Program 1:

```
import java.util.*;
class lab3_1
{
	public static void main(String args[])
	{
		int a,b,c,d,f=0;
		Scanner scr=new Scanner(System.in);
		System.out.println("\nEnter the values of a ,b ,c : ");
		a=scr.nextInt();
		b=scr.nextInt();
		c=scr.nextInt();
		d=(b*b)-(4*a*c);
		if(d==0)
		{
			System.out.println("Roots are real and Equal");
			f=1;
		}
		else if(d>0)
		{
			System.out.println("Roots are real and UnEqual");
			f=1;
		}
		else
		System.out.println("Roots are imaginary");
		if(f==1)
```

```
            {
                float r1=(float)(-b+Math.sqrt(d))/(2*a);
                float r2=(float)(-b-Math.sqrt(d))/(2*a);
                System.out.println("Roots are :   "+r1+" ,"+r2);
            }
        }
}
```

Output:

```
Microsoft Windows [Version 10.0.19041.388]
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C:\Users\dell\OneDrive\Desktop\java\lab assignments>javac lab3_1.java

C:\Users\dell\OneDrive\Desktop\java\lab assignments>java lab3_1

Enter the values of a ,b ,c :
1
2
3
Roots are imaginary

C:\Users\dell\OneDrive\Desktop\java\lab assignments>java lab3_1

Enter the values of a ,b ,c :
1
8
2
Roots are real and UnEqual
Roots are :   -0.25834262 ,-7.7416573

C:\Users\dell\OneDrive\Desktop\java\lab assignments>java lab3_1

Enter the values of a ,b ,c :
-6
5
2
Roots are real and UnEqual
Roots are :   -0.29533365 ,1.128667

C:\Users\dell\OneDrive\Desktop\java\lab assignments>
```
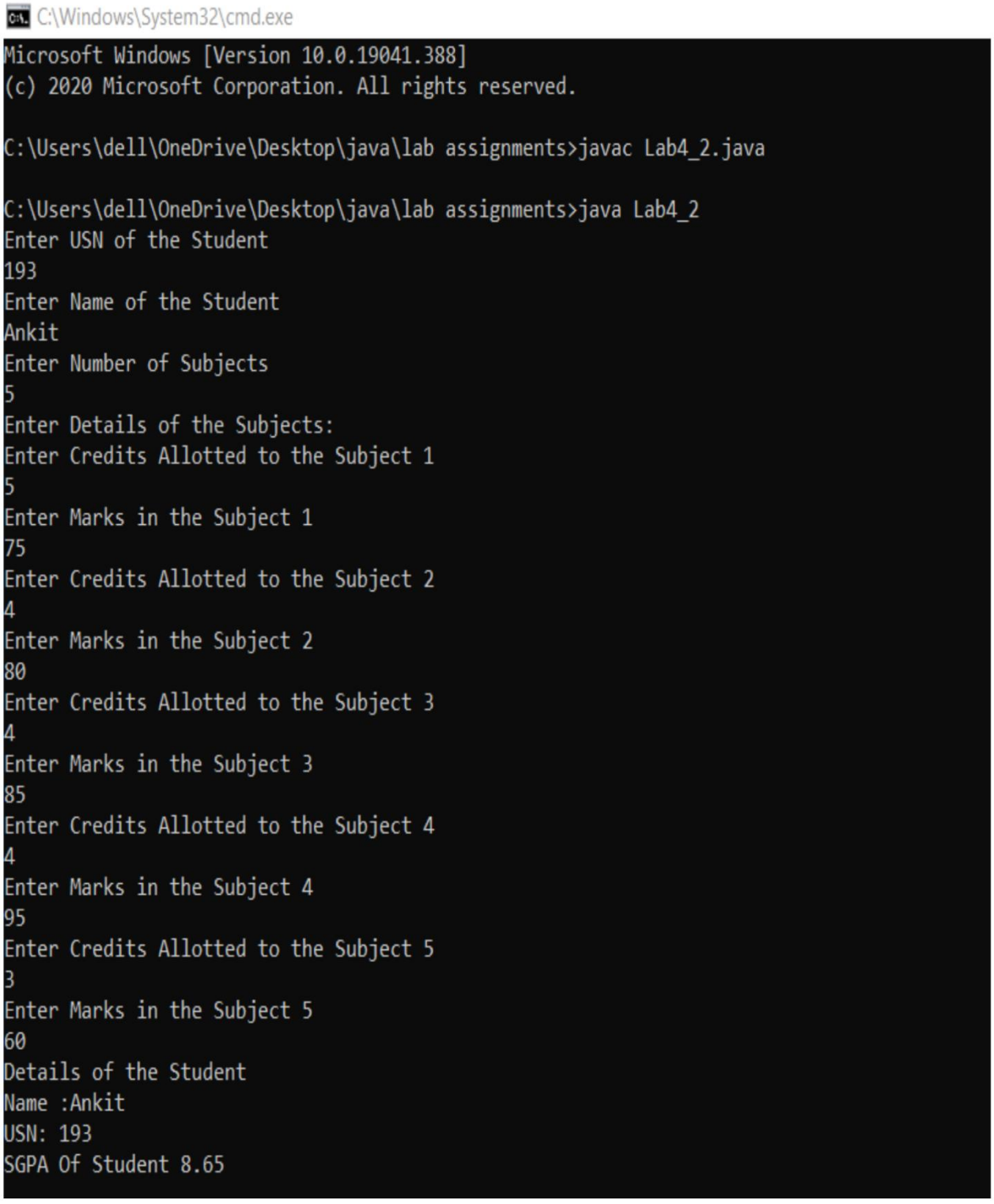

Program 2:

```
 import java.util.Scanner;
class Student
{
 String USN;
 String name;
  int n;
  double SGPA = 0;
  int totalCredits = 0;
 Scanner ss = new Scanner(System.in);

 void Details()
 {
 System.out.println("Enter USN of the Student");
 USN = ss.nextLine();
 System.out.println("Enter Name of the Student");
 name = ss.nextLine();
 System.out.println("Enter Number of Subjects");
 n = ss.nextInt();
 int credits[] = new int[n];
 double marks[] = new double[n];
 System.out.println("Enter Details of the Subjects:");
 for(int i=0;i<n;i++)
 {
  System.out.println("Enter Credits Allotted to the Subject "+(i+1));
  credits[i] = ss.nextInt();
  System.out.println("Enter Marks in the Subject "+(i+1));
```

```
 marks[i] = ss.nextInt();
 Calculate(credits[i],marks[i],i);
}
  }
  void Calculate(int credit,double mark,int j)
  {
 totalCredits = totalCredits + credit;
 if(mark>=90&&mark<=100)
  SGPA = SGPA + (10*credit);
 else if(mark>=80 && mark<=89)
  SGPA = SGPA + (9*credit);
 else if(mark>=70&&mark<=79)
  SGPA = SGPA + (8*credit);
 else if(mark>=60&&mark<=69)
  SGPA = SGPA + (7*credit);
 else if(mark>=50 && mark<=59)
  SGPA = SGPA + (6*credit);
 else if(mark>=40&&mark<=49)
  SGPA = SGPA + (5*credit);
 else
  System.out.println("Failed In Subject "+(j+1));
}
void Display()
{
 System.out.println("Details of the Student");
 System.out.println("Name :"+name);
 System.out.println("USN: "+USN);
```

```
  System.out.println("SGPA Of Student "+(SGPA/totalCredits));
 }
}

public class Lab4_2
{
 public static void main(String args[])
 {
  Student s1 = new Student();
  s1.Details();
  s1.Display();
 }
}
```

