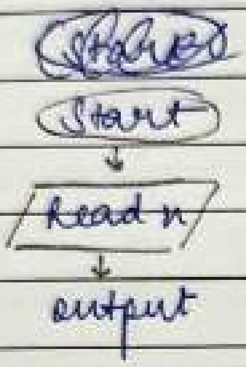
① Java program to point an integer

Flowchart.



Algaritem.

```
Step 1 → Start
     2 → read n
     3 → output n
     4 → stop.
```

```
import java. util. scanner;

public class helloworld ;
    public static void main (String arg[]);
      scanner read = new scanner (system. in);
      system. out. println ("Enter a no");
      int num = read. next Int ()
      System. out. print ln ("You entered" + num);
    }
}
```

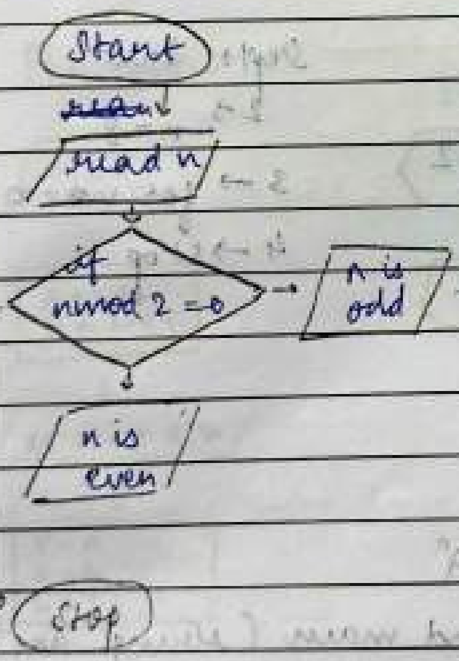
Output:
```
Enter a number: 6
6
You entered 6.
```

(2) Java program to check whether a num is even or odd.

Algorithm:

```
Step 1: start
     2: read n
     3: if (nmod 2 = 0)
            output n is odd
        else
         output n is even
     4: stop
```

Flowchart:

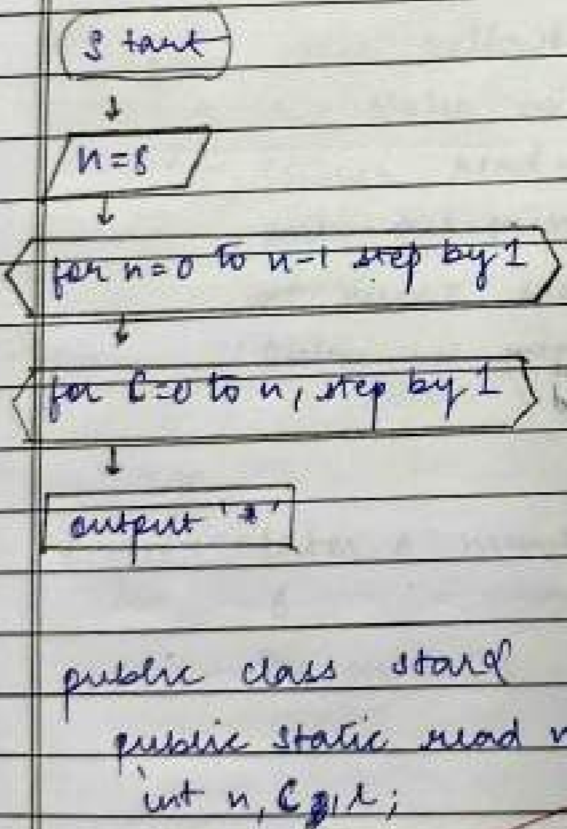


```
import java.util.scanner;
   public class JE;
    public static void main (string arg[]);
     int n;
     System.out.println ("enter no.");
     scanner in = ~~sg~~ new scanner (system.in)
     n= in. next Int ();
```

```
        if (num%2==0)
        system.out.println (n+"even");
        else
        system.out.println (n+" odd");
      }
    }
```

output: enter a number
        8
        8 is even.

3> Java program to print right star pattern



Algorithm

Step1→ Start
2→ n=8
3→ for r=0 to n-1
4→ Stop.

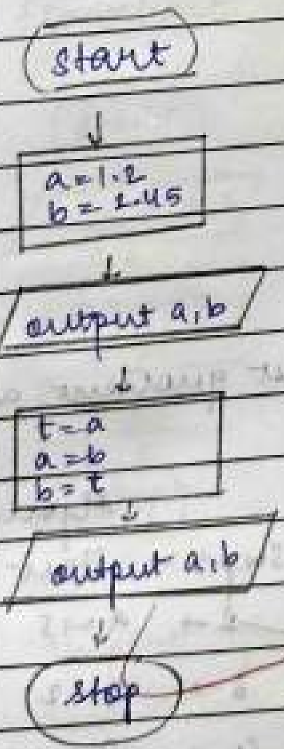
```
public class star{
  public static void main (string arg[]);
   int n, c, r;
   n=8;
   for (r=0; r<n; r++);
    {
      for (c=0; c<=r; c++);
      {
        System.out.println("*");
      }
    }
}
```

output:

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

4> Swap 2 nos. using temporary variables.

Flowchart



Algorithm

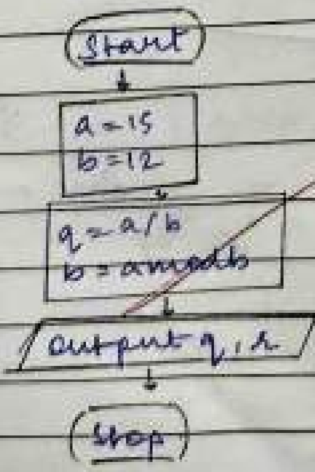
```
step 1 → start
     2 → a=1.2, b=2.45
     3 → output a, b
     4 → t=a
     5 → a=b
     6 → b=t
     7 → output a, b
     8 → stop.
```

```
public class swap{
  public static void main (string args[]){
    float a=1.2f, b=2.45f;
    System.out.println ("Before swap")
    System.out.println ("num")
    float t=a;
     a=b;
     b=t;
    System.out.println ("After swap")
    System.out.println ("1st =" +a);
    System.out.println ("2nd =" +b);
  }
}
```

```
output: Before swap
        First number = 1.20
        Second  "     = 2.45
        After swap
        1st =  2.45
        2nd =  1.20
```

Q.) Java program to find first quotient and remainder.

flowchart



Algorithm

```
Step 1 → Start
2 → a=15
3 → b=2
4 → q=a/b
5 → r= amod b
6 → output q,r
7 → Stop
```

PAGE NO :
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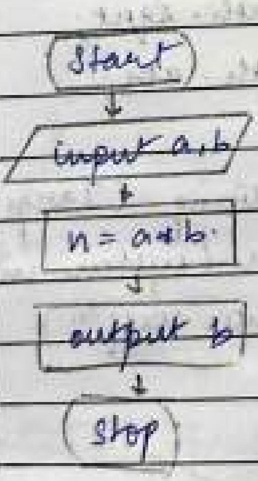
```
public class qn {
    public static void main (string args[]) {
    int a=15, b=2 ,q,r;
    q= a/b;
    r= a%b;
    System.out.println ("Quotient" +q);
    System.out.println ("Remainder" +r);
  }
}
```

output:

```
  Quotient = 7
 remainder = 1
```

d> Java program to multiply numbers.

Flowchart .



Algorithm

```
Step 1: start
     2: input a,b
     3: n = a*b
     4: output n
     5: stop
```

```
import java.util.scanner;
   public class math {
      public static void main (string args[]){
          scanner s= new scanner (system.in);
          System.out.println ("Enter 1st no.");
          int a= s.nextInt();
          int b= s.nextInt();
```

```
        s.close ();
        int p= a*b;
        system.out.println ("output ="+p);
    }
}
```

output:

```
        Enter first num
              5
        Enter second num
              5
          output
             25
```

