)
		{
			System.out.print("\t"+survey[i][j]);
		}
	}
	else if(i==2)
	{
```

```
                System.out.print("\nKolkata\t");
                for(int j=0;j<4;j++)
                {
                        System.out.print("\t"+survey[i][j]);
                }
        }
        else
        {
                System.out.print("\nChennai\t");
                for(int j=0;j<4;j++)
                {
                        System.out.print("\t"+survey[i][j]);
                }
        }
}
System.out.print("\n\nNo. of cars of different model in each city.");
for(int i=0;i<4;i++)
{
        diffCars=0;
        if(i==0)
        {
                for(int j=0;j<4;j++)
                {
                        if(survey[i][j]>0)
                        {
                                diffCars++;
                        }
                }
                System.out.print("\nDelhi = "+diffCars);
        }
        else if(i==1)
        {
                for(int j=0;j<4;j++)
                {
                        if(survey[i][j]>0)
                        {
                                diffCars++;
                        }
                }
                System.out.print("\nMumbai = "+diffCars);
```

```
                }
                else if(i==2)
                {
                        for(int j=0;j<4;j++)
                        {
                                if(survey[i][j]>0)
                                {
                                        diffCars++;
                                }
                        }
                        System.out.print("\nKolkata = "+diffCars);
                }
                else
                {
                        for(int j=0;j<4;j++)
                        {
                                if(survey[i][j]>0)
                                {
                                        diffCars++;
                                }
                        }
                        System.out.print("\nChennai = "+diffCars);
                }
        }
    }
}
```

Output


java - hello_world/src/java_lab/cars.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
<terminated> cars [Java Application] C:\Users\manan\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win
Codes for Cities are given below :
Press[0] for Delhi
Press[1] for Mumbai
Press[2] for Kolkata
Press[3] for Chennai
Enter city code :
3
Code for Ca2r are given below :
Press[0] for Maruti-K10
Press[1] for Zen-Astelo
Press[2] for Wagnor
Press[3] for Maruti-SX4
Enter Car code :
0
Do you Want t2o Continue??? Press 1 for yes or 0 for No
1
K-10 Zen-Astelo Wagnor SX4
Delhi 0 0 0 0
Mumbai 0 0 0 0
Kolkata 0 0 0 0
Chennai 1 0 0 0
No. of cars of different model in each city.
Delhi = 0
Mumbai = 0
Kolkata = 0
Chennai = 1

Objective

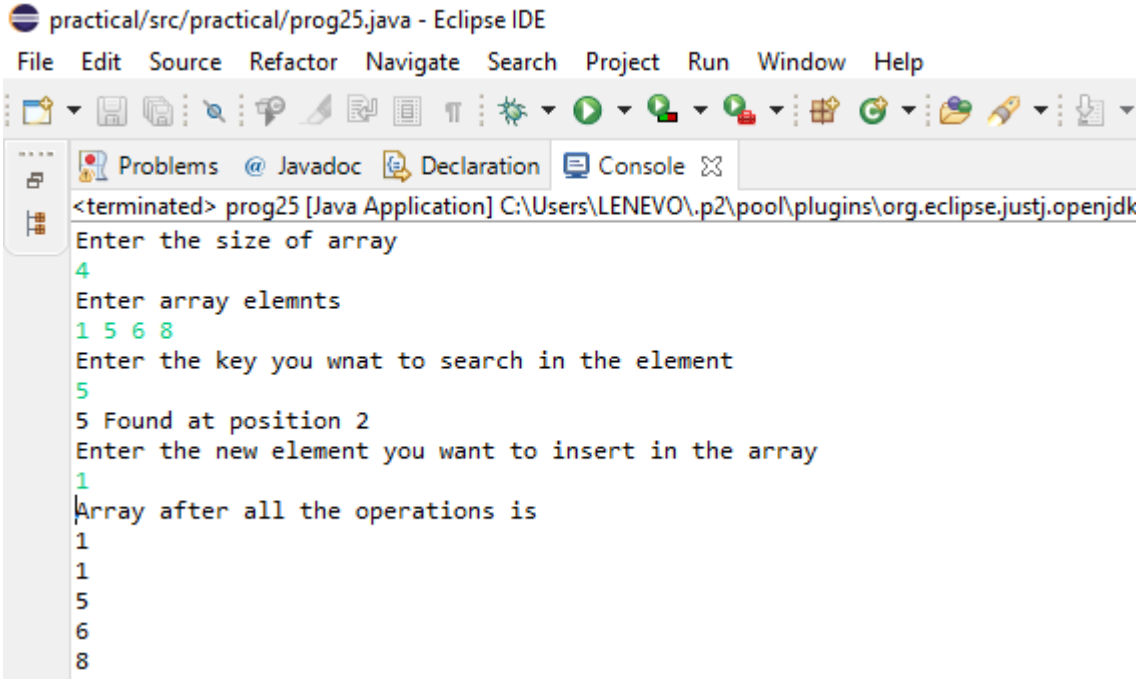
22. Wap in java to insert an element after recognizing a specified key without altering the array elements.

Source Code:

```
package java_lab;

import java.util.*;
class shift {
        Scanner sc=new Scanner(System.in);
            int n,pos,c=0,temp;
            int arr[]=new int[200];
            public shift(int size) {
            n=size;
            System.out.println("Enter array elemnts");
            for(int i=0;i<n;i++)
                {
                    arr[i]=sc.nextInt();
                }
  }
                    int search(int key) {
                    for(int i=0;i<n;i++) {
                    if(arr[i]==key) {
                    System.out.println(key +" Found at position " + (i+1));
                                c=1;
                                pos =i;
                        }
                }
                     if(c==0) {
                            System.out.println("Key not found");
                                }
                     return pos;
                        }
void insert(int index,int e) {
                for(int i=n;i>=index;i--) {
                        arr[i+1]=arr[i];
                }
                        arr[index]=e;
```

```
	}
		void print() {
		System.out.println("Array after all the operations is ");
			for(int i=0;i<n+61;i++) {
				System.out.println(arr[i]);
			}
		}
}
public class prog25 {
	public static void main(String args[]) {
		Scanner sc=new Scanner(System.in);
			int size;
		System.out.println("Enter the size of array");
		size=sc.nextInt();
		shift obj=new shift(size);
		System.out.println("Enter the key you wnat to search in the element");
		int key = sc.nextInt();
		int index =  obj.search(key);
		System.out.println("Enter the new element you want to insert in the
array");
		int ne=sc.nextInt();
		obj.insert(index, ne);
		obj.print();
		}
}
```

Output


practical/src/practical/prog25.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
<terminated> prog25 [Java Application] C:\Users\LENEVO\.p2\pool\plugins\org.eclipse.justj.openjdk
Enter the size of array
4
Enter array elemnts
1 5 6 8
Enter the key you wnat to search in the element
5
5 Found at position 2
Enter the new element you want to insert in the array
1
Array after all the operations is
1
1
5
6
8

Objective

23. Calculate the sum of rows & columns of matrix having size 5x5 in the format given below:

	Quarter1	Quarter2	Quarter3	Quarter4	Total
Salesman1					
Salesman2					
Salesman3					
Salesman4					
Total					

Source Code:

```
package java_lab;

import java.util.Scanner;
public class salesman
{
	public static void totalQuarter(int[][] sales)
	{
		int sum;
		for (int j = 0; j < 5; j++)
		{
			sum = 0;
			if (j == 0)
			{
				for (int i = 0; i < 4; i++)
				{
```