Output:


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\dell\OneDrive\Desktop\java\lab assignments>javac Lab4_2.java
C:\Users\dell\OneDrive\Desktop\java\lab assignments>java Lab4_2
Enter USN of the Student
193
Enter Name of the Student
Ankit
Enter Number of Subjects
5
Enter Details of the Subjects:
Enter Credits Allotted to the Subject 1
5
Enter Marks in the Subject 1
75
Enter Credits Allotted to the Subject 2
4
Enter Marks in the Subject 2
80
Enter Credits Allotted to the Subject 3
4
Enter Marks in the Subject 3
85
Enter Credits Allotted to the Subject 4
4
Enter Marks in the Subject 4
95
Enter Credits Allotted to the Subject 5
3
Enter Marks in the Subject 5
60
Details of the Student
Name :Ankit
USN: 193
SGPA Of Student 8.65

```
C:\Users\dell\OneDrive\Desktop\java\lab assignments>java Lab4_2
Enter USN of the Student
056
Enter Name of the Student
Sanket
Enter Number of Subjects
2
Enter Details of the Subjects:
Enter Credits Allotted to the Subject 1
5
Enter Marks in the Subject 1
25
Failed In Subject 1
Enter Credits Allotted to the Subject 2
4
Enter Marks in the Subject 2
80
Details of the Student
Name :Sanket
USN: 056
SGPA Of Student 4.0

C:\Users\dell\OneDrive\Desktop\java\lab assignments>
```

Program 3:

```
import java.util.*;
import java.lang.*;
class Book {
	String name, author;
	double price;
	int num_pages;
	Scanner in = new Scanner(System.in);

	Book() {
		System.out.println("Enter name of book: ");
		name = in.nextLine();

		System.out.println("Enter name of author: ");
		author = in.nextLine();

		System.out.println("Enter price of book in Rs: ");
		price = in.nextDouble();

		System.out.println("Enter number of pages in the book: ");
		num_pages = in.nextInt();
	}

	void show() {
		System.out.println("Name: " + name);
		System.out.println("Author: " + author);
		System.out.println("Price: " + price);
```

```
            System.out.println("Number of pages: " + num_pages);
        }

        public String toString() {
            return name + ", By " + author + " for Rs." + price + " and has " + num_pages + "
pages";
        }

        public static void main(String[] args) {

            Scanner in = new Scanner(System.in);

            int n, x;

            System.out.println("Enter number of books to be created: ");
            n = in.nextInt();

            Book B[] = new Book[n];

            for(int i = 0; i < n; i++) {
                System.out.println("Book " + (i+1));
                B[i] = new Book();
                System.out.println();
            }

            for(int i = 0; i < n; i++) {
                System.out.println("Book " + (i+1));
```

```
                System.out.println(B[i]);
                System.out.println();
            }
            do {
                System.out.println("Enter the book number whose details you want to
display: ");
                x = in.nextInt();
            } while(x < 1 && x > n);
            B[x-1].show();

        }
}
```

Output :

```
C:\Users\dell\OneDrive\Desktop\java>javac Book.java

C:\Users\dell\OneDrive\Desktop\java>java Book
Enter number of books to be created:
2
Book 1
Enter name of book:
2 States
Enter name of author:
Chetan Bhagat
Enter price of book in Rs:
299
Enter number of pages in the book:
556

Book 2
Enter name of book:
The Boy who loved
Enter name of author:
Durjoy Datta
Enter price of book in Rs:
499
Enter number of pages in the book:
823

Book 1
2 States, By Chetan Bhagat for Rs.299.0 and has 556 pages

Book 2
The Boy who loved, By Durjoy Datta  for Rs.499.0 and has 823 pages

Enter the book number whose details you want to display:
1
Name: 2 States
Author: Chetan Bhagat
Price: 299.0
Number of pages: 556

C:\Users\dell\OneDrive\Desktop\java>
```

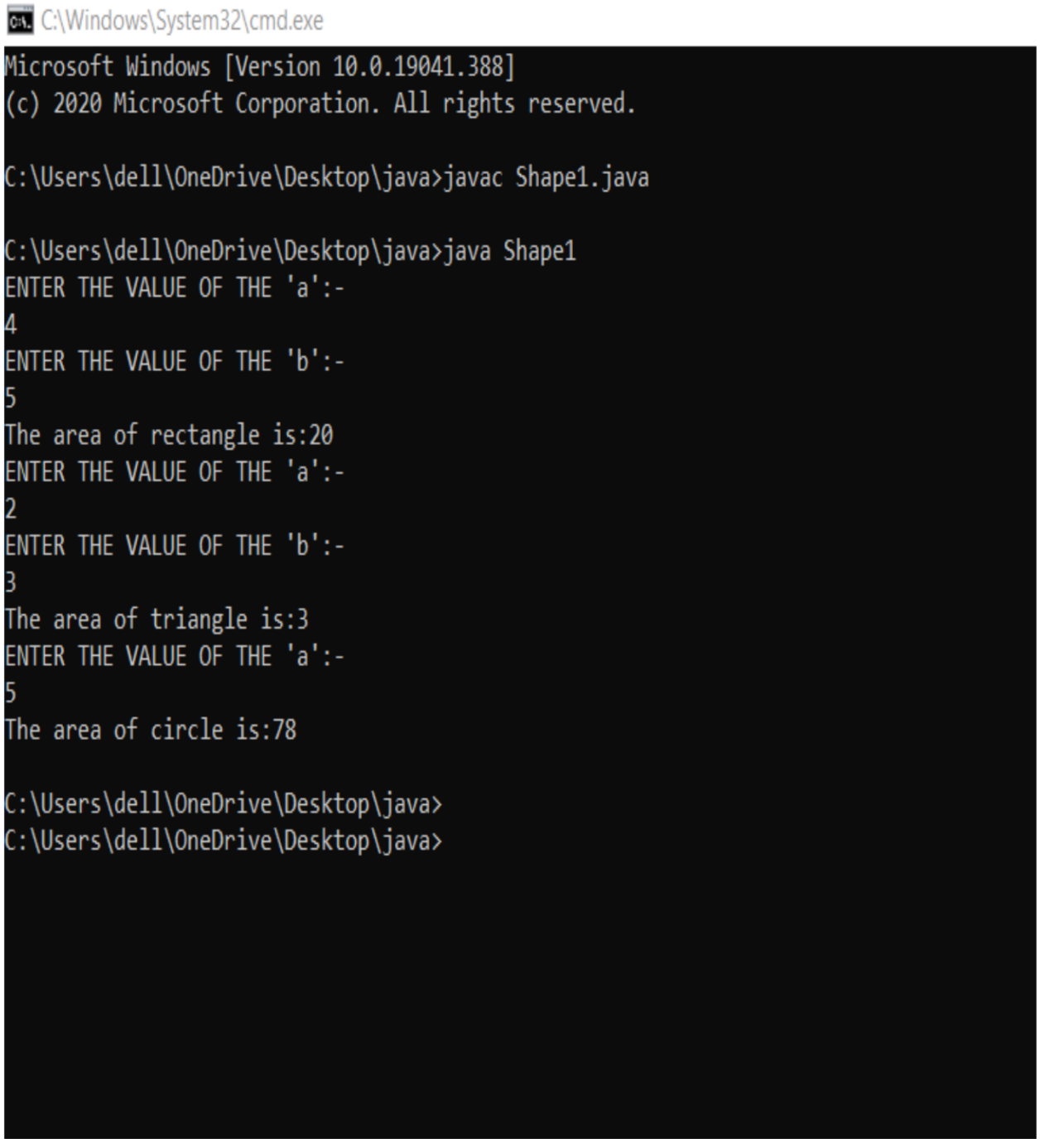
Program 4:

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

abstract class shape
{
    int a,b;
    abstract public void print_area();

}
class rectangle extends shape
{
 public int area_rect;
      @Override
 public void print_area()
 {
       Scanner ss= new Scanner(System.in);
      System.out.println("ENTER THE VALUE OF THE 'a':-");
       a=ss.nextInt();
      System.out.println("ENTER THE VALUE OF THE 'b':-");
      int   b=ss.nextInt();
       area_rect=a*b;
```

```
        System.out.println("The area of rectangle is:"+area_rect);
 }

}
class triangle extends shape
{
 int area_tri;
      @Override
 public void print_area()
 {
 Scanner ss= new Scanner(System.in);
      System.out.println("ENTER THE VALUE OF THE 'a':-");
       a=ss.nextInt();
      System.out.println("ENTER THE VALUE OF THE 'b':-");
        b=ss.nextInt();
  area_tri=(int) (0.5*a*b);
            System.out.println("The area of triangle is:"+area_tri);
 }
}

class circle extends shape
{
 int area_circle;
      @Override
 public void print_area()
 {
 Scanner ss= new Scanner(System.in);
```

```
        System.out.println("ENTER THE VALUE OF THE 'a':-");
         a=ss.nextInt();

  area_circle=(int) (3.14*a*a);
              System.out.println("The area of circle is:"+area_circle);
 }
}
public class Shape1 {

    public static void main(String[] args) {



        rectangle r=new rectangle();
        r.print_area();
        triangle t=new triangle();
        t.print_area();
        circle r1=new circle();
        r1.print_area();

    }

}
```

Output :


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\dell\OneDrive\Desktop\java>javac Shape1.java
C:\Users\dell\OneDrive\Desktop\java>java Shape1
ENTER THE VALUE OF THE 'a':-
4
ENTER THE VALUE OF THE 'b':-
5
The area of rectangle is:20
ENTER THE VALUE OF THE 'a':-
2
ENTER THE VALUE OF THE 'b':-
3
The area of triangle is:3
ENTER THE VALUE OF THE 'a':-
5
The area of circle is:78
C:\Users\dell\OneDrive\Desktop\java>
C:\Users\dell\OneDrive\Desktop\java>

Program 5:

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

class Account {

        String name, abc;
        int accNo;
        char accType;
        double bal = 0;
        double deposit;
        Scanner in = new Scanner(System.in);

        void input_data() {

                System.out.println("Enter your account type (S/C):");
                abc = in.nextLine();
                accType = abc.charAt(0);
        }

        void deposit() {

                System.out.println("Enter an amount to deposit: ");
                deposit = in.nextDouble();

                bal += deposit;
```

```
        System.out.println("Balance has been updated. ");
}

void view_balance() {

        System.out.println("Balance = " + bal);
}

public static void main(String[] args) {

        Scanner s = new Scanner(System.in);
        int x;
        Account a1 = new Account();
        a1.input_data();

        if(a1.accType == 'C' || a1.accType == 'c'){

                Current a2 = new Current();

                do {
                        System.out.println("WELCOME TO YOUR CURRENT ACCOUNT");
                        System.out.println("1. Deposit ");
                        System.out.println("2. Check Balance ");
                        System.out.println("3. Issue Cheque ");
                        System.out.println("4. Exit");
                        System.out.println("Enter your choice: ");
                        x = s.nextInt();
```