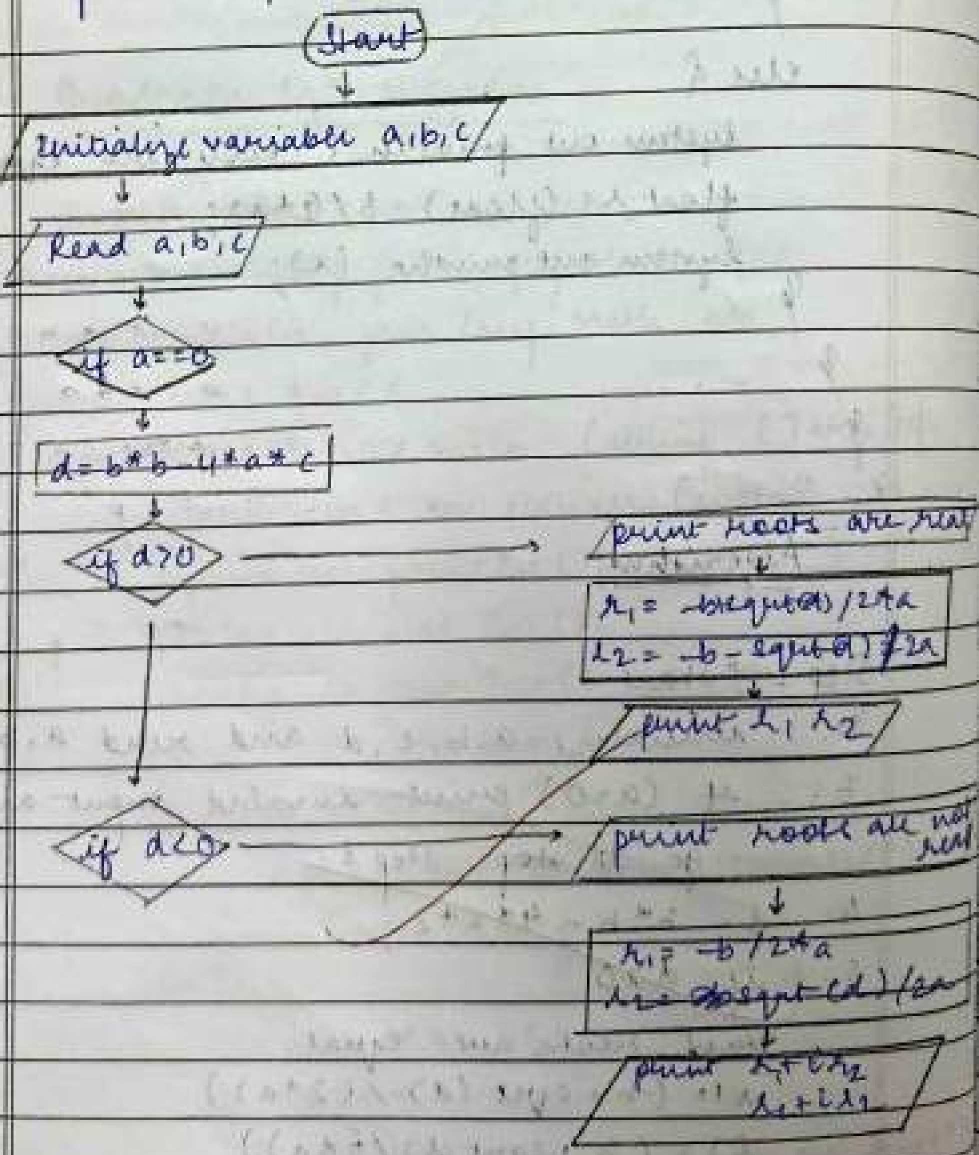
Quadratic Eq^n program

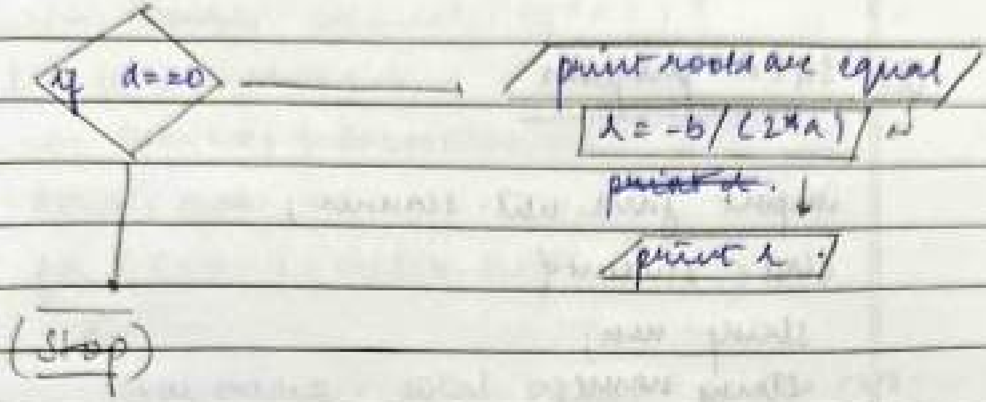
```
import java.util.scanner;
import static java.lang.Math.sqrt;
import static java.lang.Math.abs;
public class quad {
    public static void main (string []args){
        Scanner in = new scanner (system.in);
        System.out.println ("enter coeff");
        int a= in.next Int();
        int b= in.next Int();
        int c= in.next Int();
        if (a==0){
            System.out.println ("Invalid");
        }
        else {
            int d= b*b-4*a*c;
            if (d>0){
            System.out.println ("Roots are real");
    float r1 = (float)(-b + sqrt(d)/(2*a));
    float r2 = (float)(-b - sqrt(d)/(2*a));
    System.out.println(r1);
    System.out.println(r2);
  }
  else if (d<0){
    System.out.println("Roots are imaginary,
                          no solution");
   float r1 = (float)(-b/(2*a));
   float r2 = (float) sqrt (abs(d)/(2*a));
   System.out.println(r1+" + i "+r2);
   System.out.println(r1+" - i"+r2);
  }
  else {
    System.out.println("Roots are equal");
    float r = (float) -b/(2*a);
    System.out.println (r);
  }
 }
}
}
```

Algorithm:

```
Step 1: Start
2:  initialize a,b,c,d and read a,b,c,d.
3:  if (a=0) print invalid input and
      go to ~~stop~~ step 8.
4:  d = b*b - 4*a*c;
5:  if d>0
    print roots are equal.
    r1 = (-b + sqrt(d)/(2*a))
    r2 = (-b + sqrt(d)/(2*a))
    print r1 and r2 and go to step 8.
```

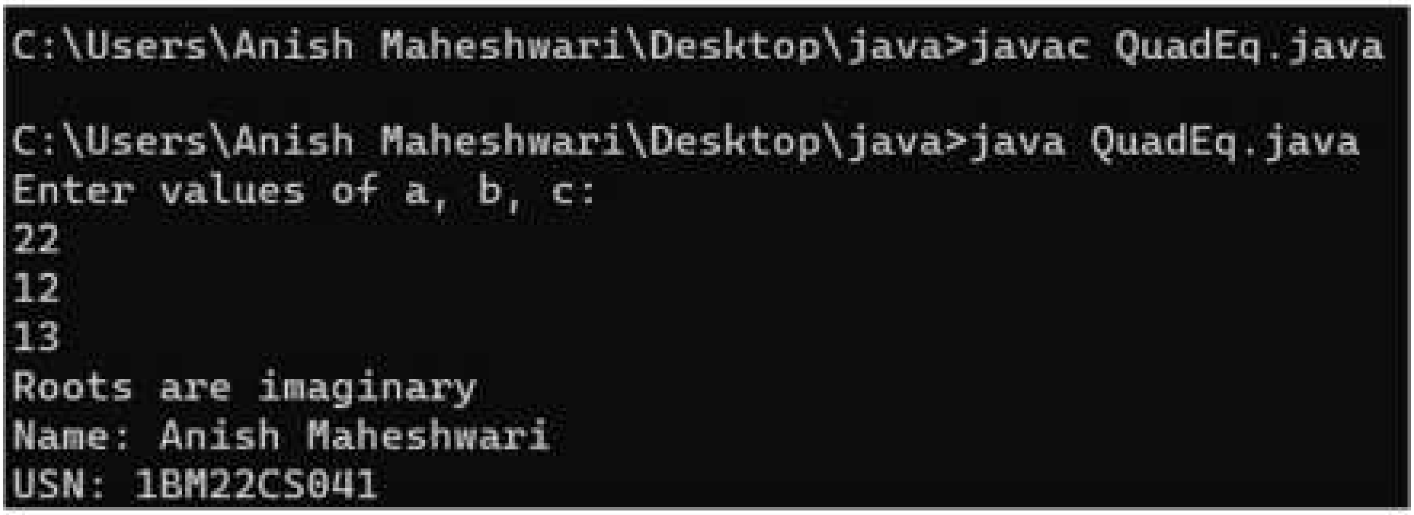
```
Step 6:  if  d<0
        print roots are imaginary
        r1 = -b/(2*a)
        r2 = sqrt ( abs (d) /(2*a))
        print (r1+ir2)
        print (r1-ir2)

Step 7:  if  d=0
        print roots are real and equal
            r = -b / (2*a)
            print r.
step 8:  stop.
```



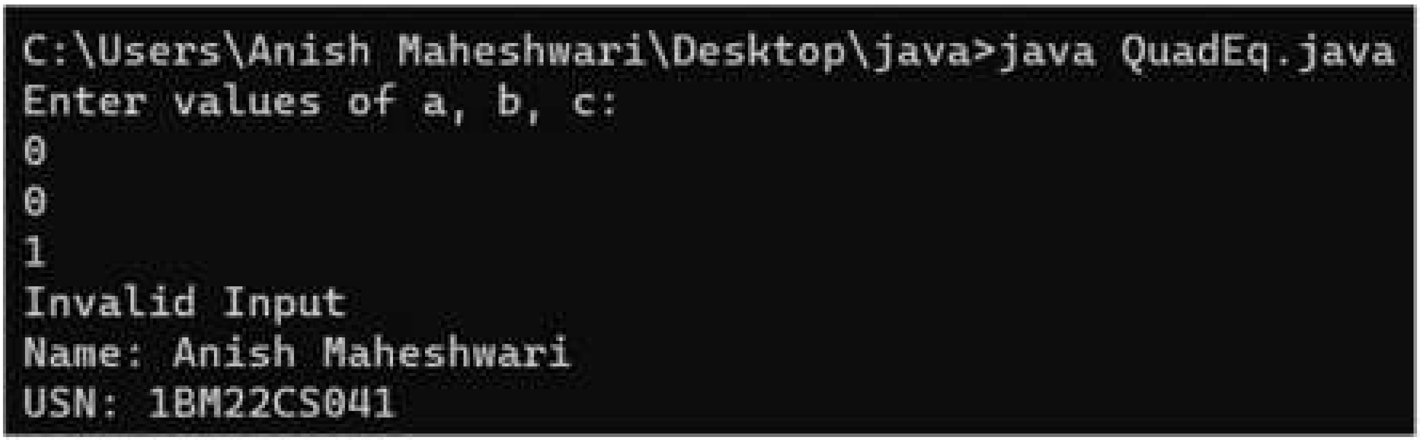


output:

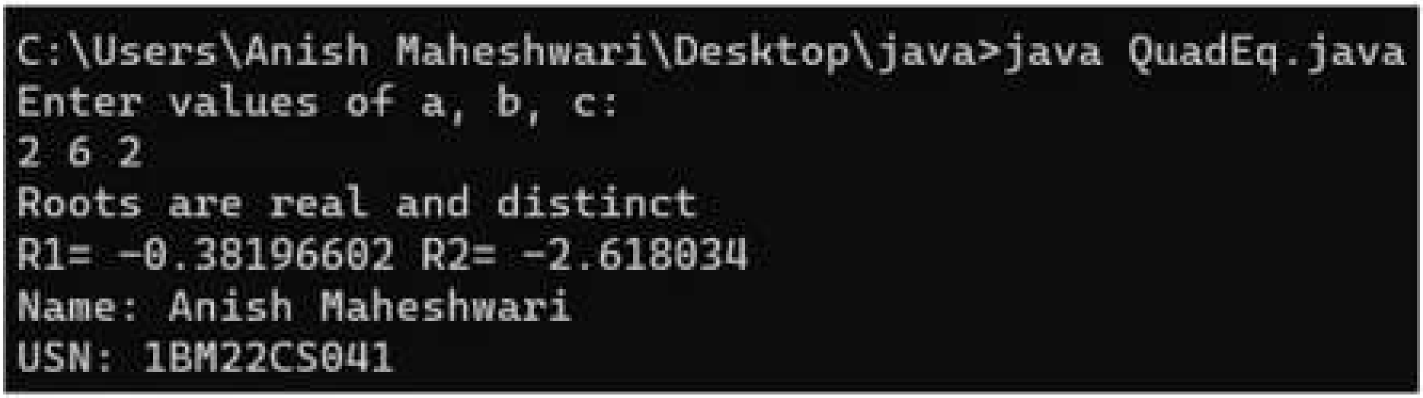
```
Enter num 1
 12
Enter num 2
 24
Enter num 3
 13
Given equation does not have any real solution
```