```
                        sum += sales[i][j];
                    }
                    sales[4][j] = sum;
                }
                else if (j == 1)
                {
                    for (int i = 0; i < 4; i++)
                    {
                        sum += sales[i][j];
                    }
                    sales[4][j] = sum;
                }
                else if (j == 2)
                {
                    for (int i = 0; i < 4; i++)
                    {
                        sum += sales[i][j];
                    }
                    sales[4][j] = sum;
                }
                else if (j == 3)
                {
                    for (int i = 0; i < 4; i++)
                    {
                        sum += sales[i][j];
                    }
                    sales[4][j] = sum;
                }
            }
        }
        public static void totalSalesman(int[][] sales)
        {
            int sum;
            for (int i = 0; i < 5; i++)
            {
                sum = 0;
                if (i == 0)
                {
                    for (int j = 0; j < 4; j++)
                    {
```

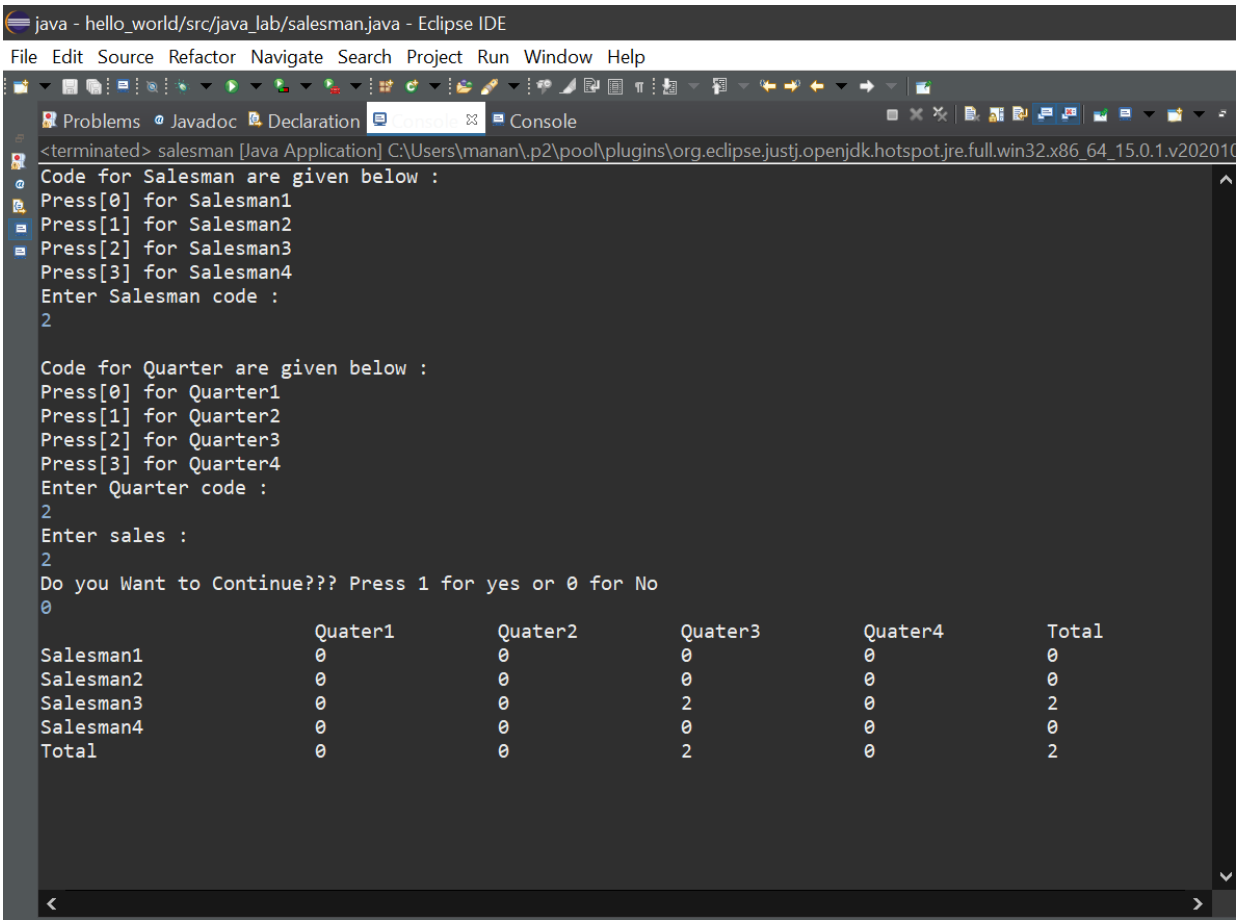
```
                        sum += sales[i][j];
                    }
                    sales[i][4] = sum;
                }
                else if (i == 1)
                {
                    for (int j = 0; j < 4; j++)
                    {
                        sum += sales[i][j];
                    }
                    sales[i][4] = sum;
                }
                else if (i == 2)
                {
                    for (int j = 0; j < 4; j++)
                    {
                        sum += sales[i][j];
                    }
                    sales[i][4] = sum;
                }
                else if (i == 3)
                {
                    for (int j = 0; j < 4; j++)
                    {
                        sum += sales[i][j];
                    }
                    sales[i][4] = sum;
                }
                else
                {
                    for (int j = 0; j < 4; j++)
                    {
                        sum += sales[i][j];
                    }
                    sales[i][i] = sum;
                }
            }
        }
        public static void main(String[] args)
        {
```