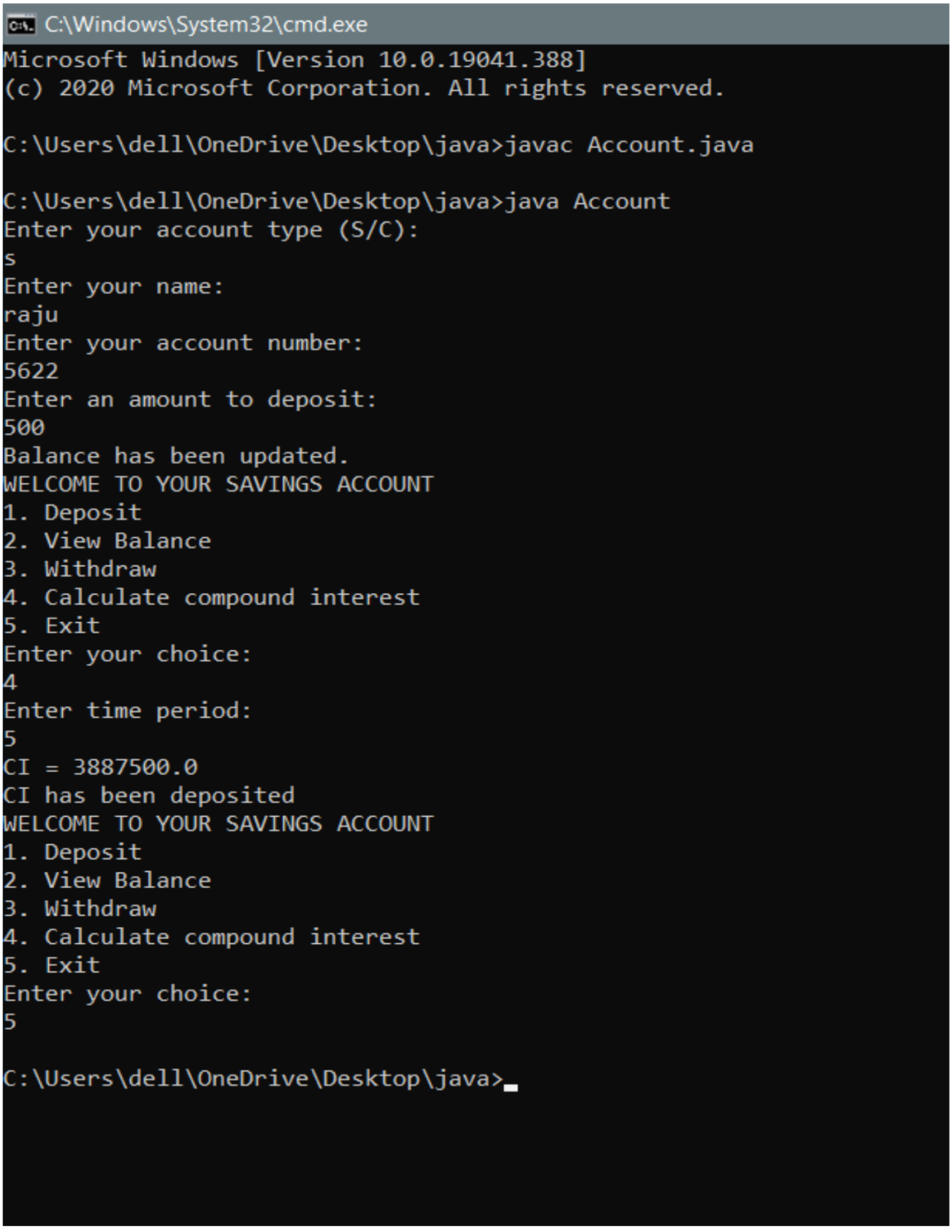
```
                switch(x) {
                        case 1: a2.deposit();
                        break;
                        case 2: a2.check_balance();
                        break;
                        case 3: a2.issue_cheque();
                        break;
                        case 4: System.exit(0);
                        break;
                        default: System.out.println("ERROR. INVALID CHOICE.");
                }

        } while(x <= 4 && x >= 1);
}
else if (a1.accType == 'S' || a1.accType == 's'){

        Savings a3 = new Savings();

        do {
                System.out.println("WELCOME TO YOUR SAVINGS ACCOUNT");
                System.out.println("1. Deposit");
                System.out.println("2. View Balance");
                System.out.println("3. Withdraw ");
                System.out.println("4. Calculate compound interest ");
                System.out.println("5. Exit ");
                System.out.println("Enter your choice: ");
```

```
                                x = s.nextInt();


                                switch(x) {
                                        case 1: a3.deposit();
                                        break;
                                        case 2: a3.view_balance();
                                        break;
                                        case 3: a3.withdraw_balance();
                                        break;
                                        case 4: a3.compute_CI();
                                        break;
                                        case 5: System.exit(0);
                                        break;
                                        default: System.out.println("ERROR. INVALID CHOICE.");
                                }



                        } while(x <= 5 && x >=1);
                }
                else System.out.println("INVALID ACCOUNT TYPE");
        }
}

class Current extends Account {

        Current() {
```

```
        System.out.println("Enter your name: ");
        name = in.nextLine();

        System.out.println("Enter your account number: ");
        accNo = in.nextInt();

        deposit();
}

double chq_amount;

void issue_cheque() {

        System.out.println("Enter amount for which cheque is to be issued.");
        chq_amount = in.nextDouble();
        if(chq_amount > bal) {
                System.out.println("ERROR! Insufficient balance in account.");
        }
        else {
                bal -= chq_amount;
                System.out.println("Cheque has been issued SUCCESSFULLY");
        }
}


void check_balance() {
```

```
                if(bal < 1000) {

                        System.out.println("Current available balance is lesser than minimum
required balance.");
                        bal -= 100;
                        System.out.println("Service charge of Rs.100 has been deducted from
your balance.");
                }
                view_balance();
        }
}

class Savings extends Account {

        double CI, withdrawal_ammount, time;

        Savings() {

                System.out.println("Enter your name: ");
                name = in.nextLine();

                System.out.println("Enter your account number: ");
                accNo = in.nextInt();

                deposit();
        }

        void compute_CI() {
```

```
            System.out.println("Enter time period: ");
            time = in.nextInt();
            CI = (bal*(Math.pow(6, time))) - bal;
            System.out.println("CI = " + CI);
            bal += CI;
            System.out.println("CI has been deposited");
        }

        void withdraw_balance() {

            System.out.println("Enter the amount you want to withdraw: ");
            withdrawal_ammount = in.nextDouble();

            if(withdrawal_ammount > bal) {
                System.out.println("ERROR! THE ENTERED AMOUNT IS GREATER THAN
THE AVAILABLE BALANCE...");
            }
            else {
                bal -= withdrawal_ammount;
                System.out.println("AMOUNT HAS SUCCESSFULLY BEEN WITHDRAWN!");
            }
        }

}
```


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\dell\OneDrive\Desktop\java>javac Account.java
C:\Users\dell\OneDrive\Desktop\java>java Account
Enter your account type (S/C):
s
Enter your name:
raju
Enter your account number:
5622
Enter an amount to deposit:
500
Balance has been updated.
WELCOME TO YOUR SAVINGS ACCOUNT
1. Deposit
2. View Balance
3. Withdraw
4. Calculate compound interest
5. Exit
Enter your choice:
4
Enter time period:
5
CI = 3887500.0
CI has been deposited
WELCOME TO YOUR SAVINGS ACCOUNT
1. Deposit
2. View Balance
3. Withdraw
4. Calculate compound interest
5. Exit
Enter your choice:
5
C:\Users\dell\OneDrive\Desktop\java>

