Programming In JAVA

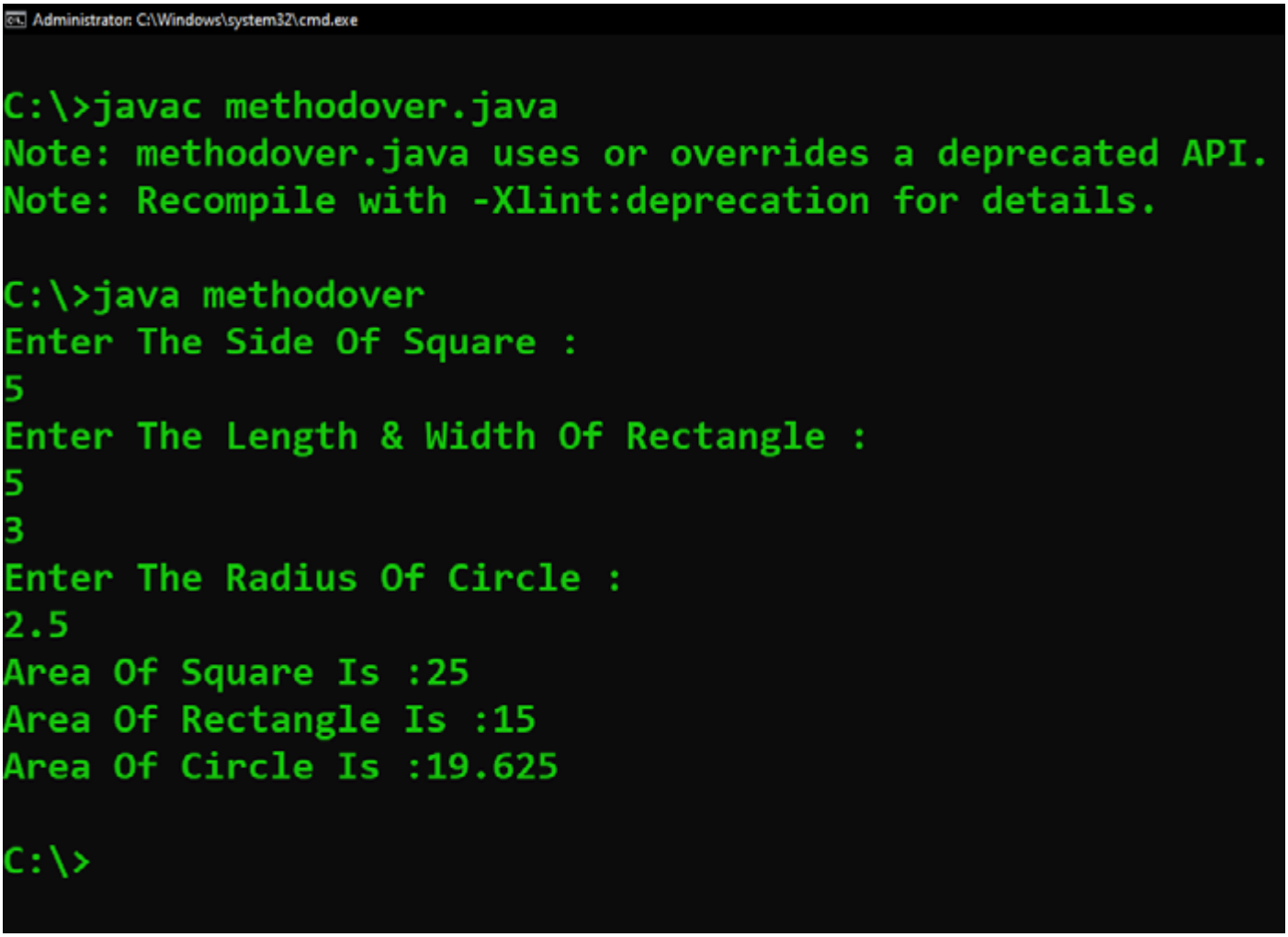
Designed & Developed By
Tech Mohan

1. METHOD OVERLOADING

SOURCE CODE :

```
import java.io.*;
class methodover
{
	void area(int s)
	{
	System.out.println("Area Of Square Is :"+(s*s));
	}
	void area(int l,int w)
	{
	System.out.println("Area Of Rectangle Is :"+(l*w));
	}
	void area(double r)
	{
	System.out.println("Area Of Circle Is :"+(3.14*r*r));
	}
	public static void main(String args[])throws IOException
	{
		int length,width,side;
		double radius;
		DataInputStream obj=new DataInputStream(System.in);
		methodover m = new methodover();
		System.out.println("Enter The Side Of Square :");
		side=Integer.parseInt(obj.readLine());
		System.out.println("Enter The Length & Width Of Rectangle :");
		length=Integer.parseInt(obj.readLine());
		width=Integer.parseInt(obj.readLine());
		System.out.println("Enter The Radius Of Circle :");
		radius=Double.parseDouble(obj.readLine());
		m.area(side);
		m.area(length,width);
		m.area(radius);
	}
}
```

OUTPUT:

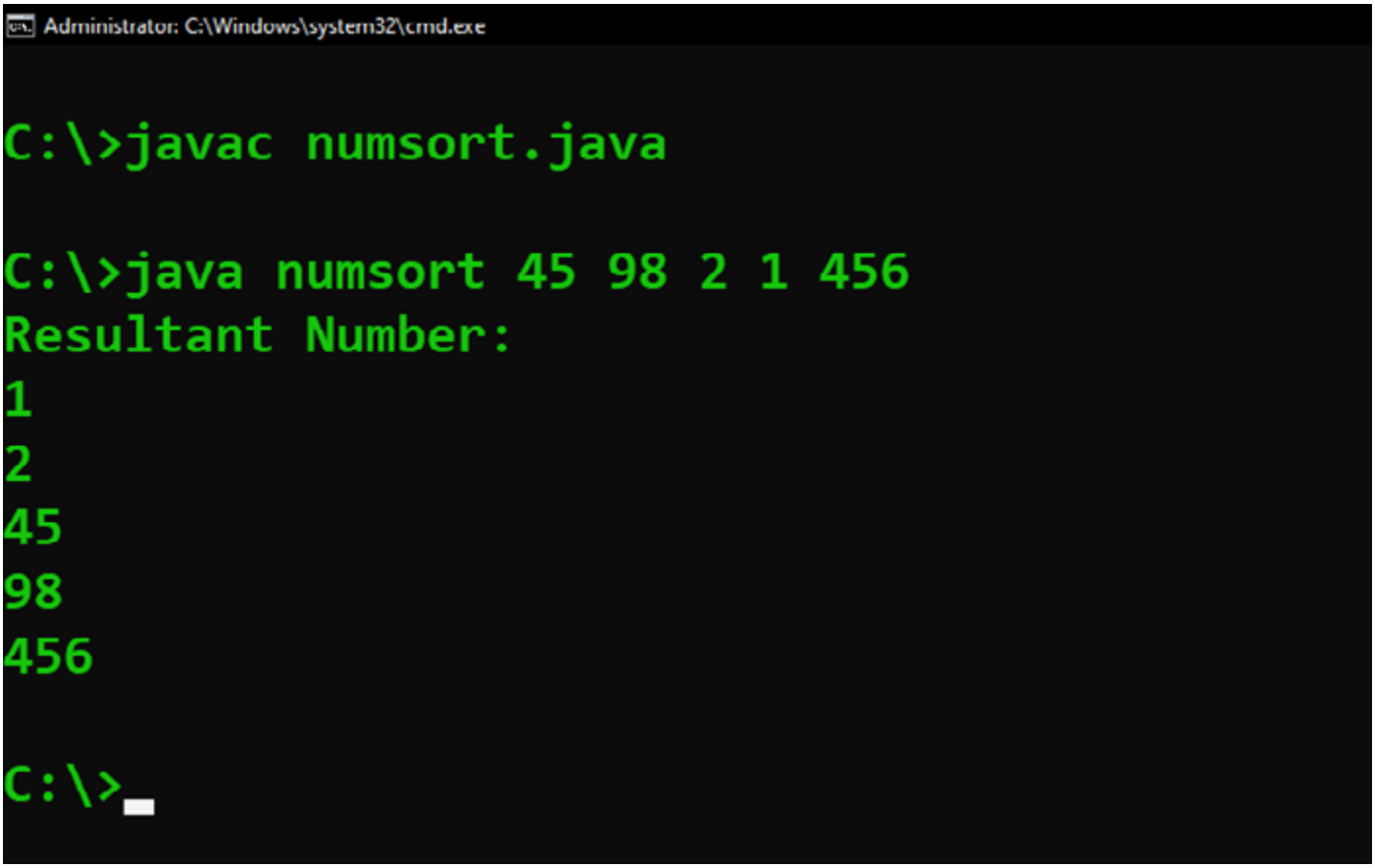

Administrator: C:\Windows\system32\cmd.exe
C:\>javac methodover.java
Note: methodover.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
C:\>java methodover
Enter The Side Of Square :
5
Enter The Length & Width Of Rectangle :
5
3
Enter The Radius Of Circle :
2.5
Area Of Square Is :25
Area Of Rectangle Is :15
Area Of Circle Is :19.625
C:\>

2. SORTING OF NUMBERS USING COMMAND LINE ARGUMENT

SOURCE CODE :

```
class numsort
{
	public static void main(String args[])
	{
	int n=args.length;
	int a[]=new int[n];
	int i,j;
	for(i=0;i<n;i++)
		a[i]=Integer.parseInt(args[i]);
	for(i=0;i<n;i++)
	{
		for(j=i+1;j<n;j++)
		{
			if(a[i]>a[j])
			{
				int t=a[i];
				a[i]=a[j];
				a[j]=t;
			}
		}
	}
	System.out.println("Resultant Number:");
	for(i=0;i<n;i++)
		System.out.println(a[i]);
	}
}
```

OUTPUT:


Administrator: C:\Windows\system32\cmd.exe
C:\>javac numsort.java
C:\>java numsort 45 98 2 1 456
Resultant Number:
1
2
45
98
456
C:\>