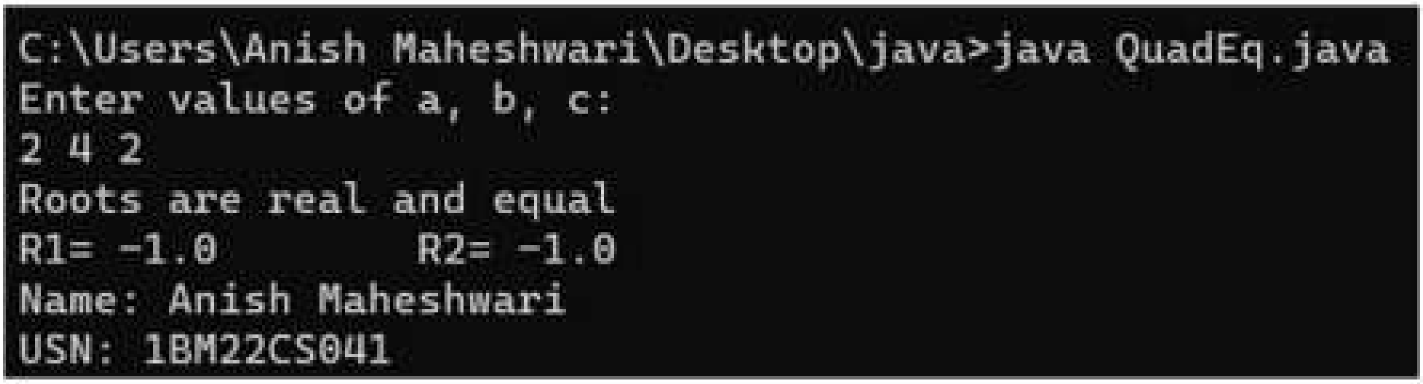
```
C:\Users\Anish Maheshwari\Desktop\java>javac QuadEq.java

C:\Users\Anish Maheshwari\Desktop\java>java QuadEq.java
Enter values of a, b, c:
22
12
13
Roots are imaginary
Name: Anish Maheshwari
USN: 1BM22CS041
```



```
C:\Users\Anish Maheshwari\Desktop\java>java QuadEq.java
Enter values of a, b, c:
0
0
1
Invalid Input
Name: Anish Maheshwari
USN: 1BM22CS041
```



```
C:\Users\Anish Maheshwari\Desktop\java>java QuadEq.java
Enter values of a, b, c:
2 6 2
Roots are real and distinct
R1= -0.38196602 R2= -2.618034
Name: Anish Maheshwari
USN: 1BM22CS041
```



```
C:\Users\Anish Maheshwari\Desktop\java>java QuadEq.java
Enter values of a, b, c:
2 4 2
Roots are real and equal
R1= -1.0        R2= -1.0
Name: Anish Maheshwari
USN: 1BM22CS041
```

Q) SGPA program

```
import java. util. scanner;
class student{
 string usn;
 String name;
int [] credits = new int [8];
int [] mark = new int [8];

public static void accept()
{
 Scanner sc= new scanner (system.in);
 System. out. println ("enter usn");
 usn = sc. nextLine()
 System. out. println ("enter details");
 for ( i=0 ; i< credits length; i++)
 {
   System. out. println ("enter credits for subject"
                                              +(i+1)+"
   credits [i] = sc nextInt();
  System. out. println ("enter mark for subject"
                                         +(i+1)+":");
   marks [i] = sc. nextInt();
 }
}.
```

? o/p

PAGE NO :
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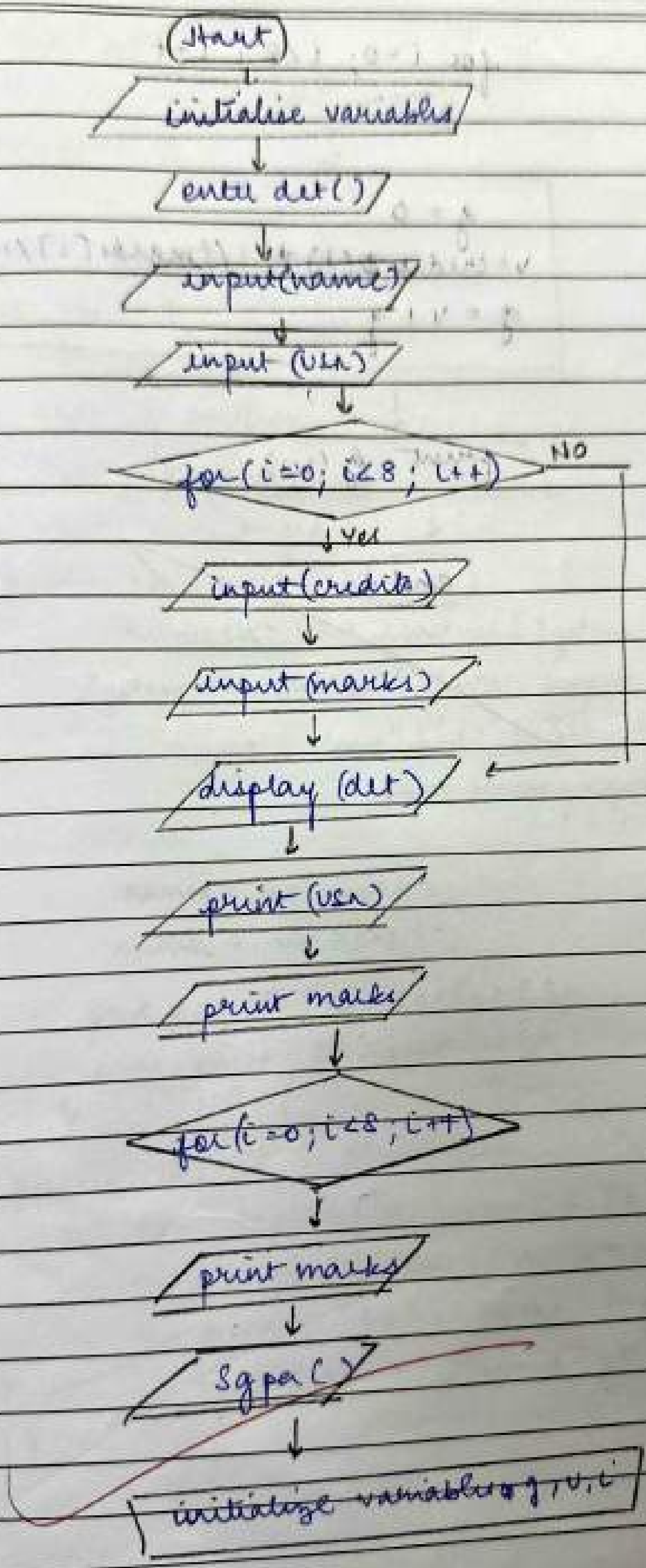
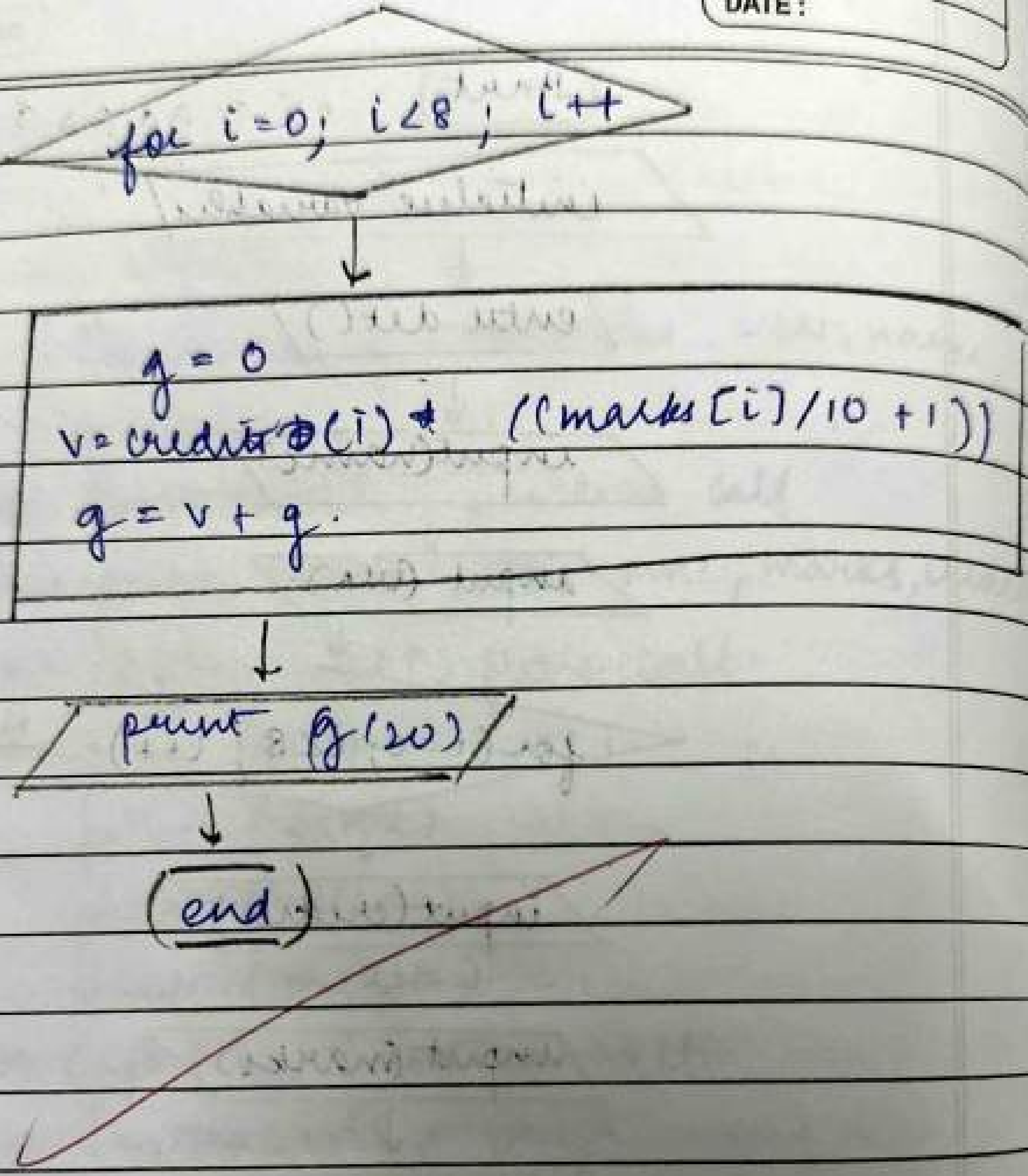
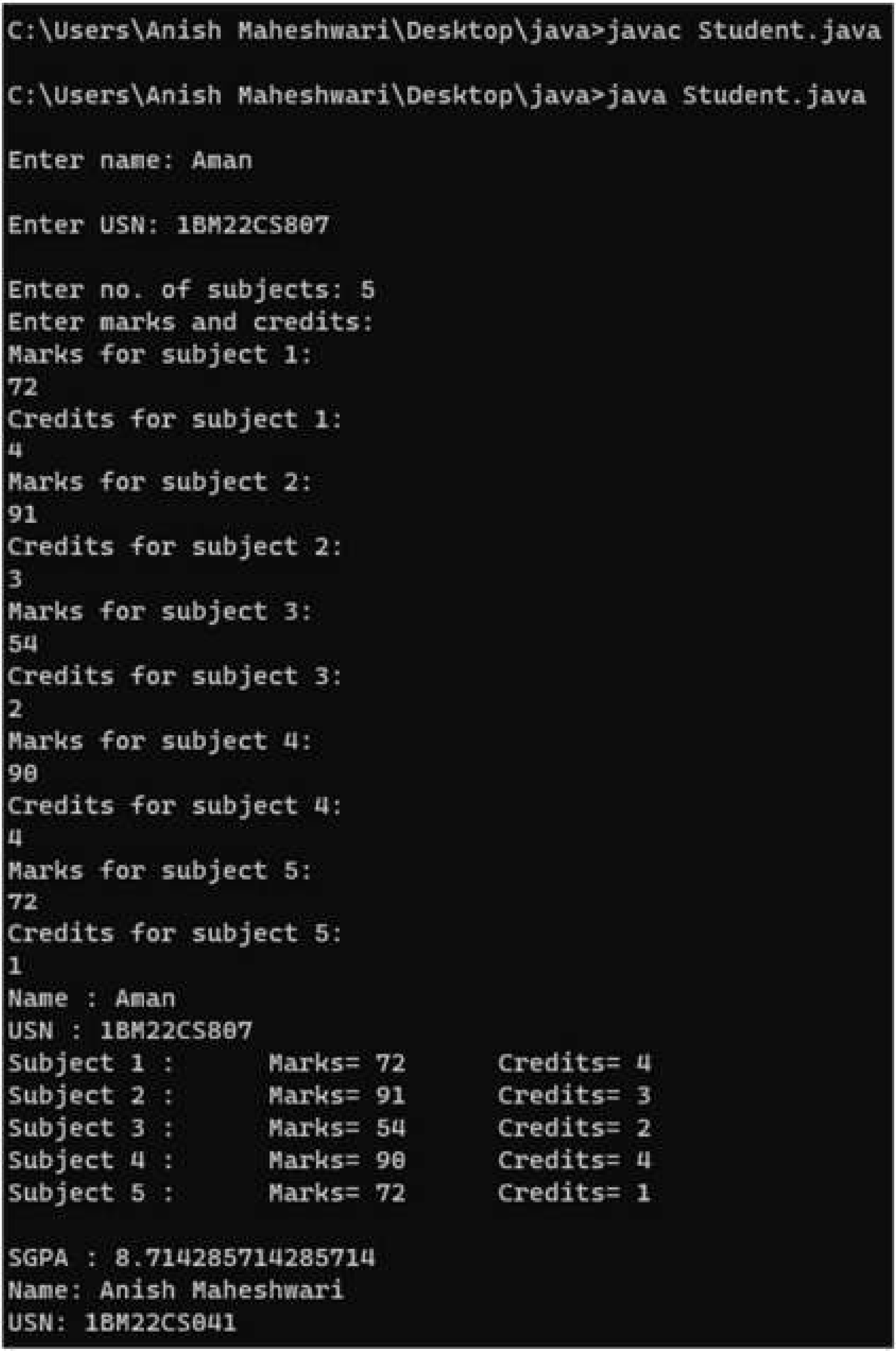
```
public double calculate SGPA () {
 Int total credits = 0;
  int Sum = 0, gradepoint;
  double ans;
  for (i=0; i< credits.length; i++)
   {
    total credits = total credits + credits [i];
    gradepoint = ((marks [i] /10) + 1);
    if (gradepoint ==11)
          gradepoint =10;
    else if (gradepoint <=4)
              gradepoint =0;

   sum = sum + gradepoint * credits [i];
  }
  ans = (double) sum /(double) totalcredits;
  return ans;
 }
public class printSGPA (){
   public static void main (String [] args)
    {
      student stu = new student ();
          stu.accept ();
      System.out.println ("Details");
      System.out.println ("USN" + stud.usn);
      System.out.println ("Name" + stu.name);
      double SGPA = stu.calculate SGPA ();
      ~~double~~ S
      System.out.println ("SGPA" + SGPA);
    }
}
```