```
		int choice;
		int sales[][] = new int[5][5];
		Scanner sc = new Scanner(System.in);
		for (int i = 0; i < 5; i++)
		{
			for (int j = 0; j < 5; j++)
			{
				sales[i][j] = 0;
			}
		}
		int salesCode;
		int quarterCode;
		int salesNo;
		do
		{
			System.out.println("Code for Salesman are given below :");
			System.out.println("Press[0] for Salesman1");
			System.out.println("Press[1] for Salesman2");
			System.out.println("Press[2] for Salesman3");
			System.out.println("Press[3] for Salesman4");
			System.out.println("Enter Salesman code : ");
			salesCode = sc.nextInt();
			System.out.println("\nCode for Quarter are given below :");
			System.out.println("Press[0] for Quarter1");
			System.out.println("Press[1] for Quarter2");
			System.out.println("Press[2] for Quarter3");
			System.out.println("Press[3] for Quarter4");
			System.out.println("Enter Quarter code : ");
			quarterCode = sc.nextInt();
			System.out.println("Enter sales : ");
			salesNo = sc.nextInt();
			sales[salesCode][quarterCode] = salesNo;
			System.out.println("Do you Want to Continue??? Press 1 for
yes or 0 for No");
			choice = sc.nextInt();
		} while (choice == 1);
		totalQuarter(sales);
		totalSalesman(sales);
		System.out.println("	\t\tQuater1 \tQuater2 \tQuater3 \tQuater4
\tTotal");
```

```
for (int i = 0; i < 5; i++)
{
	if (i == 0)
	{
		System.out.print("Salesman1");
		for (int j = 0; j < 5; j++)
		{
			System.out.print("\t\t" + sales[i][j]);
		}
	}
	else if (i == 1)
	{
		System.out.print("\nSalesman2");
		for (int j = 0; j < 5; j++)
		{
			System.out.print("\t\t" + sales[i][j]);
		}
	}
	else if (i == 2)
	{
		System.out.print("\nSalesman3"); for (int j = 0; j < 5;
j++)
		{
			System.out.print("\t\t" + sales[i][j]);
		}
	}
	else if (i == 3)
	{
		System.out.print("\nSalesman4");
		for (int j = 0; j < 5; j++)
		{
			System.out.print("\t\t" + sales[i][j]);
		}
	}
	else
	{
		System.out.print("\nTotal\t");
		for (int j = 0; j < 5; j++)
		{
			System.out.print("\t\t" + sales[i][j]);
```