Program 6: -

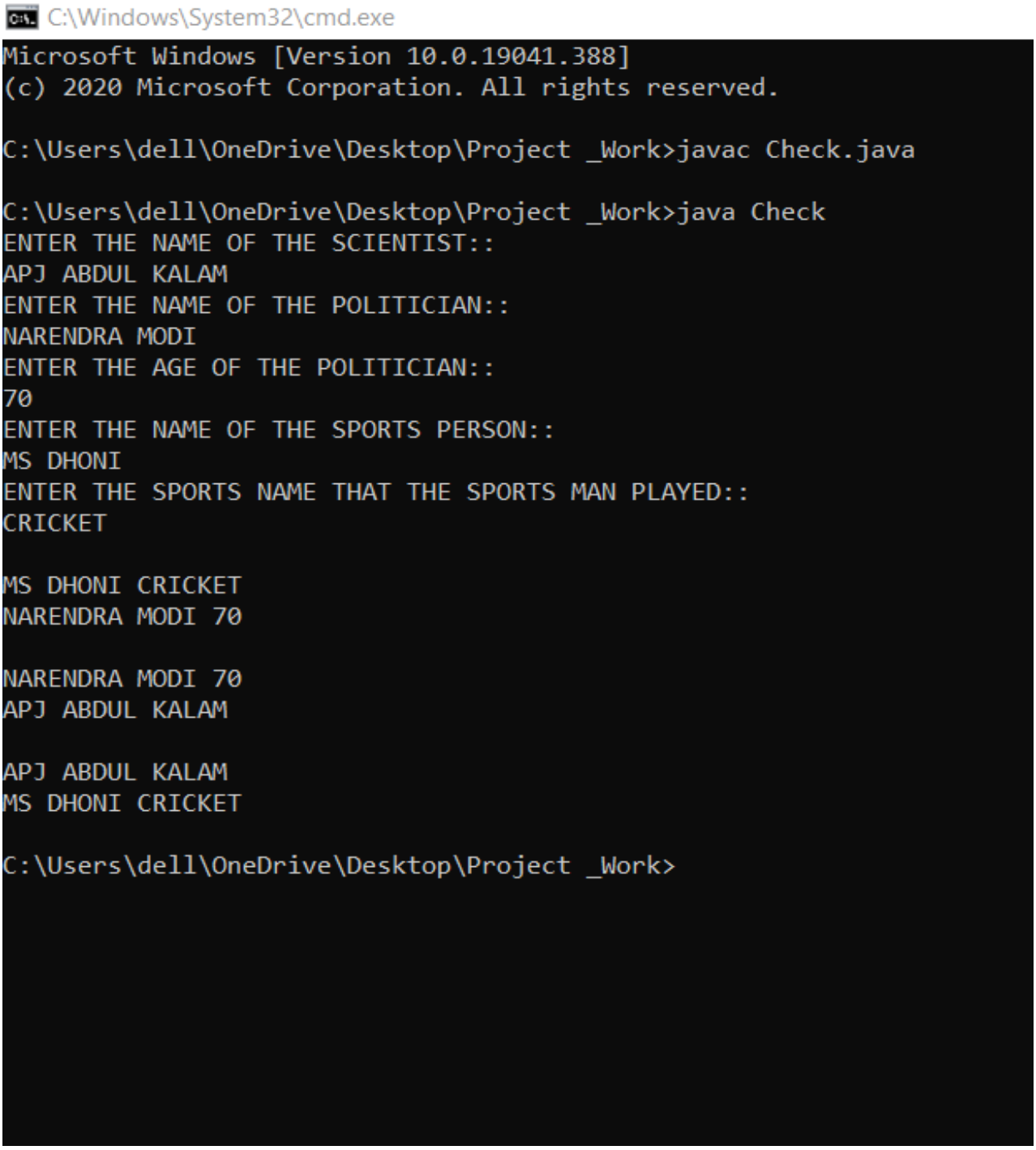
```
import java.util.Scanner;


class Multi<TYPE1,TYPE2>
{
TYPE1 a;
TYPE2 b;
Multi(TYPE1 x, TYPE2 y)
{
a=x;
b=y;
}
void show()
{
System.out.println();
System.out.println(a);
System.out.println(b);
}
}
class Check
{
public static void main(String arg[])
```

```
{
Scientist sc=new Scientist();
Politician po=new Politician();
SportsPerson sp=new SportsPerson();

Multi<SportsPerson,Politician> dsp=new
Multi<SportsPerson,Politician>(sp,po);
Multi<Politician,Scientist> dps=new Multi<Politician,Scientist>(po,sc);
Multi<Scientist,SportsPerson> dss=new
Multi<Scientist,SportsPerson>(sc,sp);

dsp.show();
dps.show();
dss.show();
}
}

class Scientist
{
String sc;
Scientist()
{
Scanner ss=new Scanner(System.in);
```

```
System.out.println("ENTER THE NAME OF THE SCIENTIST::");
sc=ss.nextLine();
}
public String toString()
{
return sc;
}
}
class Politician
{
String s;
int i;
Politician()
{
Scanner ss=new Scanner(System.in);
System.out.println("ENTER THE NAME OF THE POLITICIAN::");
s=ss.nextLine();
System.out.println("ENTER THE AGE OF THE POLITICIAN::");
i=ss.nextInt();
}
public String toString()
{
```

```
return s+" "+i;
}
}
class SportsPerson
{
String name;
String ass;
SportsPerson()
{
Scanner ss=new Scanner(System.in);
System.out.println("ENTER THE NAME OF THE SPORTS PERSON::");
name=ss.nextLine();
System.out.println("ENTER THE SPORTS NAME THAT THE SPORTS MAN PLAYED::");
ass=ss.nextLine();
}
public String toString()
{
return name+" "+ass;
}
}
```

OUTPUT -6


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\dell\OneDrive\Desktop\Project _Work>javac Check.java
C:\Users\dell\OneDrive\Desktop\Project _Work>java Check
ENTER THE NAME OF THE SCIENTIST::
APJ ABDUL KALAM
ENTER THE NAME OF THE POLITICIAN::
NARENDRA MODI
ENTER THE AGE OF THE POLITICIAN::
70
ENTER THE NAME OF THE SPORTS PERSON::
MS DHONI
ENTER THE SPORTS NAME THAT THE SPORTS MAN PLAYED::
CRICKET
MS DHONI CRICKET
NARENDRA MODI 70
NARENDRA MODI 70
APJ ABDUL KALAM
APJ ABDUL KALAM
MS DHONI CRICKET
C:\Users\dell\OneDrive\Desktop\Project _Work>