Algorithm :

```
Step 1 → Start
     2 → Initialising variables usn, name,
         marks
     3 → Enterdet(): function call
     4 → print input usn, name, marks, credits
     5 → display det() func call
     6 → print (usn)
         print (name)
         print (marks)
         print (credits)
     7 → sgpa (): function call
     8 → initialise g, v, j
     9 → for ( i=0; i< 8; i++)
             g=0
             v= credits [i] + ((marks [i]/10)+1)
             g= v+g
    10 → print (g/20)
    11 → end.
```


Start
initialise variables
enter det()
input(name)
input (usn)
for(i=0; i<8; i++)
NO
Yes
input(credits)
input(marks)
display (det)
print (usn)
print marks
for(i=0;i<8;i++)
print marks
Sgpa( )
initialize variables g,v,i


for i=0; i<8; i++
g = 0
v=credit(i) * ((marks[i]/10 +1))
g = v + g.
print : g'(20)
end.



```
C:\Users\Anish Maheshwari\Desktop\java>javac Student.java

C:\Users\Anish Maheshwari\Desktop\java>java Student.java

Enter name: Aman

Enter USN: 1BM22CS807

Enter no. of subjects: 5
Enter marks and credits:
Marks for subject 1:
72
Credits for subject 1:
4
Marks for subject 2:
91
Credits for subject 2:
3
Marks for subject 3:
54
Credits for subject 3:
2
Marks for subject 4:
90
Credits for subject 4:
4
Marks for subject 5:
72
Credits for subject 5:
1
Name : Aman
USN : 1BM22CS807
Subject 1 :      Marks= 72      Credits= 4
Subject 2 :      Marks= 91      Credits= 3
Subject 3 :      Marks= 54      Credits= 2
Subject 4 :      Marks= 90      Credits= 4
Subject 5 :      Marks= 72      Credits= 1

SGPA : 8.714285714285714
Name: Anish Maheshwari
USN: 1BM22CS041
```

12/01

Lab

Q> Program-3.

```
Import java.util.scanner;
class books {
      string name;
      string author;
      int price;
      int num_pages;
   public void set (int i){
         scanner in= new scanner(System.in);
        System.out.println ("Enter details of books "+(i+1)+"in name, author,
                                         price,numpages order");

           name= in.next();
          author= in.next();
        price = in.nextInt();
        num_pages= in.nextInt();
     }
   public string toString(){
      return "Details of books"+ (i+1)+ "\n"+
             "name"+ name+"\n"+ "Author"+
             author+"\n"+ "price"+ price+ "\n"
             +"no.pages"+ num_pages;
     }
}
```

```
Class D {
public static void main (string [] args){
  int n,i;
  scanner in = new Scanner (System.in);
  System.out.println ("Enter no. of boo
  n = in.nextInt();
  Books b[] = new Books[n];
  for ( i= 0 ; i<n ; i++);
       b[i]= new Books();
       b[i].set(i);
  }
  System.out.println();
  for (int i = 0 ; i<n ; i++){
     System.out.println (b[i].toString ());
  }
 }
}
```

Q.> Program 4

```
import java.util.scanner;
abstract class shape (){
int x, y;
abstract void area();
public static void main (String args [])}
{
  shape obj1 = new circle();
  obj1.area();
  shape obj2 = new Rectangle();
   obj2.area();
   shape obj3 = new Triangle();
  obj3.area();
  }
}
Class Circle extends shape{
  circle(){
  Scanner sc = new Scanner(system.in);
  System.out.println ("enter the radius of the circle");
   x = sc.next Int();
   y = x; }
}
  void area()
  {
   system.out.println ("area of circle is" + 3.14*x*y);
  }
}
```

```
Class rectangle extends Shape(){
Rectangle(){
Scanner sc= new Scanner (system in);
System. out. println ("enter the length and bre
                    of rectangle");
x= sc. next Int();
y= sc. nextInt();
void area(){
   system. out. println ("area of rect is"+ x*y
}
}
Class Triangle extends Shape(){
Triangle(){
Scanner sc= new Scanner (System.in);
System. out. println ("enter the b and h of the tri");
x=sc.nextInt();
y=sc.nextInt();
void area (){
System.out println("  area is"+0.5*x*y);
}
}.
```

Output :

12/01

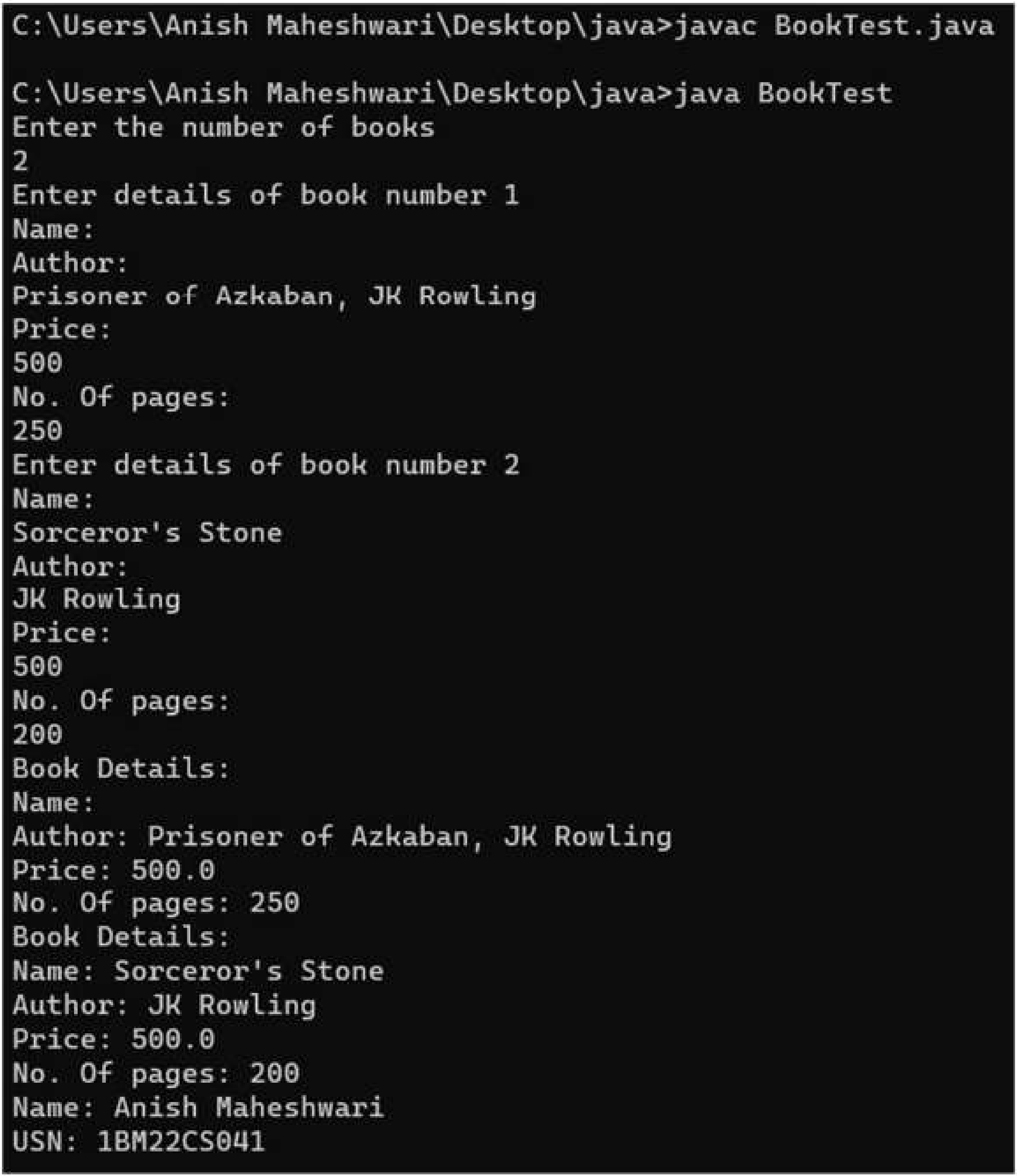
Program 3

```
Enter the number of books : 1

Enter details for Book 1 :
Name : abc123
Author : xyz123
Price : 500
Num pages : 200

~~Book~~ details of books 1
Name : abc123
Author : xyz123
Price : 500
No. of pages : 200
```