```
                    }
                }
            }
        }
}
```

Output


java - hello_world/src/java_lab/salesman.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
<terminated> salesman [Java Application] C:\Users\manan\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.1.v202010
Code for Salesman are given below :
Press[0] for Salesman1
Press[1] for Salesman2
Press[2] for Salesman3
Press[3] for Salesman4
Enter Salesman code :
2
Code for Quarter are given below :
Press[0] for Quarter1
Press[1] for Quarter2
Press[2] for Quarter3
Press[3] for Quarter4
Enter Quarter code :
2
Enter sales :
2
Do you Want to Continue??? Press 1 for yes or 0 for No
0
Quater1 Quater2 Quater3 Quater4 Total
Salesman1 0 0 0 0 0
Salesman2 0 0 0 0 0
Salesman3 0 0 2 0 2
Salesman4 0 0 0 0 0
Total 0 0 2 0 2

Objective

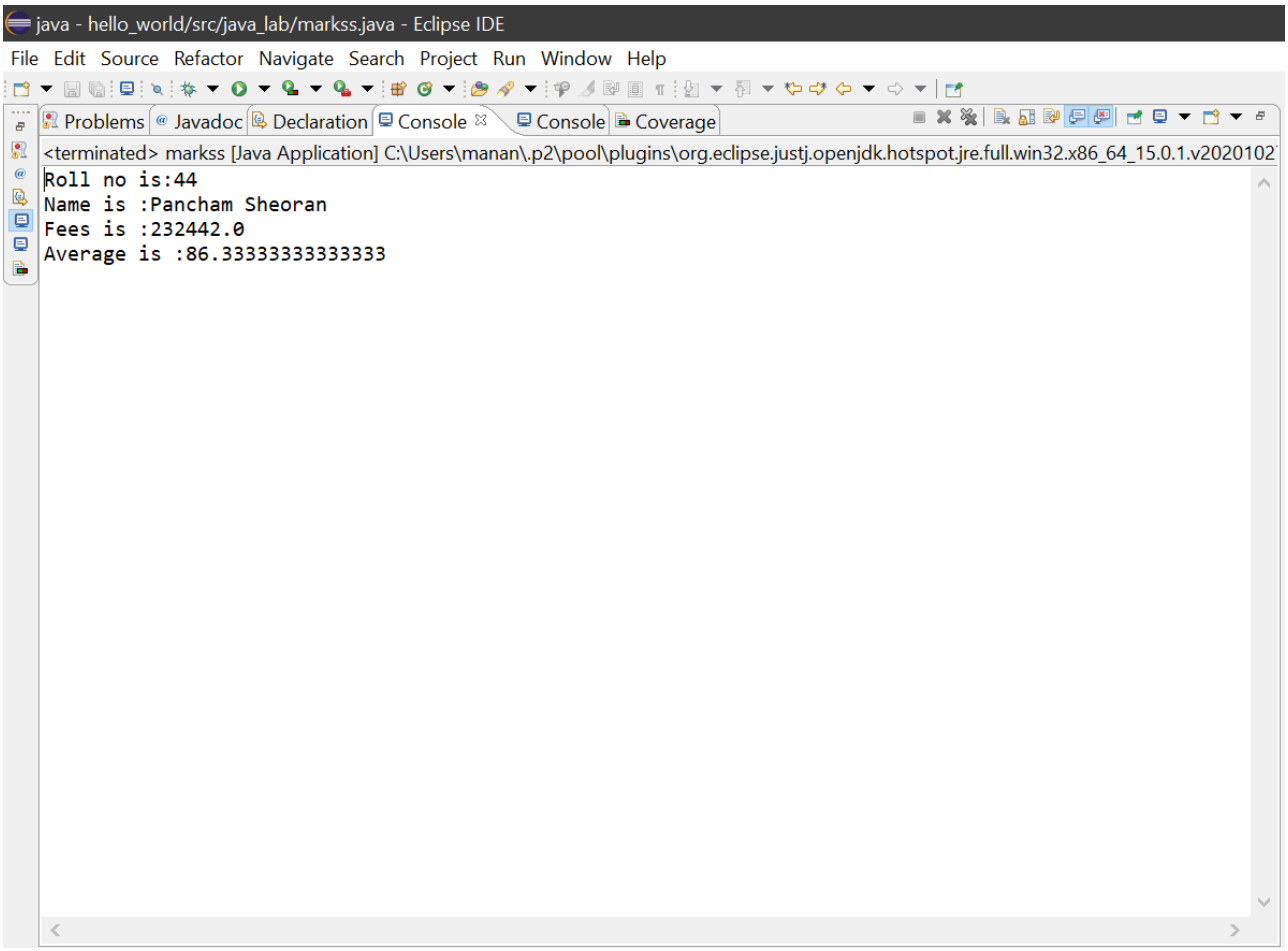
24. Write a program to demonstrate single inheritance and display all the information related to student class as well as marks class.

SOURCE CODE:

```
package java_lab;

import java.util.*;
class s1{
	int rno;
	String name;
	float fees;
	s1(int rno,String name,float fees){
		this.rno = rno;
		this.name = name;
		this.fees = fees;

	}
}
class markss extends s1 {
	double m1,m2,m3;
	markss(int rno,String name,float fees,double m1,double m2,double m3){
		super(rno,name,fees);
		this.m1=m1;
		this.m2=m2;
		this.m3=m3;
	}
	double aver(double m1,double m2,double m3) {
		double average= (m1+m2+m3)/3;
		return average;
	}
	void display() {
		System.out.println("Roll no is:"+rno);
```

```
            System.out.println("Name is :"+name);
            System.out.println("Fees is :"+fees);
        }

        public static void main(String[] args) {
            markss m1 = new markss(44,"Pancham
Sheoran",232442,80.0,90.0,89.0);

            m1.display();
            System.out.println("Average is :"+m1.aver(80, 90, 89));