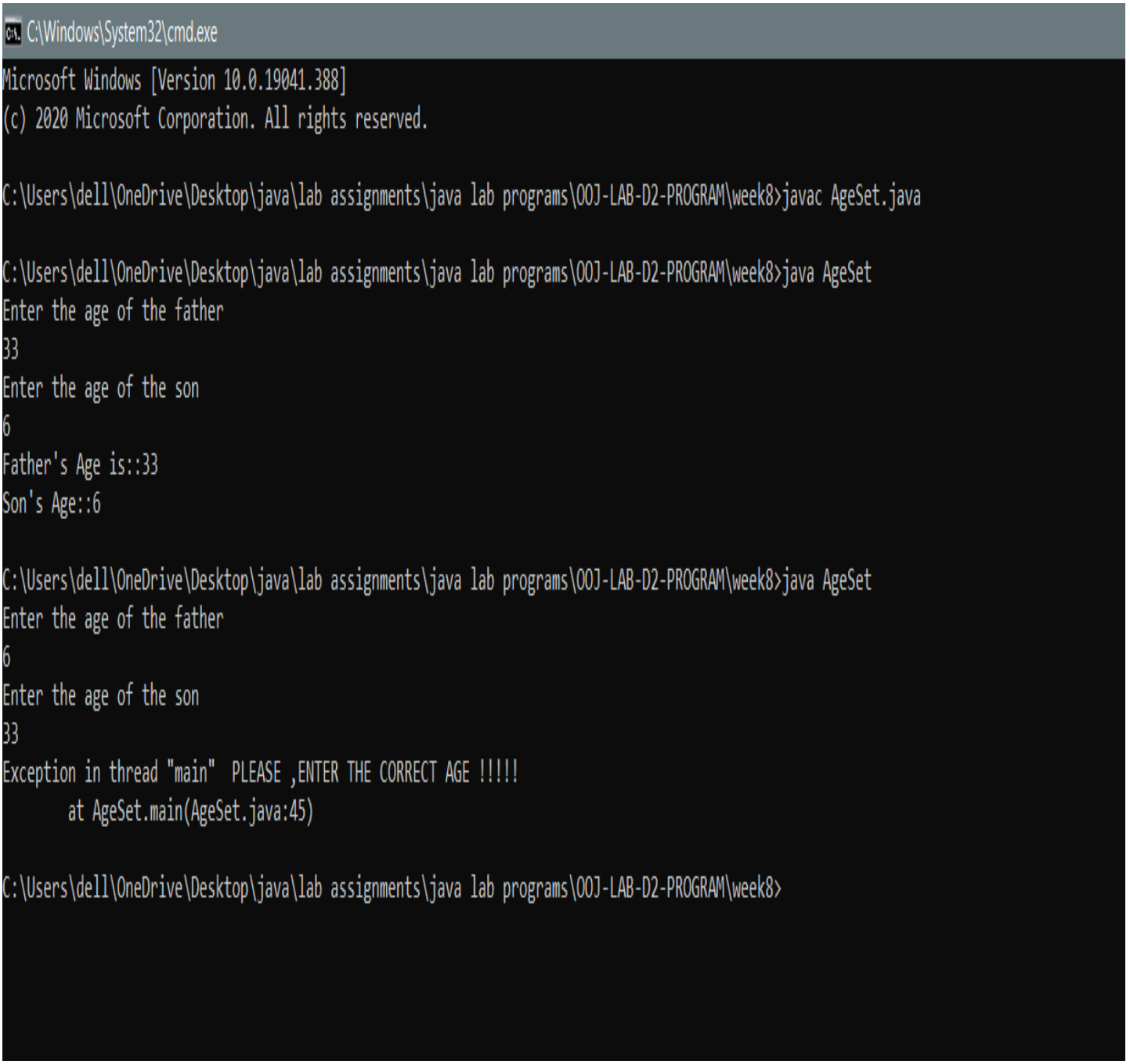
Program 7: -

```
import java.util.Scanner.*;
import java.util.*;
import java.lang.*;

class  WrongAge extends Exception
{
    public String toString()
{
  return" PLEASE ,ENTER THE CORRECT AGE !!!!!";
}
}

 class Father
{
   int age;
   Father(int age1)
   {
      age=age1;
    }
```

```
}

 class Son extends Father
{
     Son(int age1)
     {
       super(age1);
     }

}

public class AgeSet
{
    public static void main(String args[]) throws WrongAge
    {
       Scanner ss =new Scanner(System.in);
       int j,k;
        System.out.println("Enter the age of the father");
       j = ss.nextInt();
       System.out.println("Enter the age of the son");
        k= ss.nextInt();
       try{
```

```
        if(j<=0 ||j<=k)
       {
          throw new WrongAge();
       }
       else
        {
           Father f=new Father(j);
           Son s=new Son(k);
          System.out.println("Father's Age is::"+j);
          System.out.println("Son's Age::"+k);
        }
     }
      catch (ArithmeticException e)
    {
     System.out.println("Caught " + e);
     }
  }
}
```

OUTPUT 7: -


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\dell\OneDrive\Desktop\java\lab assignments\java lab programs\OOJ-LAB-D2-PROGRAM\week8>javac AgeSet.java
C:\Users\dell\OneDrive\Desktop\java\lab assignments\java lab programs\OOJ-LAB-D2-PROGRAM\week8>java AgeSet
Enter the age of the father
33
Enter the age of the son
6
Father's Age is::33
Son's Age::6
C:\Users\dell\OneDrive\Desktop\java\lab assignments\java lab programs\OOJ-LAB-D2-PROGRAM\week8>java AgeSet
Enter the age of the father
6
Enter the age of the son
33
Exception in thread "main" PLEASE ,ENTER THE CORRECT AGE !!!!!
at AgeSet.main(AgeSet.java:45)
C:\Users\dell\OneDrive\Desktop\java\lab assignments\java lab programs\OOJ-LAB-D2-PROGRAM\week8>

Program 8: -

Package CIE:

Internals:

```
package CIE;
import java.util.Scanner;
public class Internals extends CIE.Student
{
public int ciem[]=new int[5];
Scanner xx =new Scanner (System.in);
public void accept()
{
for(int i=0;i<5;i++)
```

```
{
System.out.println("Enter the cie marks of subject"+(i+1)+" out of 50");
{
ciem[i]=xx.nextInt();
}
}
}
}
```

Student:

```
package CIE;
import java.util.Scanner;
public class Student
{
String name,usn;
int sem;
Scanner xx=new Scanner(System.in);
public void accept()
{
```

```
System.out.println("Enter name:");
name=xx.nextLine();
System.out.println("Enter usn:");
usn=xx.next();
System.out.println("Enter sem:");
sem=xx.nextInt();
}
public void display()
{
System.out.println("Name :"+name);
System.out.println("Usn :"+usn);
System.out.println("Sem :"+sem);
}
}
```

Package SEE:

Externals:

```
package SEE;
import CIE.*;
import java.util.Scanner;
public class Externals extends CIE.Student
{
public int seem[]=new int[5];
Scanner xx =new Scanner (System.in);
public void accept()
{
for(int i=0;i<5;i++)
{
System.out.println("Enter the see marks of subject"+(i+1)+" out of
100");
{
seem[i]=xx.nextInt();
}
}
```

```
}
}
```
Main Program:
TotalMarks:
```
package SEE;
import CIE.*;
import java.util.Scanner;
public class Externals extends CIE.Student
{
public int seem[]=new int[5];
Scanner xx =new Scanner (System.in);
public void accept()
{
for(int i=0;i<5;i++)
{
System.out.println("Enter the see marks of subject"+(i+1)+" out of
100");
```

```
{
seem[i]=xx.nextInt();
}
}
}
}
```

OUTPUT 8: -

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\dell\OneDrive\Desktop\java\lab assignments\packages>javac CIE/Student.java

C:\Users\dell\OneDrive\Desktop\java\lab assignments\packages>javac CIE/Internals.java

C:\Users\dell\OneDrive\Desktop\java\lab assignments\packages>javac SEE/Externals.java