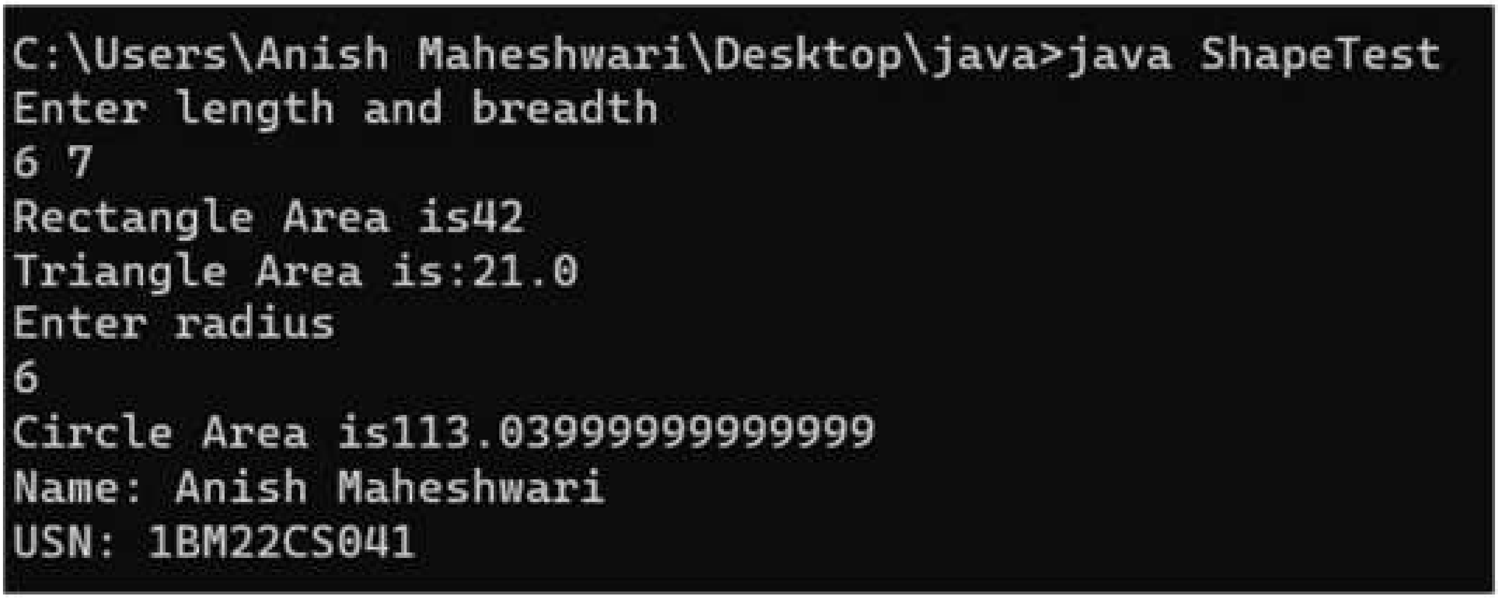
Program 4

```
Enter the radius of the circle : 5
area of the circle is 78.5

Enter the length and breadth of Rectangle : 5 6
area of the rectangle : 30

Enter the base and height of the triangle : 6 7
area is : ~~42~~ 21
```

12/1/24



```
C:\Users\Anish Maheshwari\Desktop\java>javac BookTest.java

C:\Users\Anish Maheshwari\Desktop\java>java BookTest
Enter the number of books
2
Enter details of book number 1
Name:
Author:
Prisoner of Azkaban, JK Rowling
Price:
500
No. Of pages:
250
Enter details of book number 2
Name:
Sorceror's Stone
Author:
JK Rowling
Price:
500
No. Of pages:
200
Book Details:
Name:
Author: Prisoner of Azkaban, JK Rowling
Price: 500.0
No. Of pages: 250
Book Details:
Name: Sorceror's Stone
Author: JK Rowling
Price: 500.0
No. Of pages: 200
Name: Anish Maheshwari
USN: 1BM22CS041
```



```
C:\Users\Anish Maheshwari\Desktop\java>java ShapeTest
Enter length and breadth
6 7
Rectangle Area is42
Triangle Area is:21.0
Enter radius
6
Circle Area is113.03999999999999
Name: Anish Maheshwari
USN: 1BM22CS041
```

Program 3

Algorithm:

```
Step 1:> Start
  2:> Initialising variables, name, author,
      price, num_pages.
  3> Enter no. of books.
  4:> Enter name, ~~g~~author, price, num_p
  5:> for ( i=0 ; i<n ; i++)
          b[i] = new books ()
          b[i] = set();
  6> display books.
     for( i=0; i<n; i++)
        print book details.
  7> Stop
```

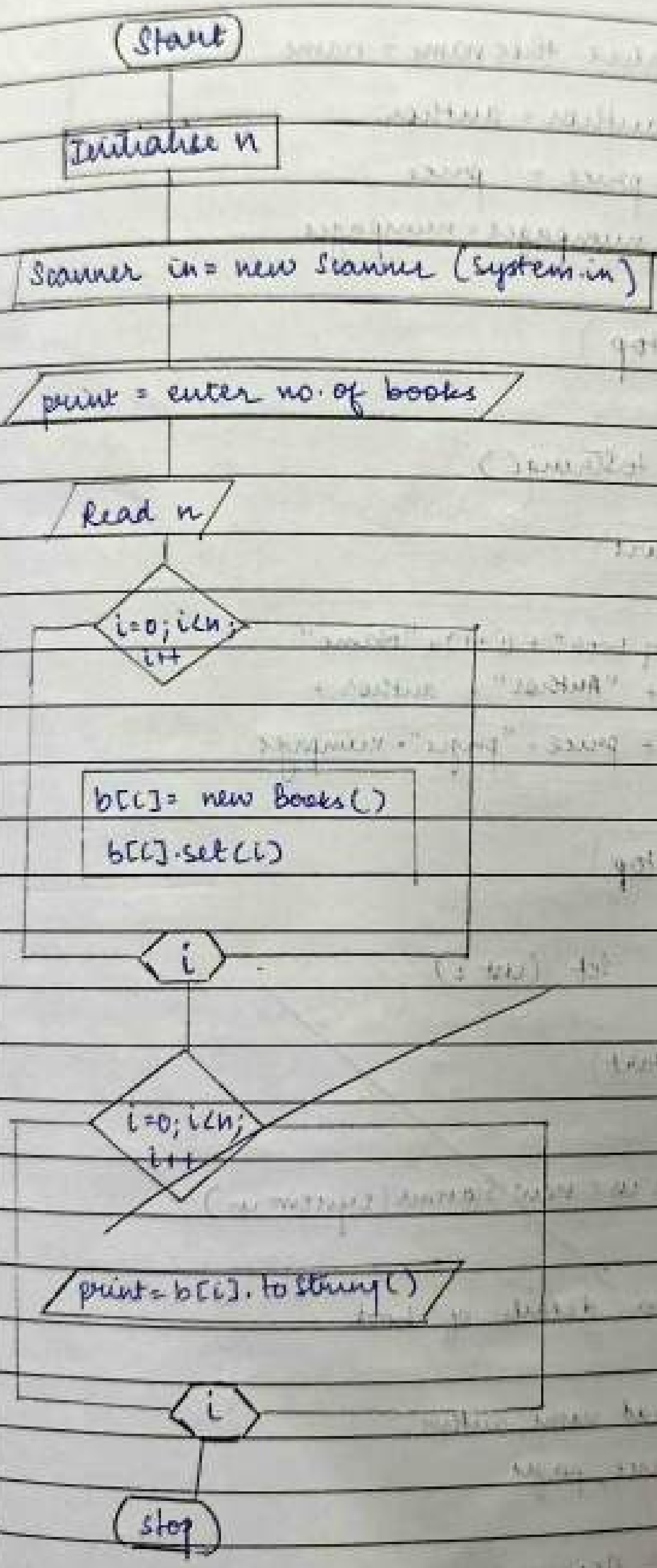
Program 4

Algorithm

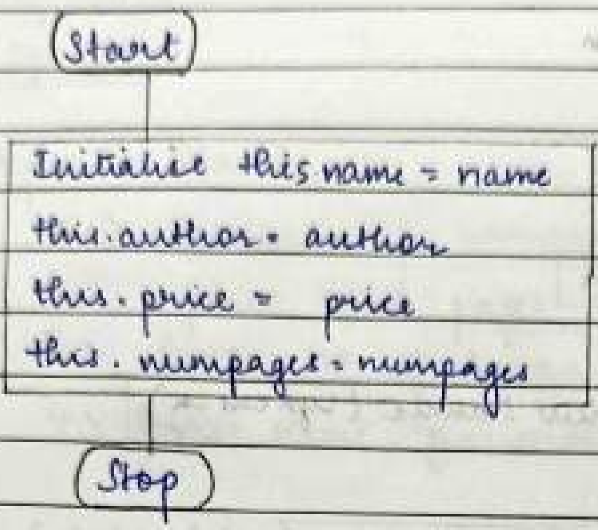
```
Step 1: Create abstract class named Shape
  2: include 2 members x and y
  3: declare abstract method area();
  4: Create sub-class Rectangle that extends
     shape
  5: Override area method to calculate area of
     rectangle
  6: Repeat step 4 and 5 for triangle and
     circle.
  7: In main method create object rectangle,
     triangle and circle
  8: stop.
```