        }

}
```

Output



Objective

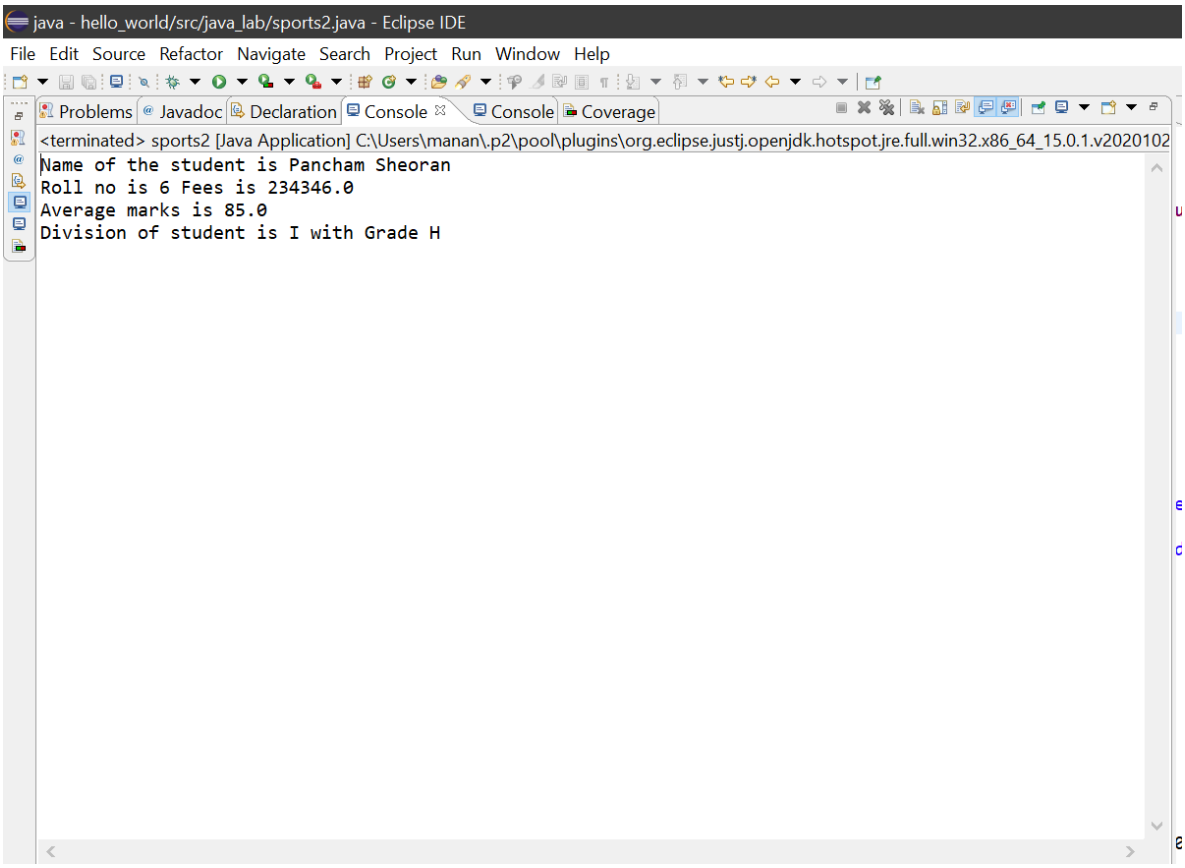
25. Write a program to demonstrate the multilevel inheritance

SOURCE CODE:

```
package java_lab;

import java.util.*;
class s{
	String name;
	double fees;
	int roll;
	s(String name,double fees,int roll){
		this.name=name;
		this.fees=fees;
		this.roll=roll;
	}
}

class marks extends s{
	double m1,m2,m3;
	marks(String name,double fees,int roll,double m1,double m2,double m3){
		super(name,fees,roll);
		this.m1=m1;
		this.m2=m2;
		this.m3=m3;
	}
}

class sports2 extends marks{
	double smarks,avg;
	sports2(String name,double fees,int roll,double m1,double m2,double
m3,double smarks){
		super(name,fees,roll,m1,m2,m3);
		this.smarks=smarks;
	}
```

```
	void average(){
		avg=(m1+m2+m3+smarks)/4;
	}
	void division(){
		if(avg>=75)
			System.out.println("Division of student is I with Grade H");
		else if(avg>=60)
			System.out.println("Division of student is I with Grade A");
		else if(avg>=45)
			System.out.println("Division of student is II with Grade B");
		else if(avg>=33)
			System.out.println("Division of student is III with GRade C");
		else
			System.out.println("Division of student is Fail");
	}
	void display(){
		System.out.println("Name of the student is "+name);
		System.out.println("Roll no is "+roll+" Fees is "+fees);
		System.out.println("Average marks is "+avg);
		division();
	}


	public static void main(String arg[]){
		sports2 ob1=new sports2("Pancham
Sheoran",234346,06,70,80,90,100);
		ob1.average();
		ob1.display();
	}
}
```

Output


java - hello_world/src/java_lab/sports2.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console Console Coverage
<terminated> sports2 [Java Application] C:\Users\manan\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_15.0.1.v2020102
Name of the student is Pancham Sheoran
Roll no is 6 Fees is 234346.0
Average marks is 85.0
Division of student is I with Grade H