C:\Users\dell\OneDrive\Desktop\java\lab assignments\packages>TotalMarks
'TotalMarks' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\dell\OneDrive\Desktop\java\lab assignments\packages>javac TotalMarks.java

C:\Users\dell\OneDrive\Desktop\java\lab assignments\packages>java TotalMarks
Enter the number of students
4
ENTER STUDENT1 DETAILS
Enter name:
ishan
Enter usn:
1bm19cs555
Enter sem:
3
Enter the cie marks of subject1 out of 50
49
Enter the cie marks of subject2 out of 50
48
Enter the cie marks of subject3 out of 50
47
Enter the cie marks of subject4 out of 50
49
Enter the cie marks of subject5 out of 50
50
Enter the see marks of subject1 out of 100
78
Enter the see marks of subject2 out of 100
99
Enter the see marks of subject3 out of 100
80
Enter the see marks of subject4 out of 100
85
Enter the see marks of subject5 out of 100
100
```

```
ENTER STUDENT2 DETAILS
Enter name:
vishal
Enter usn:
1bm19cs666
Enter sem:
3
Enter the cie marks of subject1 out of 50
50
Enter the cie marks of subject2 out of 50
48
Enter the cie marks of subject3 out of 50
46
Enter the cie marks of subject4 out of 50
45
Enter the cie marks of subject5 out of 50
38
Enter the see marks of subject1 out of 100
99
Enter the see marks of subject2 out of 100
98
Enter the see marks of subject3 out of 100
85
Enter the see marks of subject4 out of 100
90
Enter the see marks of subject5 out of 100
87
```

```
ENTER STUDENT3 DETAILS
Enter name:
Kishan
Enter usn:
1bm19cs199
Enter sem:
3
Enter the cie marks of subject1 out of 50
50
Enter the cie marks of subject2 out of 50
48
Enter the cie marks of subject3 out of 50
47
Enter the cie marks of subject4 out of 50
39
Enter the cie marks of subject5 out of 50
38
Enter the see marks of subject1 out of 100
100
Enter the see marks of subject2 out of 100
99
Enter the see marks of subject3 out of 100
99
Enter the see marks of subject4 out of 100
90
Enter the see marks of subject5 out of 100
96
```

```
ENTER STUDENT4 DETAILS
Enter name:
abhishek
Enter usn:
1bm19cs777
Enter sem:
3
Enter the cie marks of subject1 out of 50
48
Enter the cie marks of subject2 out of 50
47
Enter the cie marks of subject3 out of 50
46
Enter the cie marks of subject4 out of 50
44
Enter the cie marks of subject5 out of 50
43
Enter the see marks of subject1 out of 100
90
Enter the see marks of subject2 out of 100
86
Enter the see marks of subject3 out of 100
85
Enter the see marks of subject4 out of 100
80
Enter the see marks of subject5 out of 100
66
```

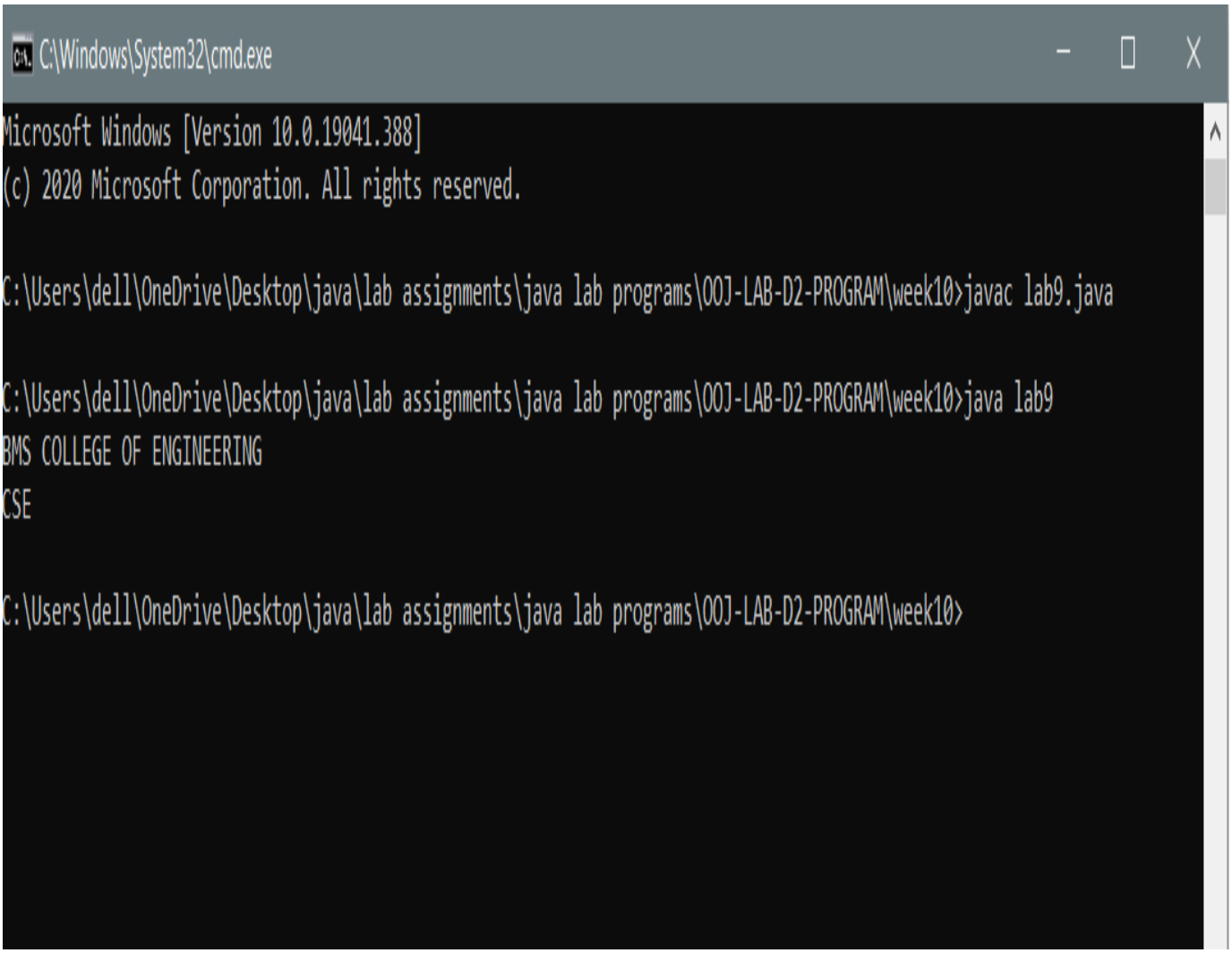
```
DETAILS OF STUDENT 1
Name :ishan
Usn :1bm19cs555
Sem :3
Total marks in subject1 is 88
Total marks in subject2 is 97
Total marks in subject3 is 87
Total marks in subject4 is 91
Total marks in subject5 is 100
DETAILS OF STUDENT 2
Name :vishal
Usn :1bm19cs666
Sem :3
Total marks in subject1 is 99
Total marks in subject2 is 97
Total marks in subject3 is 88
Total marks in subject4 is 90
Total marks in subject5 is 81
DETAILS OF STUDENT 3
Name :Kishan
Usn :1bm19cs199
Sem :3
Total marks in subject1 is 100
Total marks in subject2 is 97
Total marks in subject3 is 96
Total marks in subject4 is 84
Total marks in subject5 is 86
DETAILS OF STUDENT 4
Name :abhishek
Usn :1bm19cs777
Sem :3
Total marks in subject1 is 93
Total marks in subject2 is 90
Total marks in subject3 is 88
Total marks in subject4 is 84
Total marks in subject5 is 76