Program - 3

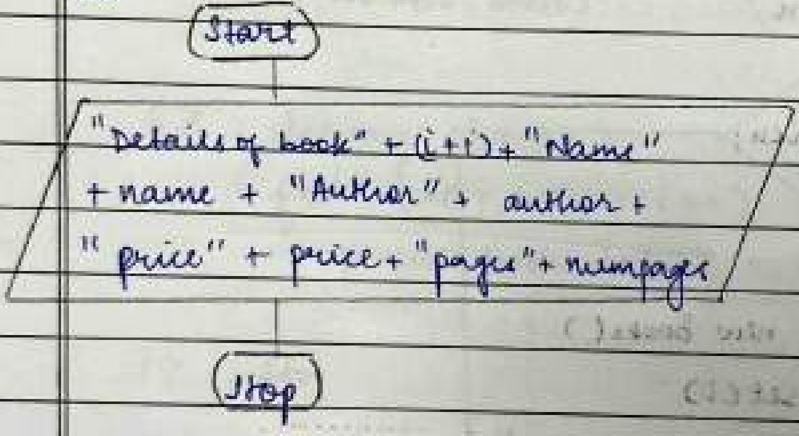
class main



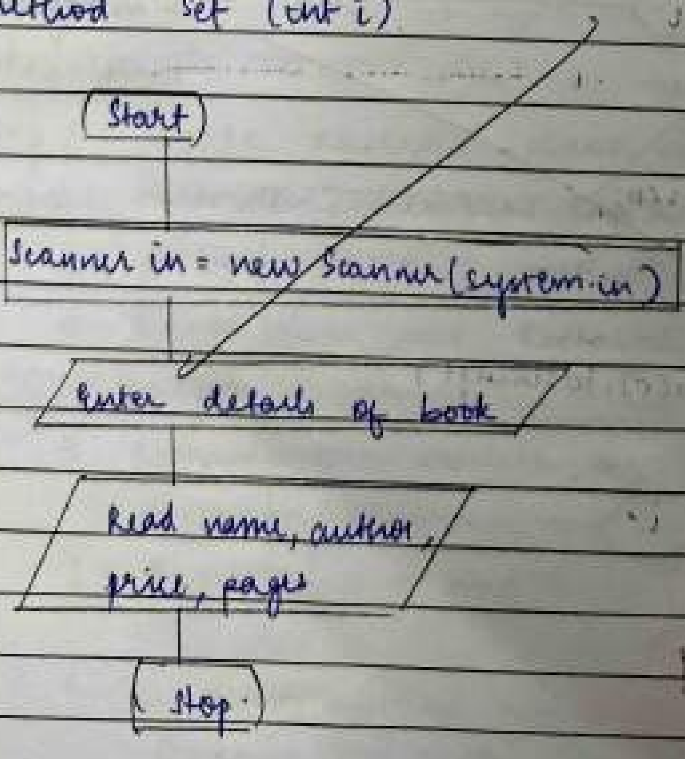
Constructor book



Method toString()

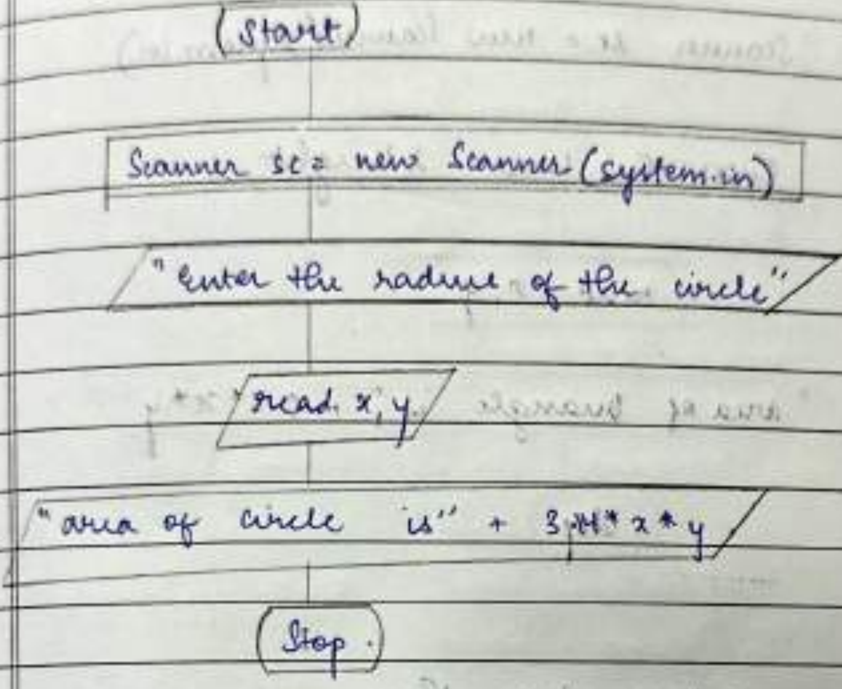

Start
"Details of book" + (i+1) + "Name"
+ name + "Author" + author +
" price" + price + "pages" + numpages
Stop

method set (int i)

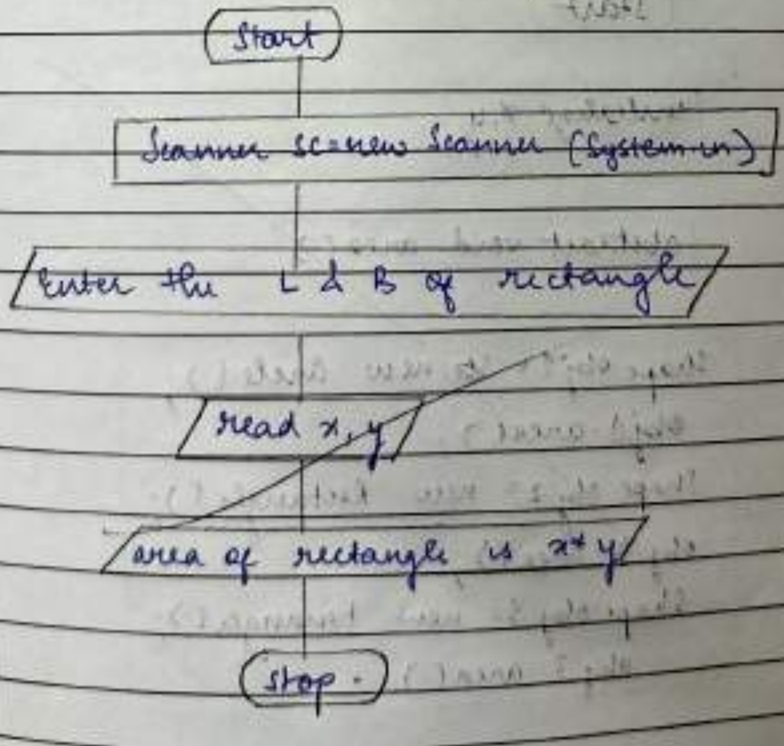


Program - 4

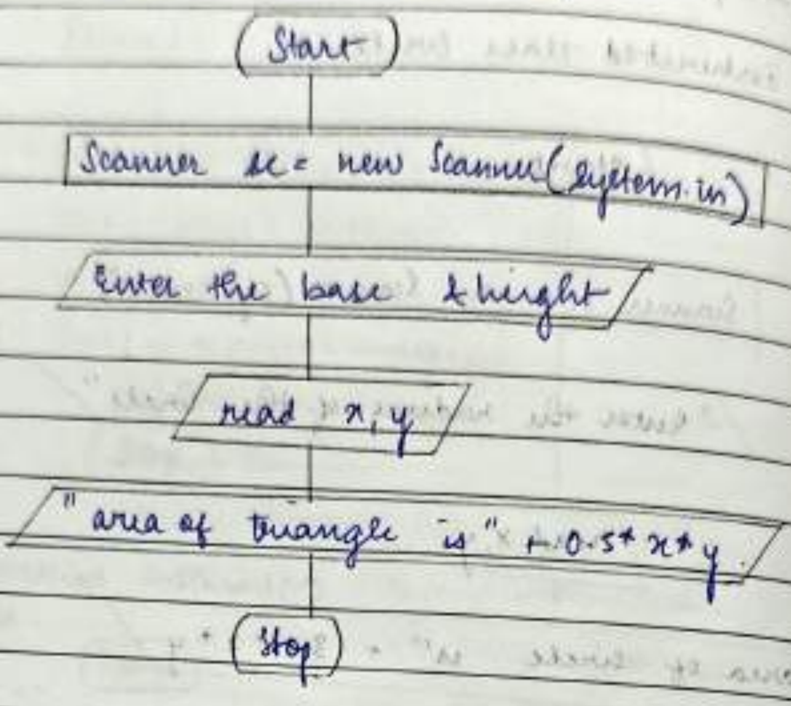
inherited class circle


(Start)
Scanner sc= new Scanner(system.in)
"Enter the radius of the circle"
read x, y.
"area of circle is" + 3.14* x * y
Stop .

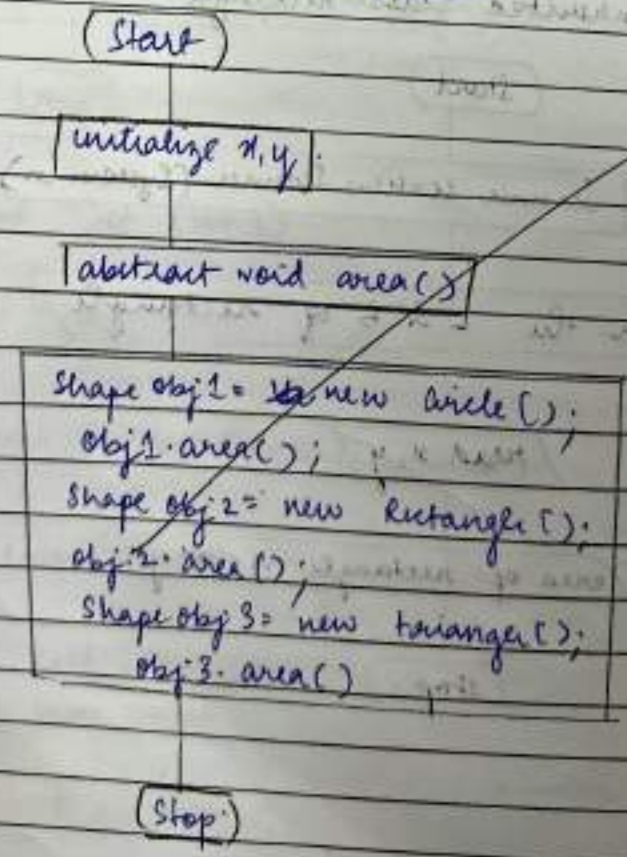
Inherited Class rectangle.


Start
Scanner sc=new Scanner (System.in)
Enter the L & B of rectangle
read x, y
area of rectangle is x* y
stop .