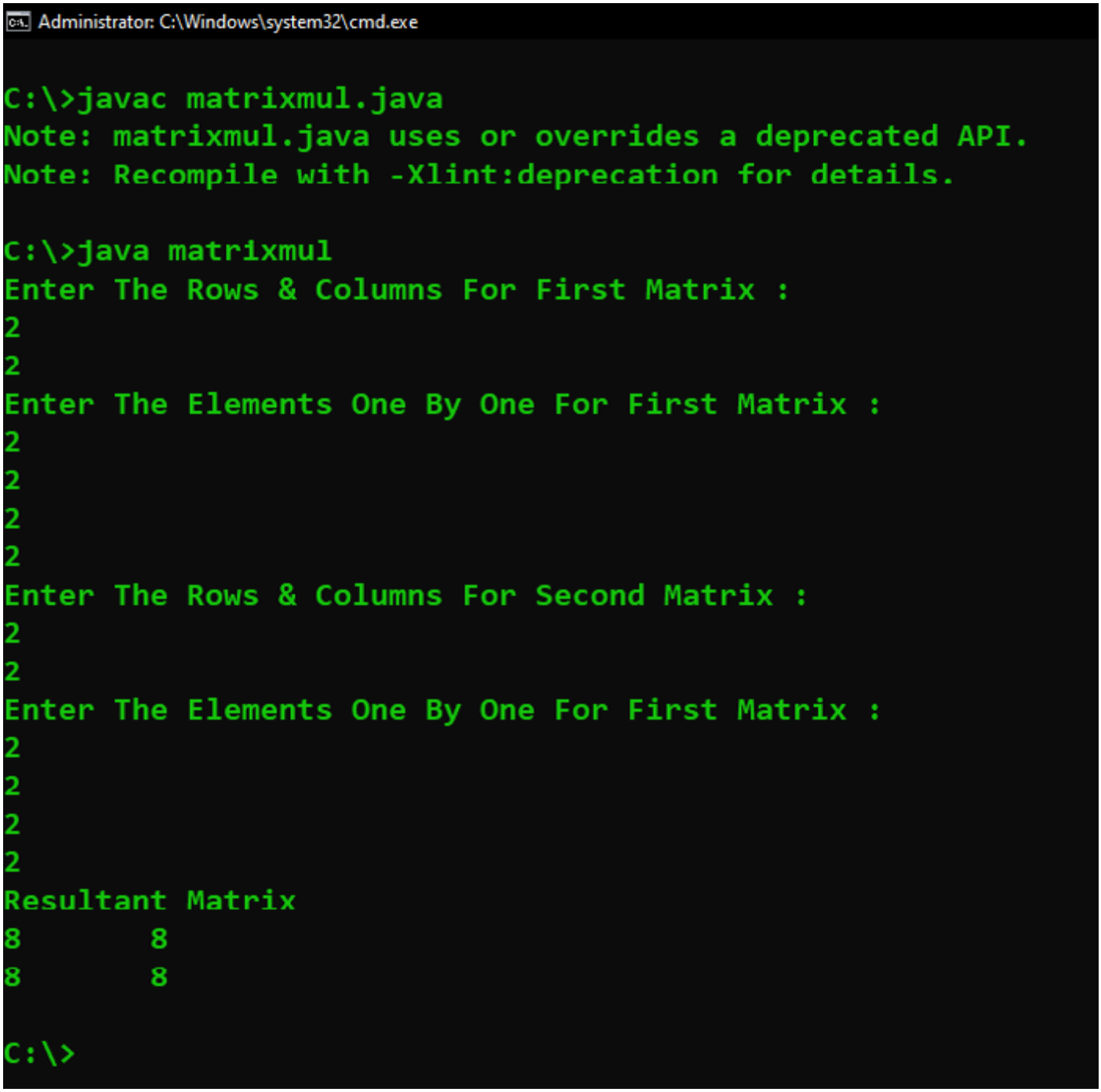
3. MATRIX MULTIPLICATION

SOURCE CODE :

```
import java.io.*;
class matrixmul
{
	int a[][]=new int[3][3];
	int b[][]=new int[3][3];
	int c[][]=new int[3][3];
	int r1,r2,c1,c2;
	int i,j;
	void getdata()throws IOException
	{
		DataInputStream obj = new DataInputStream (System.in);
		System.out.println("Enter The Rows & Columns For First Matrix :");
		r1=Integer.parseInt(obj.readLine());
		c1=Integer.parseInt(obj.readLine());
		System.out.println("Enter The Elements One By One For First Matrix :");
		for(i=0;i<r1;i++)
			for(j=0;j<c1;j++)
				a[i][j]=Integer.parseInt(obj.readLine());
		System.out.println("Enter The Rows & Columns For Second Matrix :");
		r2=Integer.parseInt(obj.readLine());
		c2=Integer.parseInt(obj.readLine());
		System.out.println("Enter The Elements One By One For First Matrix :");
		for(i=0;i<r2;i++)
			for(j=0;j<c2;j++)
				b[i][j]=Integer.parseInt(obj.readLine());
	}
	void mul()
	{
		if(c1!=r2)
		{
			System.out.println("Matrix Multiplication Is Not Possible");
			System.exit(0);
		}
```

```
        else
        {
            for(i=0;i<r1;i++)
            {
                for(j=0;j<c1;j++)
                {
                c[i][j]=0;
                for(int k=0;k<r2;k++)
                    c[i][j]=c[i][j]+(a[i][k]*b[k][j]);
                }
            }
        }
    }
    void putdata()
    {
        System.out.println("Resultant Matrix");
        for(i=0;i<r1;i++)
        {
            for(int j=0;j<c2;j++)
            {
                System.out.print(c[i][j]+"\t");
            }
            System.out.println();
        }
    }
    public static void main(String args[])throws IOException
    {
        matrixmul m = new matrixmul();
        m.getdata();
        m.mul();
        m.putdata();
    }
}
```

OUTPUT:


Administrator: C:\Windows\system32\cmd.exe
C:\>javac matrixmul.java
Note: matrixmul.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
C:\>java matrixmul
Enter The Rows & Columns For First Matrix :
2
2
Enter The Elements One By One For First Matrix :
2
2
2
2
Enter The Rows & Columns For Second Matrix :
2
2
Enter The Elements One By One For First Matrix :
2
2
2
2
Resultant Matrix
8 8
8 8
C:\>

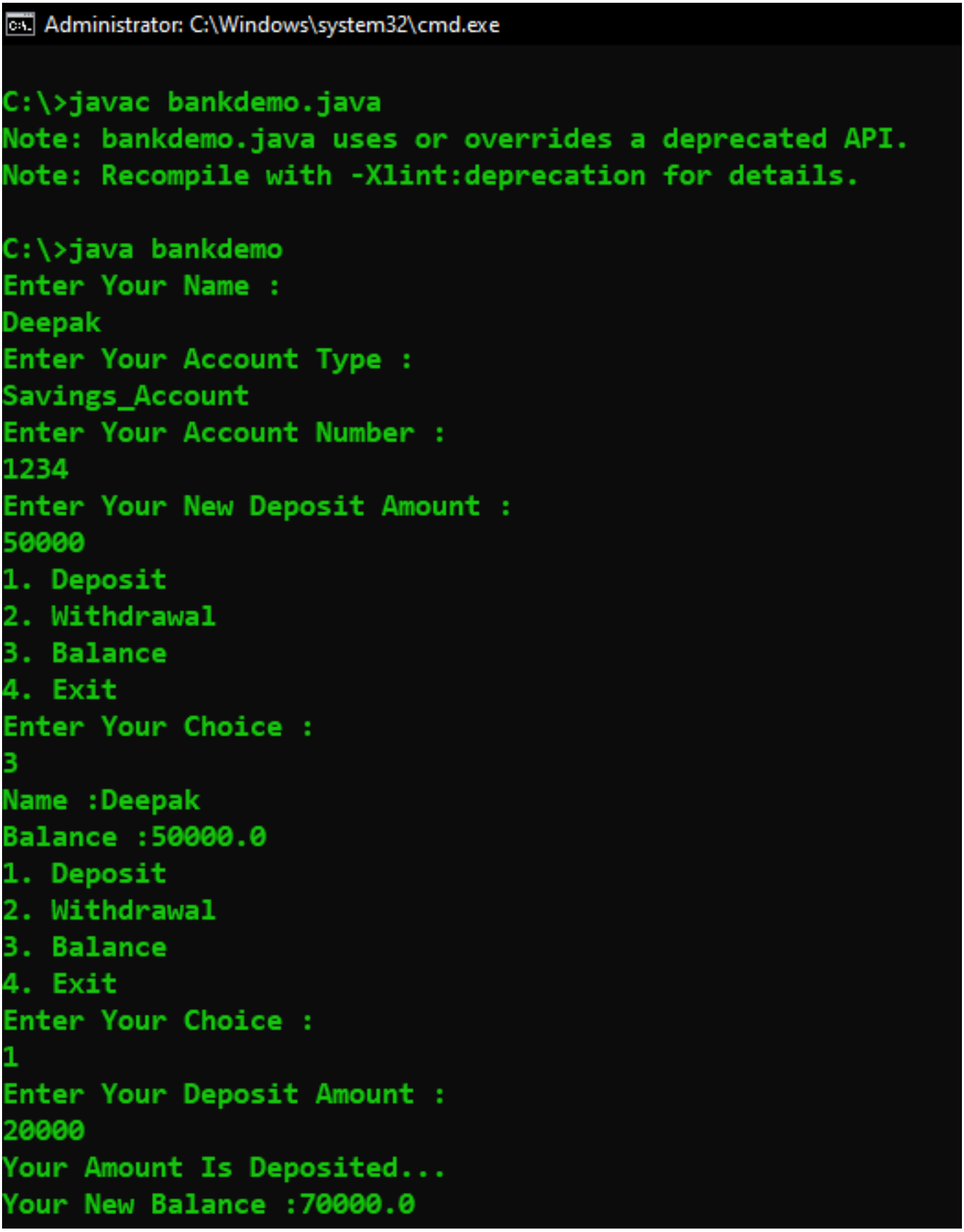
4. BANKING OPERATIONS

SOURCE CODE :

```
import java.io.*;
class bank
{
	DataInputStream obj= new DataInputStream(System.in);
	String name,act,acno;
	double bal;
	bank()throws IOException
	{
		System.out.println("Enter Your Name :");
		name=obj.readLine();
		System.out.println("Enter Your Account Type :");
		act=obj.readLine();
		System.out.println("Enter Your Account Number :");
		acno=obj.readLine();
		System.out.println("Enter Your New Deposit Amount :");
		bal=Double.parseDouble(obj.readLine());
	}
	void deposit(double amt)
	{
		bal=bal+amt;
		System.out.println("Your Amount Is Deposited...");
		System.out.println("Your New Balance :"+bal);
	}
	void withdraw(double wamt)
	{
		if(bal-wamt>=1000)
		{
			bal=bal-wamt;
			System.out.println("Your Amount Is Withdrawal..");
			System.out.println("Your New Balance :"+bal);
		}
		else
			System.out.println("Minimum Balnce Is Required.. !");
	}
	void display()
	{
		System.out.println("Name :"+name);
```

```
                System.out.println("Balance :"+bal);
        }
}
class bankdemo
{
        public static void main(String args[])throws IOException
        {
                bank b= new bank();
                DataInputStream m = new DataInputStream(System.in);
                int ch;
                double amt;
                do
                {
                        System.out.println("1. Deposit");
                        System.out.println("2. Withdrawal");
                        System.out.println("3. Balance");
                        System.out.println("4. Exit");
                        System.out.println("Enter Your Choice :");
                        ch=Integer.parseInt(m.readLine());
                        switch(ch)
                        {
                                case 1:
                                        System.out.println("Enter Your Deposit Amount :");
                                        amt=Double.parseDouble(m.readLine());
                                        b.deposit(amt);
                                        break;
                                case 2:
                                        System.out.println("Enter Your Withdrawal Amount :");
                                        amt=Double.parseDouble(m.readLine());
                                        b.withdraw(amt);
                                        break;
                                case 3:
                                        b.display();
                                        break;
                                case 4:
                                        System.exit(0);
                                        break;
                                default:
                                        System.out.println("Invalid Choice ... !");
                                        break;
                        }
                }while(ch<4);
}
}
```