C:\Users\dell\OneDrive\Desktop\java\lab assignments\packages>
```

Program 9: -

```
public class lab9{
 public static void main(String args[]){
  Runnable r1=new Runnable(){
    public void run(){
      System.out.println("BMS COLLEGE OF ENGINEERING");
    }
  };

  Runnable r2=new Runnable(){
    public void run(){
      System.out.println("CSE");
    }
  };

  Thread t1=new Thread(r1);
  Thread t2=new Thread(r2);

    try {
          Thread.sleep(10000);
           t1.start();
          Thread.sleep(2000);
```

```
            t2.start();



}
catch(InterruptedException e){
System.out.println(e);
}
//printing without the sleep method
//start
 /* t1.start();
  t2.start();  */
//end

 }
}
```

OUTPUT 9: -


C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19041.388]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\dell\OneDrive\Desktop\java\lab assignments\java lab programs\OOJ-LAB-D2-PROGRAM\week10>javac lab9.java
C:\Users\dell\OneDrive\Desktop\java\lab assignments\java lab programs\OOJ-LAB-D2-PROGRAM\week10>java lab9
BMS COLLEGE OF ENGINEERING
CSE
C:\Users\dell\OneDrive\Desktop\java\lab assignments\java lab programs\OOJ-LAB-D2-PROGRAM\week10>

Program 10: -

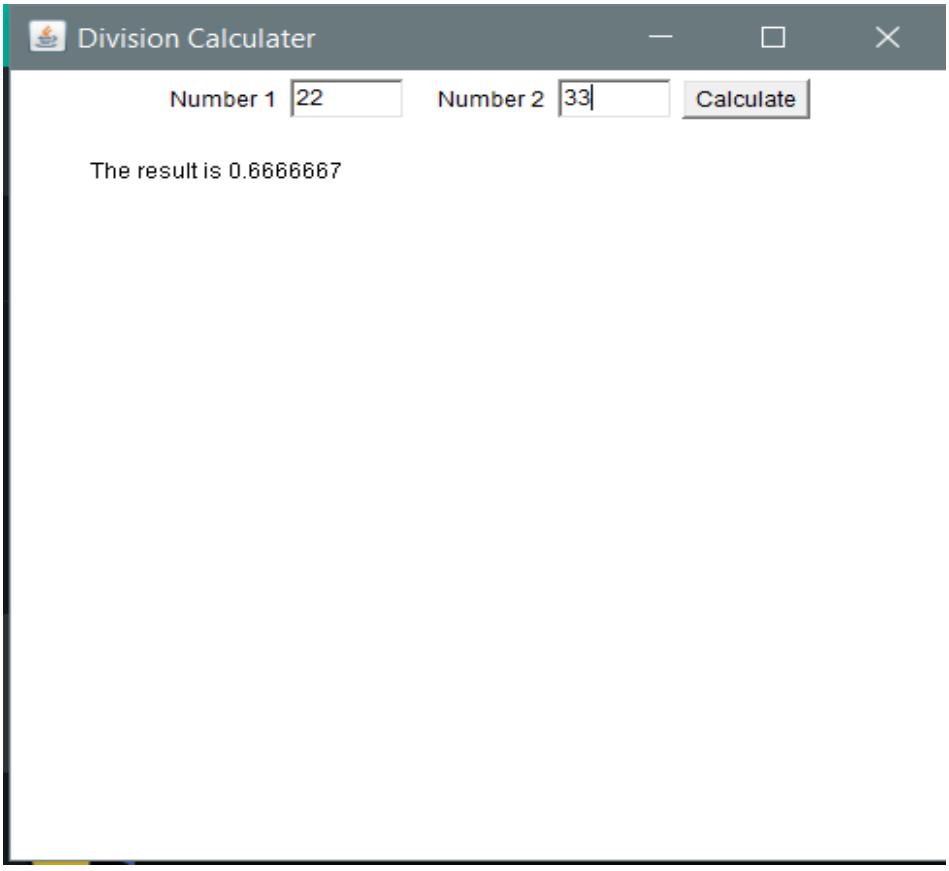
```
import java.awt.*;
import java.awt.event.*;
class DivisionInteger extends Frame implements ActionListener{
   TextField num1TextField;
   TextField num2TextField;
   Button calculate;
   int a,b;
   float result;
   String msg="Enter the numbers";
   public DivisionInteger(){

      setLayout(new FlowLayout());

      calculate=new Button("Calculate");
      num1TextField=new TextField(5);
      Label num1Label=new Label("Number 1",Label.RIGHT);
      num2TextField=new TextField(5);
      Label num2Label=new Label("Number 2",Label.RIGHT);

      add(num1Label);
```

```
    add(num1TextField);
    add(num2Label);
    add(num2TextField);
    add(calculate);
    num1TextField.addActionListener(this);
    num2TextField.addActionListener(this);
    calculate.addActionListener(this);

    addWindowListener(new MyWindowAdapter());
}
public void actionPerformed(ActionEvent ae){
    try{
        result=divideNumbers();
        msg=("The result is "+result);
        repaint();
    }catch(NumberFormatException e){
        msg="Number is not Integer."+e;
        repaint();
    }catch(ArithmeticException e){
        msg="Divide By zero not Allowed."+e;
        repaint();
    }
```

```
    }
    public float divideNumbers(){
        a=Integer.parseInt(num1TextField.getText());
        b=Integer.parseInt(num2TextField.getText());
        if(b==0){
            throw new ArithmeticException();
        }
        return (float)a/b;
    }
    public void paint(Graphics g){
        g.drawString(msg,50,100);
    }
    public static void main(String args[]){
        DivisionInteger div=new DivisionInteger();
        div.setSize(new Dimension(500,500));
        div.setTitle("Division Calculater");
        div.setVisible(true);
    }
}
class MyWindowAdapter extends WindowAdapter{
    public void windowClosing(WindowEvent event){
        System.exit(0);
```

```
    }
}
```

OUTPUT 10: -


Division Calculater
Number 1
22
Number 2
33
Calculate
The result is 0.6666667