Inherited class triangle


Start
Scanner sc = new Scanner(System.in)
Enter the base & height
read x, y
"area of triangle is" + 0.5 * x * y
Stop

abstract class shape.



```
Shape obj1 = ~~sh~~ new Circle();
obj1.area();
Shape obj2 = new Rectangle();
obj2.area();
Shape obj3 = new triangle();
obj3.area()
```

19/01

Lab - 5.

Program - 1

```
public class Cart{
 private String itemName;   //private members.
private int price;
private int quantity;

 //first setter method.
 public void setItemName (string itemName){
     this.itemName= itemName;
  }
 //first getter method
 public string  getItemName (){
    return itemName;

  public void setPrice (int price){
   this.price= price;
  }

  public int  getPrice (){
       ~~rtar~~ return price;
  }

  public static void main (string[] args){
    Cart obj = new Cart ();
    obj.setItemName ("Butter");
    obj. setPrice (50);
    System.out.println ("The details are:");
    System. out. println (obj.getItemName());
    System. out. println(obj. getPrice());
  }.
```

Program - 62

```
import java.util.Scanner;

Class Account{
    String CustomerName;
    long accno;
    String accountType;
    double balance;
    ~~public Account~~

Public Account (String customerName, long accno,
                    String accountType){
    this.customerName = CustomerName;
    this.accno = accno;
    this.accountType = accountType;
    this.balance = 0.0;
  }
Public void displayBalance(){
    System.out.println("Account number"+
                                accno);
    System.out.println("Customer name:"+
                           customername);
    System.out.println("Account type:"+
                           accountType);
    System.out.println("Balance: $"+
                           Balance);
  }
}
```

```
Class CurAcct extends Account (){
    double minBalance;
    double serviceCharge;
    public CurAcct (String customerName,
                        long accno){
        super (customerName, accno ,"Current");
        this.minBalance = 500.00
        this.serviceCharge = 50.00
    }
    public void withdraw (double amount){
        if (Balance - amount >= minBalance) {
                Balance -= amount;
            System.out.println ("Withdrawal
            successful. Current balance: $"
                + balance); }
        else {
        System.out.println ("Insufficient balance.!
            Withdrawal unsuccessful");
            }
    }
    ~~public void imposeServiceCharge (){~~
    ~~if (balance < minBalance) {~~
        ~~balance -= serviceCharge;~~
        ~~System.out.println ("Service charge~~
            ~~imposed. Current balance: $" + balance)~~
        ~~}~~
    }
}.
```

```
Class SavAcct extends Account {
    double interestRaate;

    public SavAcct (string customerName,
                    long accno){
      super (customerName, accno, "Savings");
      this.interestRate = 0.05;
    }

   public void deposit Interest (){
    double interest = balance* interestRate;
    balance + = interest;
    System.out.println ("Interest deposited.
            Current balance : $" + balance};
   }

    public void   compound Interest (double
     initialAmount, int term){
       double compound Interest =
       initialAmount* Math.pow (1 + interesti
         term) - initialAmount;

         balance + = compoundInterest;
    System.out.println ("Compound Interest
      deposited Current balance : Rs" + balanc
    }
  }

 public class Bank{
    public Static void main (string []args){
     Scanner sc = new Scanner(System.in)
     System.out.println (" Choose account typ
System.out.println("1. Current");
System.out.println("2. Savings");
System.out.print(" Enter choice: (1or2). ");
int choice = ~~Sto~~ scanner.nextInt();
System.out.print("Enter customer name");
String customerName = scanner.nextLine();
System.out.print("Enter account number");
long accno = scanner.nextLong();
if (choice == 1){
  CurAcct curAccount = new CurAcct(
                 CustomerName, accno.);
  System.out.print("Enter initial balance");
  double initialBalance = Scanner.nextDouble();
  curAccount.balance = initialBalance;
  System.out.print("Enter withdrawal Amount :");
  double withdrawalAmount = scanner.nextDouble();
  curAccount.withdraw(withdrawal-Amount);
  curAccount.imposeServiceCharge();

  curAccount.displayBalance();
 }
 else if (choice == 2)
 {
 ~~da~~ SavAcct savAccount = new SavAcct(
                 CustomerName, Accno);
  System.out.print("Enter initial balance: $");
  double ~~withdrawalAmount~~ initialBalance = scanner.nextDouble();
  SavAccount.balance = initialBalance;

  System.out.print(" Enter withdrawal Amount:);
  double withdrawalAmount = Scanner.nextDouble();
  savAccount.balance -= withdrawalAmount;
System.out.println ("Withdrawal Succesful.
        current balance : $"+ savAccount.balanc
System.out.print ("Enter Interest Rate");
double interestRate = scanner.nextDouble();
savAccount.interestRate = interestRate;

savAccount.displayBalance();
 System.out.println("Enter term (in years)
      for compound Int calculation:");
 int term = Scanner.nextInt();

savAccount.compoundInterest(initialBalance,te

savAccount.displayBalance();
 }
else {
- System.out.println("invalid choice");
 }
}
}.
```

Outputs.

Program 1.

```
The details we have set are:
Butter
50
```

Program 2.

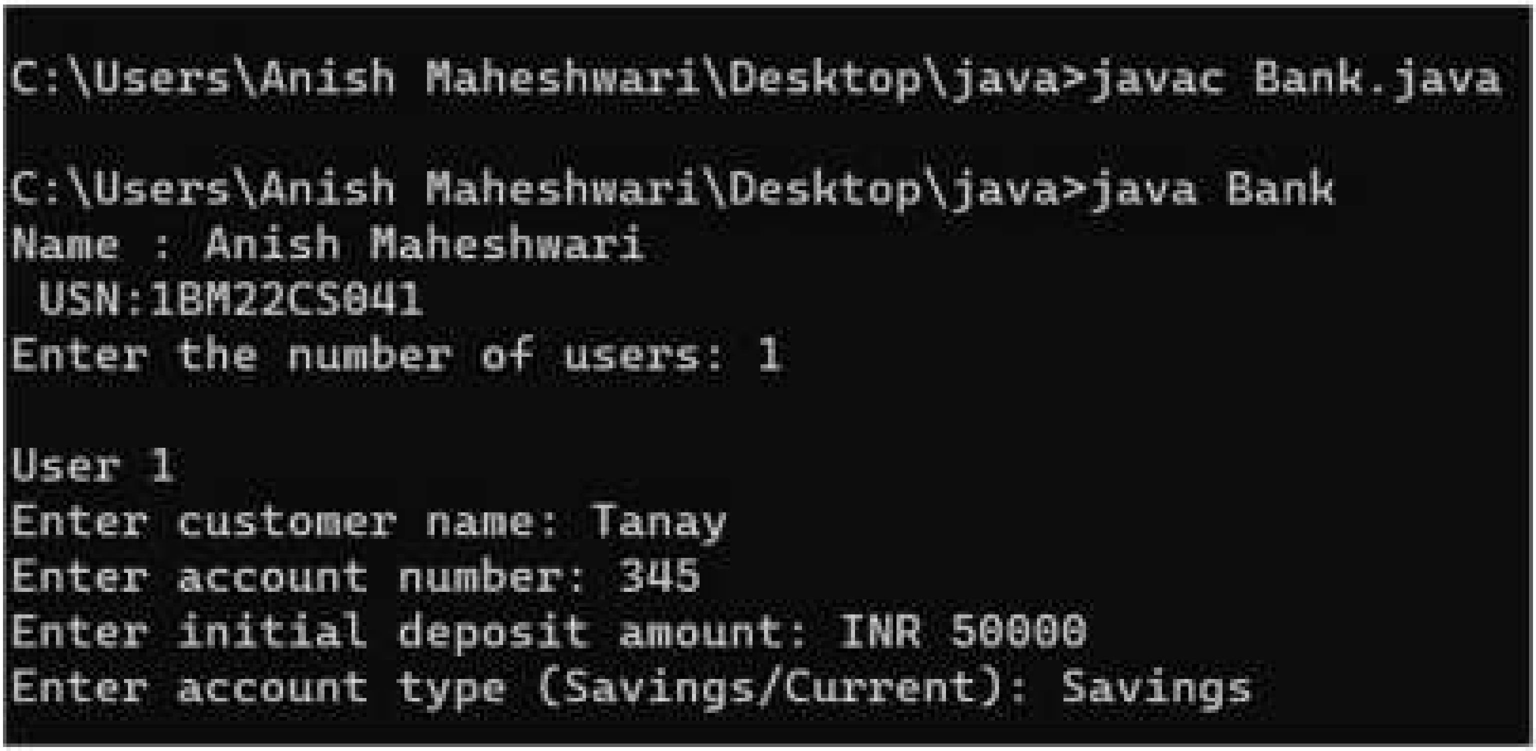
output1

```
Choose Account type:
1. Current
2. Savings
Enter choice (1or2) :1
Enter customer name: Anish
Enter Account number: 1234
Enter initial balance :$2000
Enter withdrawal amount: $1000

Withdrawal successful. Current Balance: $1000
Account Number: 1234
Customer Name: Anish
Account Type: Current
```