OUTPUT:


Administrator: C:\Windows\system32\cmd.exe
C:\>javac bankdemo.java
Note: bankdemo.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
C:\>java bankdemo
Enter Your Name :
Deepak
Enter Your Account Type :
Savings_Account
Enter Your Account Number :
1234
Enter Your New Deposit Amount :
50000
1. Deposit
2. Withdrawal
3. Balance
4. Exit
Enter Your Choice :
3
Name :Deepak
Balance :50000.0
1. Deposit
2. Withdrawal
3. Balance
4. Exit
Enter Your Choice :
1
Enter Your Deposit Amount :
20000
Your Amount Is Deposited...
Your New Balance :70000.0

```
1. Deposit
2. Withdrawal
3. Balance
4. Exit
Enter Your Choice :
2
Enter Your Withdrawal Amount :
30000
Your Amount Is Withdrawal..
Your New Balance :40000.0
1. Deposit
2. Withdrawal
3. Balance
4. Exit
Enter Your Choice :
2
Enter Your Withdrawal Amount :
40000
Minimum Balnce Is Required.. !
1. Deposit
2. Withdrawal
3. Balance
4. Exit
Enter Your Choice :
-9
Invalid Choice ... !
1. Deposit
2. Withdrawal
3. Balance
4. Exit
Enter Your Choice :
4

C:\>_
```

5. USAGE OF USER DEFINED PACKAGES

SOURCE CODE :

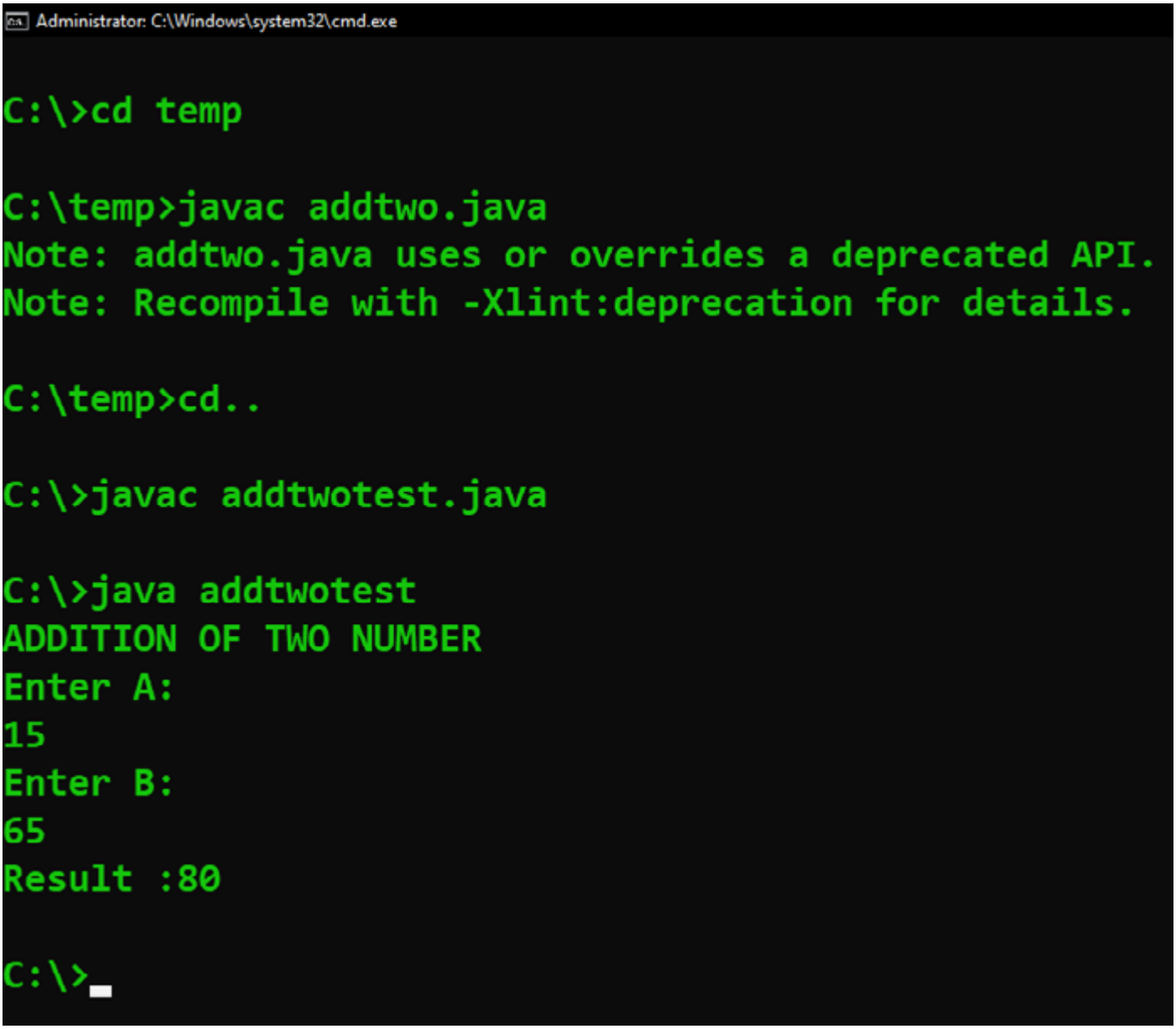
PACKAGE PROGRAM (addtwo.java)

```
package temp;
import java.io.*;
public class addtwo
{
        public int a,b,c;
        DataInputStream obj = new DataInputStream(System.in);
        public void get()throws IOException
        {
        System.out.println("Enter A:");
        a=Integer.parseInt(obj.readLine());
        System.out.println("Enter B:");
        b=Integer.parseInt(obj.readLine());
        c=a+b;
        }
        public void put()
        {
                System.out.println("Result :"+c);
        }
}
```

MAIN PROGRAM (addtwotest.java)

```
import temp.addtwo;
import java.io.*;
class addtwotest
{
        public static void main(String args[])throws IOException
        {
        addtwo m = new addtwo();
        System.out.println("ADDITION OF TWO NUMBER");
        m.get();
        m.put();
        }
}
```

OUTPUT:


Administrator: C:\Windows\system32\cmd.exe
C:\>cd temp
C:\temp>javac addtwo.java
Note: addtwo.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
C:\temp>cd..
C:\>javac addtwotest.java
C:\>java addtwotest
ADDITION OF TWO NUMBER
Enter A:
15
Enter B:
65
Result :80
C:\>

6. EXCEPTION HANDLING

SOURCE CODE :

```
import java.io.*;
class exhand
{
	public static void main(String args[])throws IOException
	{
		int arr[]=new int[10];
		int a,b,c;
		int ele,ind;
		DataInputStream obj=new DataInputStream(System.in);
		try
		{
			System.out.println("Enter Numerator:");
			a=Integer.parseInt(obj.readLine());
			System.out.println("Enter Denominator:");
			b=Integer.parseInt(obj.readLine());
			c=a/b;
			System.out.println("Result :"+c);
			System.out.println("Enter The Element :");
			ele=Integer.parseInt(obj.readLine());
			System.out.println("Enter The Index in which element to be stored ");
			ind=Integer.parseInt(obj.readLine());
			arr[ind]=ele;
			System.out.println("Element " + ele + " stored at location "+ind);
		}
		catch(ArithmeticException ae)
		{
			System.out.println("Exception : "+ae+" raised ");
		}
		catch(ArrayIndexOutOfBoundsException aie)
		{
			System.out.println("Exception : "+aie+" raised");
		}
	}
}
```

OUTPUT 1:

```
Administrator: C:\Windows\system32\cmd.exe

C:\>javac exhand.java
Note: exhand.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.

C:\>java exhand
Enter Numerator:
10
Enter Denominator:
2
Result :5
Enter The Element :
21
Enter The Index in which element to be stored
5
Element 21 stored at location 5
```

OUTPUT 2:

```
C:\>javac exhand.java
Note: exhand.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.

C:\>java exhand
Enter Numerator:
10
Enter Denominator:
0
Exception : java.lang.ArithmeticException: / by zero raised
```

OUTPUT 3:

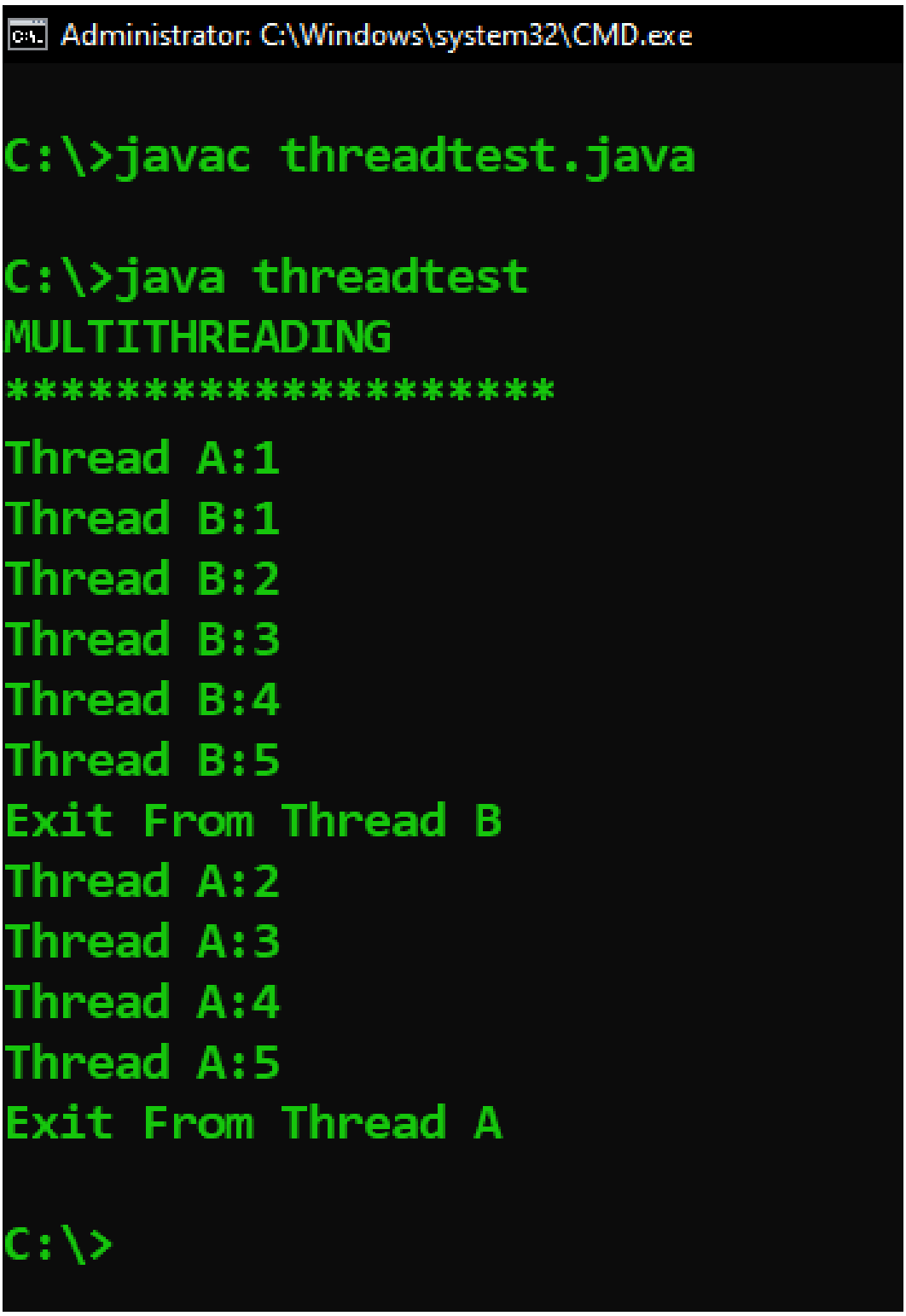
```
C:\>javac exhand.java
Note: exhand.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.

C:\>java exhand
Enter Numerator:
10
Enter Denominator:
2
Result :5
Enter The Element :
25
Enter The Index in which element to be stored
25
Exception : java.lang.ArrayIndexOutOfBoundsException: 25 raised

C:\>
```

7. MULTITHREADING

SOURCE CODE :

```
class A extends Thread
{
	public void run()
	{
		for(int i=1;i<=5;i++)
			System.out.println("Thread A:"+i);
		System.out.println("Exit From Thread A");
	}
}
class B extends Thread
{
	public void run()
	{
		for(int j=1;j<=5;j++)
			System.out.println("Thread B:"+j);
		System.out.println("Exit From Thread B");
	}
}
class threadtest
{
	public static void main(String args[])
	{
		System.out.println("MULTITHREADING");
		System.out.println("**********");
		A o1=new A();
		B o2=new B();
		o1.start();
		o2.start();
	}
}
```

OUTPUT:

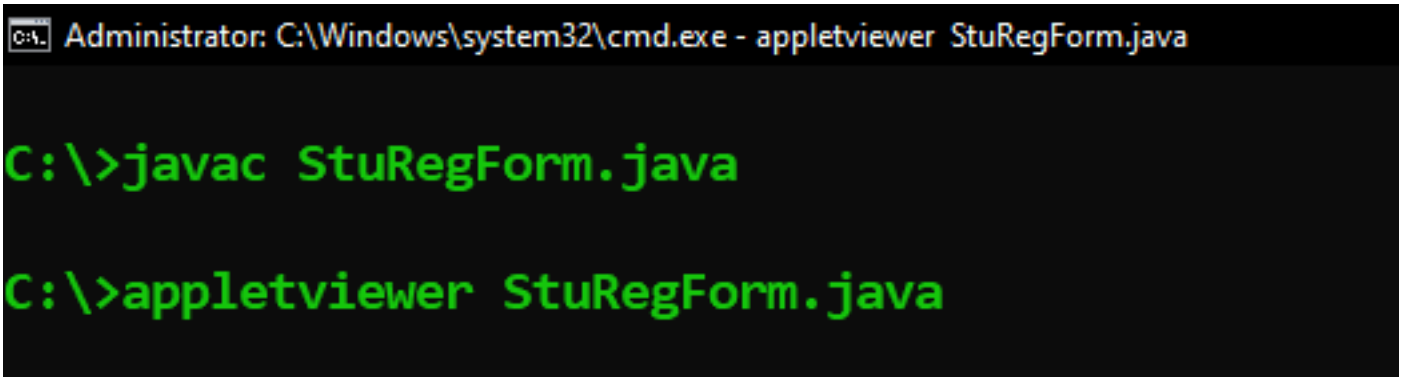

Administrator: C:\Windows\system32\CMD.exe
C:\>javac threadtest.java
C:\>java threadtest
MULTITHREADING
****
Thread A:1
Thread B:1
Thread B:2
Thread B:3
Thread B:4
Thread B:5
Exit From Thread B
Thread A:2
Thread A:3
Thread A:4
Thread A:5
Exit From Thread A
C:\>

8. USAGE OF APPLET PROGRAMMING

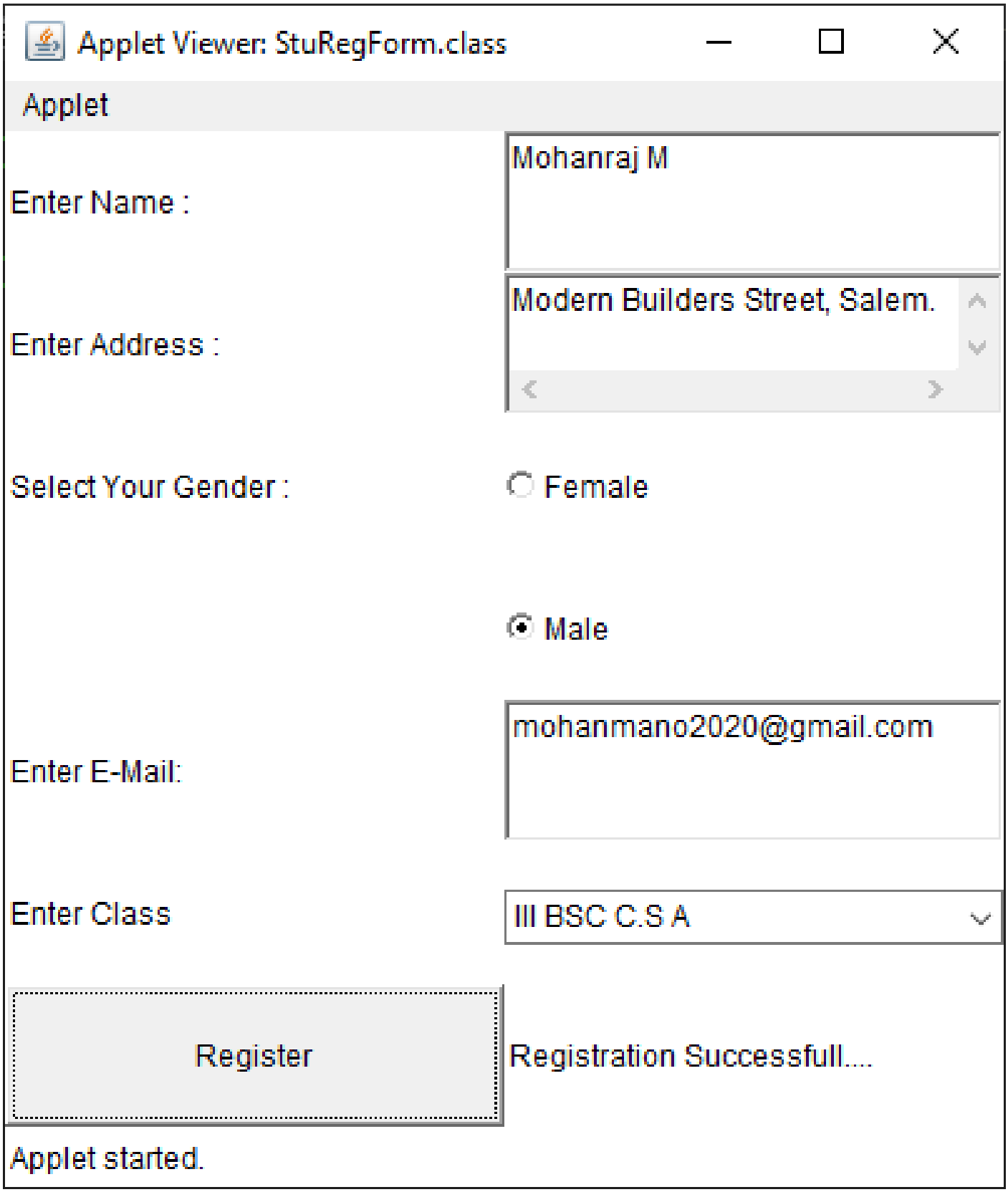
SOURCE CODE :

```
import java.awt.*;
import java.applet.*;
import java.awt.event.*;
/*
<applet code="StuRegForm.class" height="400" width="400">
</applet>
*/
public class StuRegForm extends Applet implements ActionListener
{
        Button b1;
        Label l1;
        public void init()
        {
                l1=new Label("");
                setLayout(new GridLayout(7,2));
                add(new Label("Enter Name :"));
                add(new TextField(10));
                add(new Label("Enter Address :"));
                add(new TextArea());
                add(new Label("Select Your Gender :"));
                CheckboxGroup cbg=new CheckboxGroup();
                add(new Checkbox("Female",cbg,true));
                add(new Label(""));
                add(new Checkbox("Male",cbg,false));
                add(new Label("Enter E-Mail:"));
                add(new TextField(20));
                add(new Label("Enter Class"));
                Choice cls = new Choice();
                cls.addItem("III BSC C.S A");
                cls.addItem("III BCA");
                cls.addItem("III BBA");
                cls.addItem("III B.A TAMIL");
                cls.addItem("III B.A ENGLISH");
                add(cls);
                b1=new Button("Register");
```

```
            add(b1);
            add(l1);
            b1.addActionListener(this);
        }
        public void actionPerformed(ActionEvent ae)
        {
            l1.setText("Registration Successfull....");
        }
}
```



APPLET VIEWER OUTPUT:

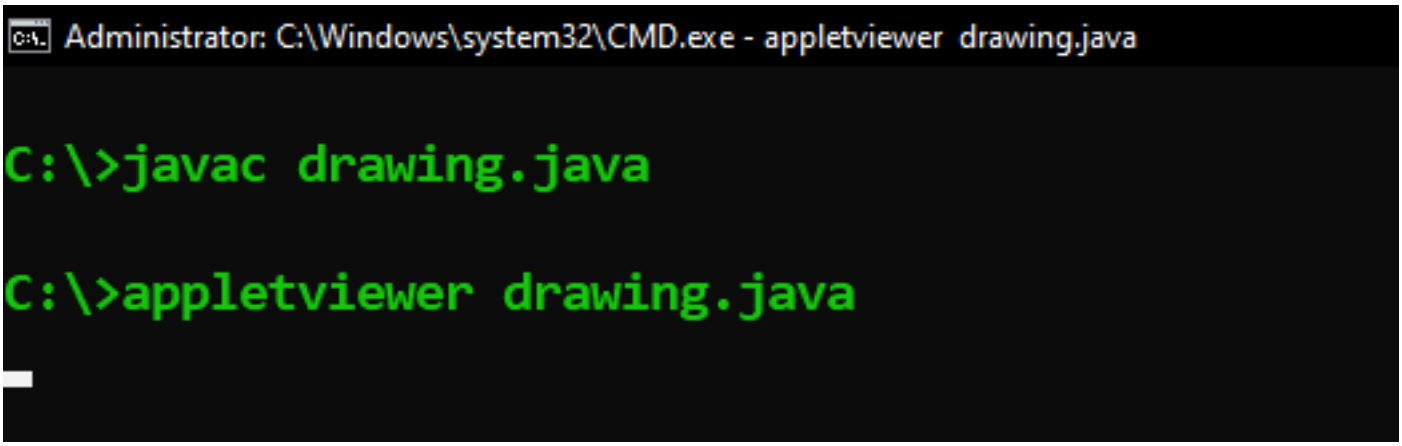


9. USAGE OF GRAPHICAL METHODS

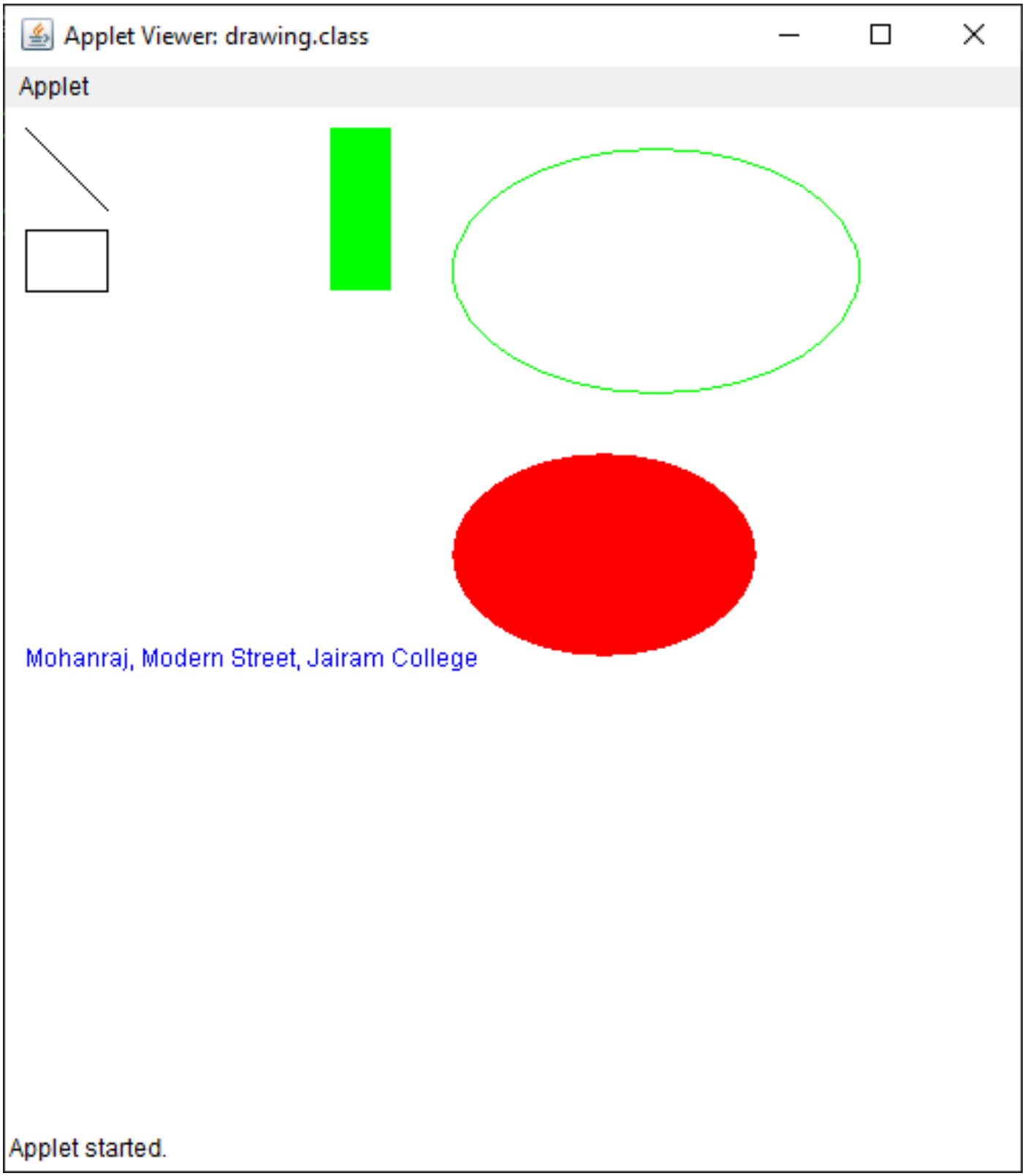
SOURCE CODE :

```
import java.awt.*;
import java.applet.*;
/*
<applet code="drawing.class" height="500" width="500">
</applet>
*/
public class drawing extends Applet
{
	public void paint(Graphics g)
	{
		g.drawLine(10,10,50,50);
		g.drawRect(10,60,40,30);
		g.setColor(Color.green);
		g.fillRect(160,10,30,80);
		g.drawOval(220,20,200,120);
		g.setColor(Color.red);
		g.fillOval(220,170,150,100);
		g.setColor(Color.blue);
		g.drawString("Mohanraj, Modern Street, Jairam College",10,275);
	}
}
```

OUTPUT:



APPLET VIEWER OUTPUT:



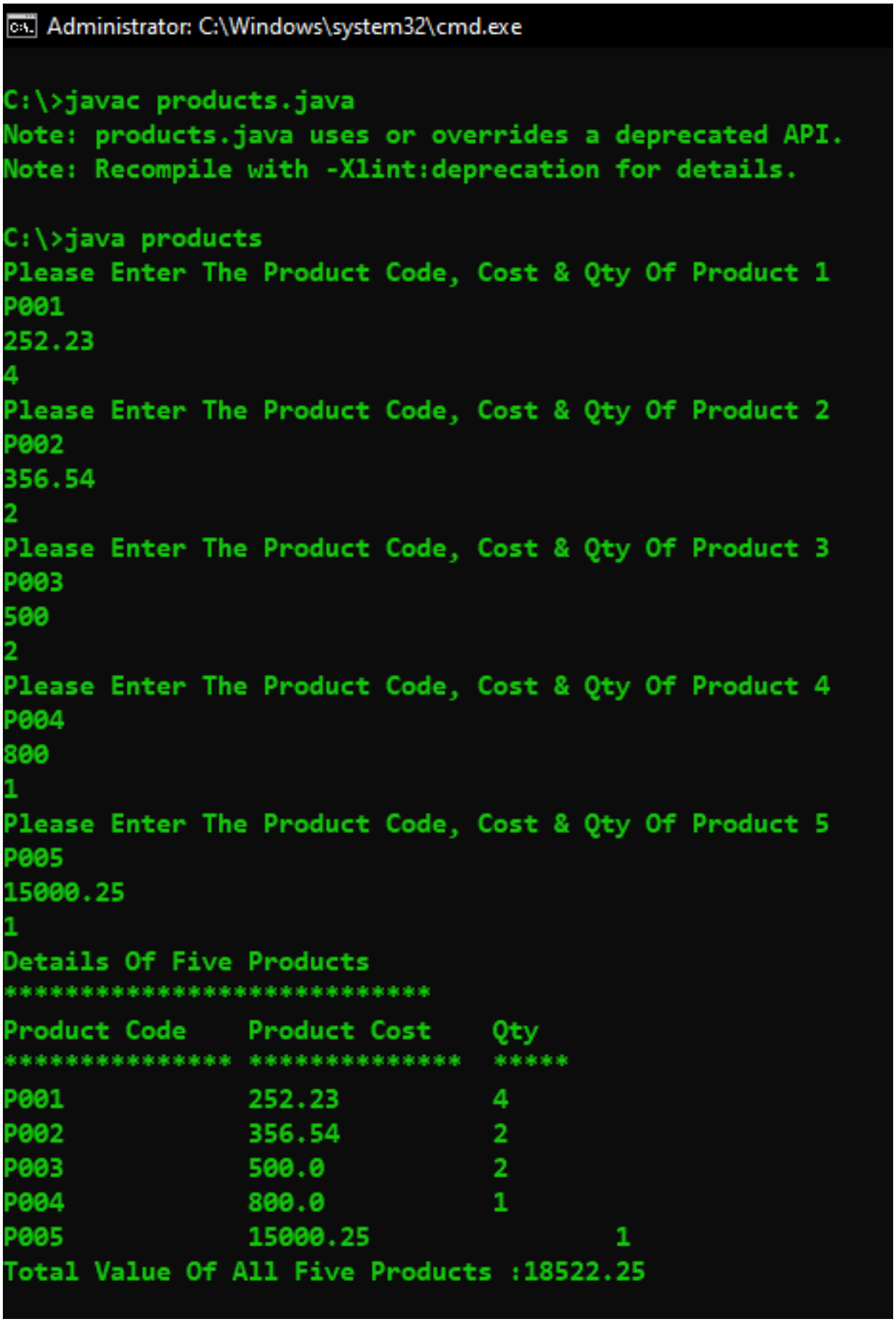
10. SEQUENTIAL FILE

SOURCE CODE :

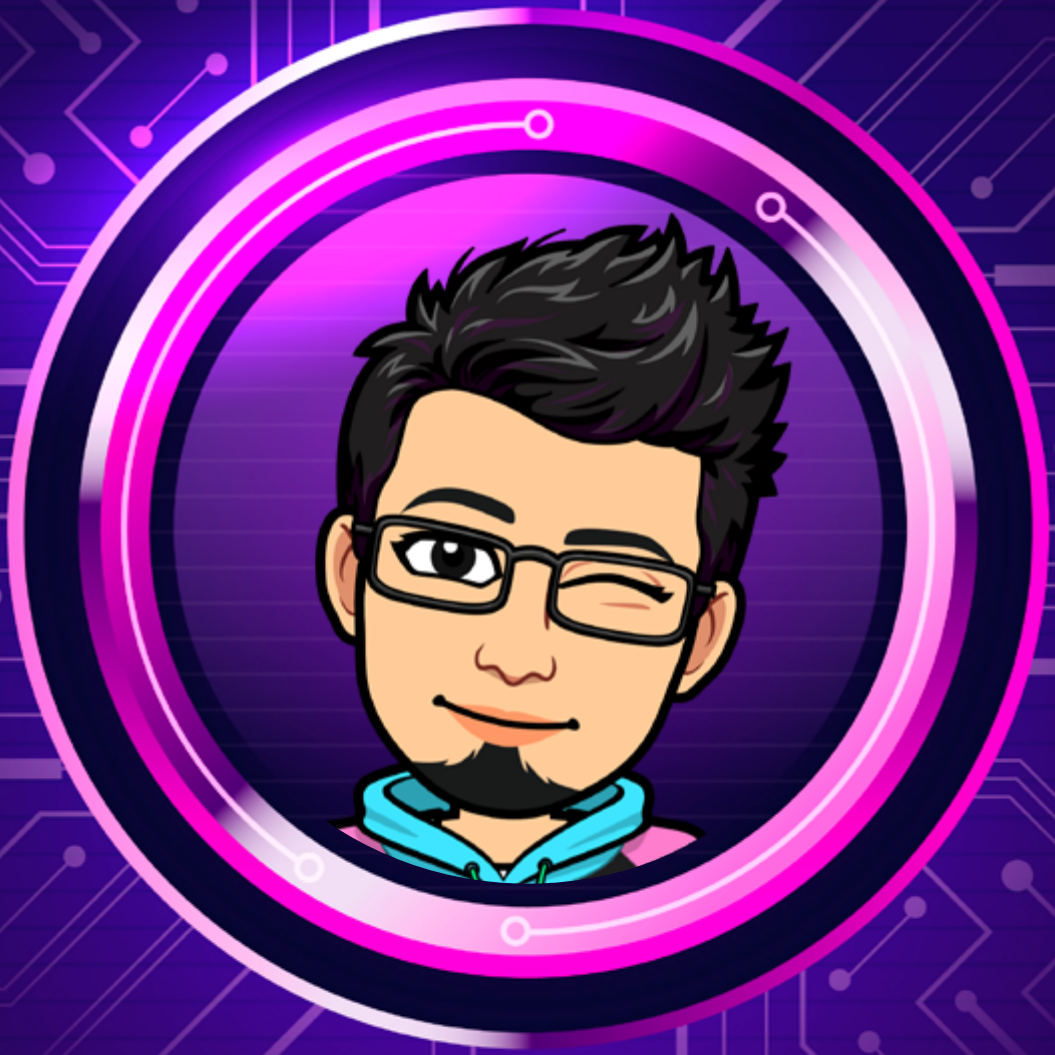
```
import java.io.*;
import java.util.*;
public class products
{
	public static void main(String args[])
	{
		File file = new File("products");
		String pcode;
		double pcost;
		int qty;
		try
		{
			FileOutputStream fos = new FileOutputStream(file);
			DataOutputStream dos = new DataOutputStream(fos);
			DataInputStream din = new DataInputStream(System.in);
			for(int i=0;i<5;i++)
			{
	System.out.println("Please Enter The Product Code, Cost & Qty Of Product "+(i+1));
				pcode=din.readLine();
				pcost=Double.parseDouble(din.readLine());
				qty=Integer.parseInt(din.readLine());
				dos.writeUTF(pcode);
				dos.writeDouble(pcost);
				dos.writeInt(qty);
			}
			dos.close();
			FileInputStream fis = new FileInputStream(file);
			DataInputStream dis= new DataInputStream(fis);
			double total=0.0;
			System.out.println("Details Of Five Products");
			System.out.println("**************************");
			System.out.println("Product Code\tProduct Cost\tQty");
			System.out.println("**************\t**************\t*****");
```

```
                for(int j=0;j<5;j++)
                {
                        pcode=dis.readUTF();
                        pcost=dis.readDouble();
                        qty=dis.readInt();
                        total=total+(pcost*qty);
                        System.out.print(pcode+"\t\t");
                        System.out.print(pcost+"\t\t");
                        System.out.print(qty+"\t\t");
                        System.out.println();
                }
                System.out.println("Total Value Of All Five Products :"+total);
                dis.close();
                }
                catch (IOException e)
                {
                        System.out.println("IO Error :"+e);
                }
        }
}
```

OUTPUT:


Administrator: C:\Windows\system32\cmd.exe
C:\>javac products.java
Note: products.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
C:\>java products
Please Enter The Product Code, Cost & Qty Of Product 1
P001
252.23
4
Please Enter The Product Code, Cost & Qty Of Product 2
P002
356.54
2
Please Enter The Product Code, Cost & Qty Of Product 3
P003
500
2
Please Enter The Product Code, Cost & Qty Of Product 4
P004
800
1
Please Enter The Product Code, Cost & Qty Of Product 5
P005
15000.25
1
Details Of Five Products
Product Code Product Cost Qty
P001 252.23 4
P002 356.54 2
P003 500.0 2
P004 800.0 1
P005 15000.25 1
Total Value Of All Five Products :18522.25

Published By



M. Mohanraj

Pro Tech Developer

-> For More Information <-