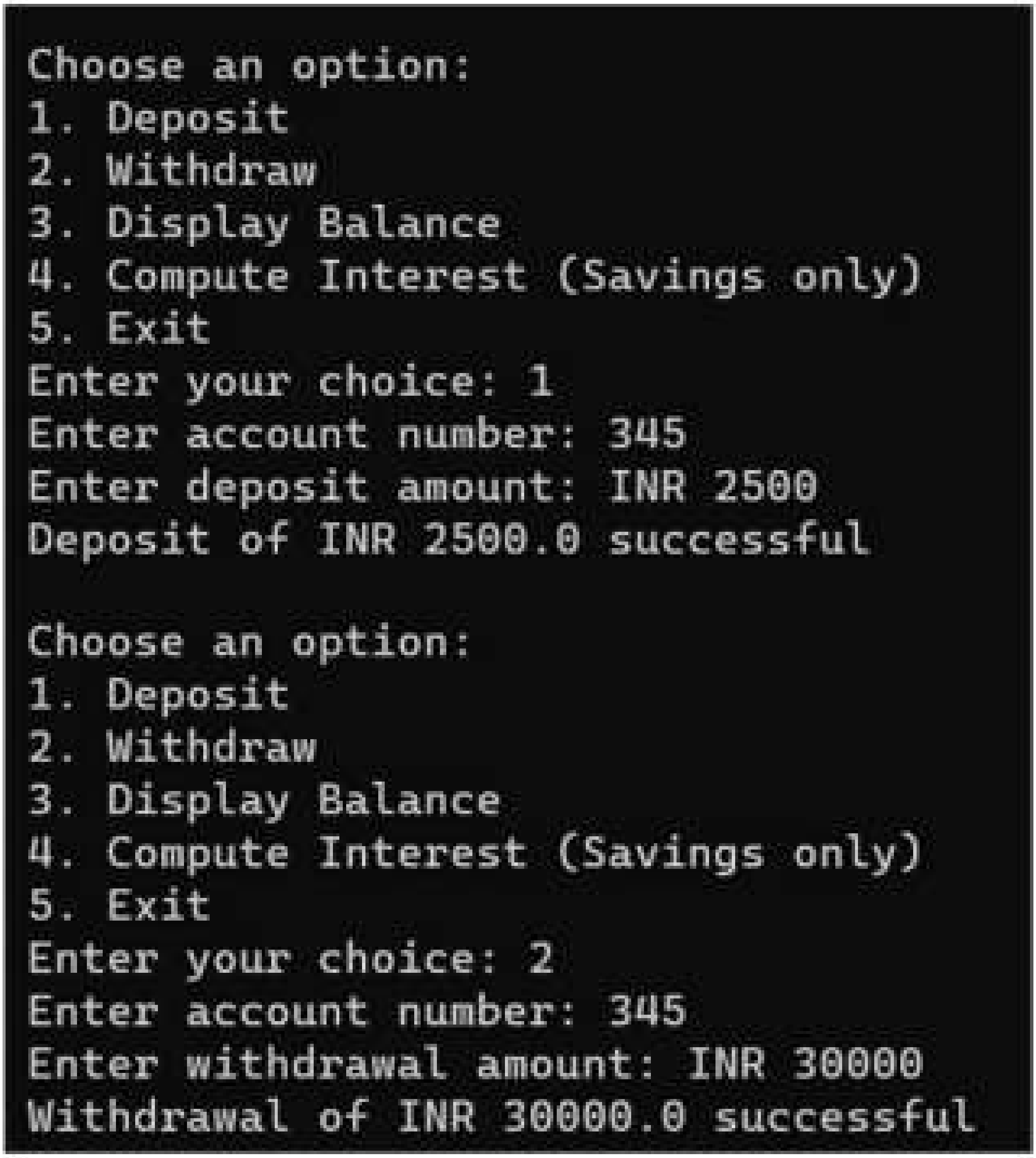
output2.

```
Choose Account type:
1- Current
2. Savings
Enter choice (1 or 2): 2
Enter customer name: Anish
Enter account number: 1234
Enter initial balance: $2000
Enter withdrawal amount: $500
Withdrawal Successful: Current balance :$1500
Enter interest rate = 0.08
~~Enter~~
Account number : 1234
Customer name: A
Account type: Savings
Balance: $2019.424
```

8
10/01/24



```
C:\Users\Anish Maheshwari\Desktop\java>javac Bank.java

C:\Users\Anish Maheshwari\Desktop\java>java Bank
Name : Anish Maheshwari
 USN:1BM22CS041
Enter the number of users: 1

User 1
Enter customer name: Tanay
Enter account number: 345
Enter initial deposit amount: INR 50000
Enter account type (Savings/Current): Savings
```



```
Choose an option:
1. Deposit
2. Withdraw
3. Display Balance
4. Compute Interest (Savings only)
5. Exit
Enter your choice: 1
Enter account number: 345
Enter deposit amount: INR 2500
Deposit of INR 2500.0 successful

Choose an option:
1. Deposit
2. Withdraw
3. Display Balance
4. Compute Interest (Savings only)
5. Exit
Enter your choice: 2
Enter account number: 345
Enter withdrawal amount: INR 30000
Withdrawal of INR 30000.0 successful
```

Program : 6

```
package CIE;

  public class Student (
      string VSN;
      String Name;
      ~~#~~ int sem;

     public student (String USN ; string Name, in
      {
        this.usn = usn;
        this. name = name;
        this. sem = sem;
      }
  }

public class internals entends Student {
 int [] internal Marks;

public internals (string USN, string Name, int sem,
                    int [] internalsmarks){
     super ( USN, name, sem);
    this.internalMarks = internalMarks;
   }
}
```

```
package SEE;
import CIE.Student;

public class External extends Student{
    int [] seeMarks;

public External (String USN, String Name, int Sem,
                    int [] seeMarks ){
    super (USN, Name, sem);
    this. seeMarks = seeMarks;
  }
}
```

Main program

```
import CIE.Internals;
import SEE.Externals;

public class FinalMarks{
   public static void main (String [] args){
      int n=5;

    int [] [] FinalMarks = new int [n] [5];

    Internals[] internalsArray = new Internals [n];
    Externals[] externalsArray = new Externals[n];

  for (int i = 0; i<n; i++){
      String USN = "USN" + (i+1);
      String name = "Student" + (i+1);
      int sem = 1;
```

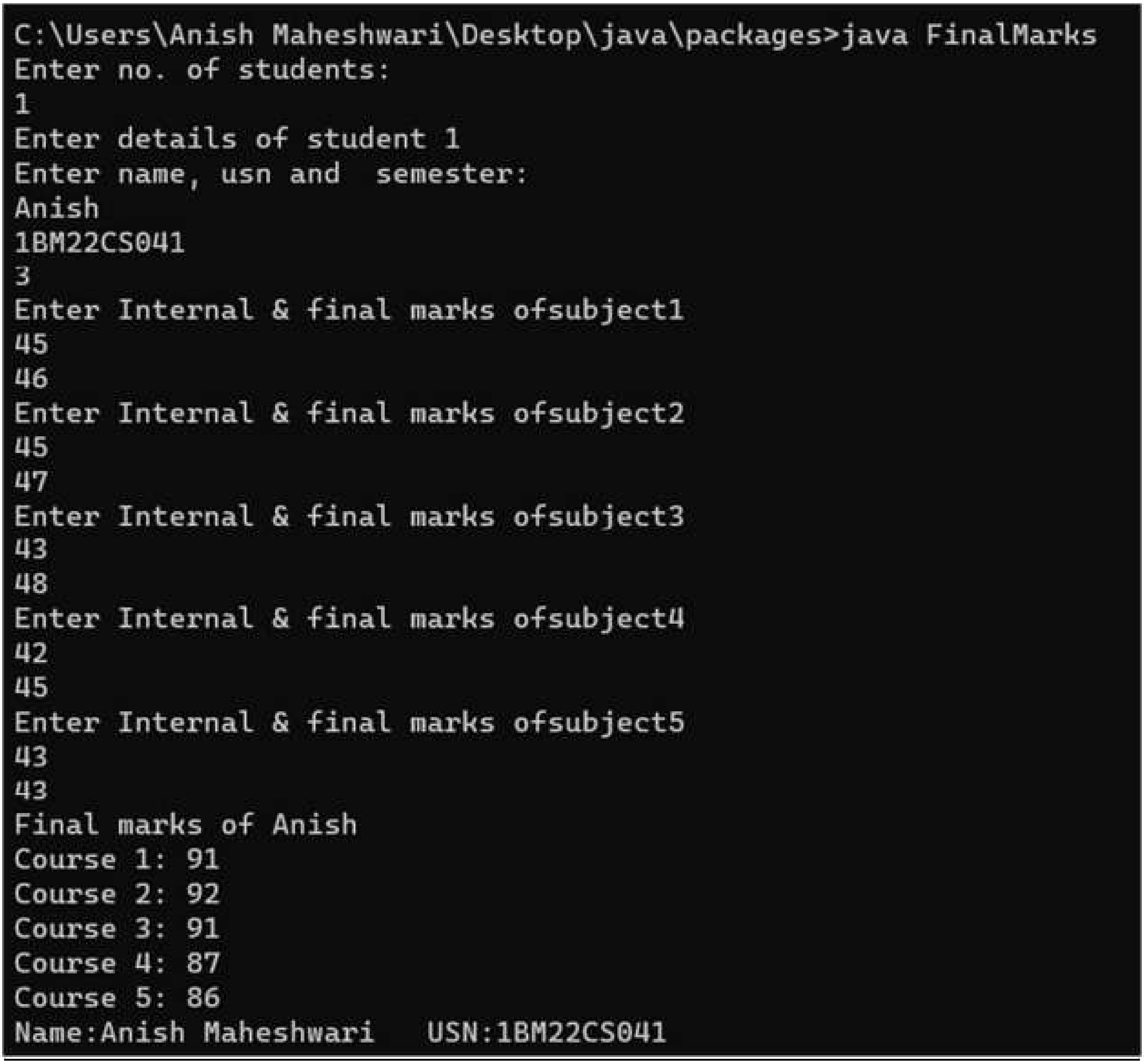
PAGE NO :
DATE :

```
int [] internal Marks = { random.nextInt (101),
                               random.nextInt (101),
      random.nextInt (101), random.nextInt (101),
                              random.nextInt (101)};

int [] seeMarks = { random.nextInt (101),
        random.nextInt (101), random.nextInt (10
        random.nextInt (101), random.nextInt (101)};

internals Array [i] = new Internals (usn, name, sem,
                                      Internal Marks);
externals Array [i] = new External (usn, name, sem,
                                      seeMarks);

 for (int j = 0; j<5; j++) {
 Final Marks [i][j] = internals Array [i].~~int~~ internalsMarks[j]
              + externals Array[i]+ seeMarks [j];
 }
}

System.out.println ("Final Marks for n students
                         in the 5 courses");
for (int i=0; i<n; i++){
 System.out.print ("Student " + (i+1) + ":");
  for (int j=0; j<5; j++){
        System.out.print ( final Marks [i][j] + " ");
   }
 System.out.print();
 }
}
```

Output :

```
Final Marks for n students in all 5 courses;

Student 1: 144   207   181   73   209
Student 2: 215   107   246   183  156
Student 3: 70    46    79    70   131
Student 4: 123   99    40    92   133
Student 5: 64    173   83    156  83
```

02/Jan/24



```
C:\Users\Anish Maheshwari\Desktop\java\packages>java FinalMarks
Enter no. of students:
1
Enter details of student 1
Enter name, usn and  semester:
Anish
1BM22CS041
3
Enter Internal & final marks ofsubject1
45
46
Enter Internal & final marks ofsubject2
45
47
Enter Internal & final marks ofsubject3
43
48
Enter Internal & final marks ofsubject4
42
45
Enter Internal & final marks ofsubject5
43
43
Final marks of Anish
Course 1: 91
Course 2: 92
Course 3: 91
Course 4: 87
Course 5: 86
Name:Anish Maheshwari   USN:1BM22CS041
```

Program-7.

```
import java.util.Scanner;
class WrongAge extends Exception{
{
 public WrongAge (String message){
  super (message);
  }
 }
class Father{
int fatherAge;
public Father (int fatherage) throws WrongAge{
if (father Age <0)
   {
    throw new WrongAge ("Age cant be negative");
   }
   this.fatherAge = fatherAge;
   }
   }
~~class Son extends Father {~~

Class son extends Father{
int ~~Son~~ sonAge;
public Son (int ~~@~~fatherAge, int sonAge) throws Wrong
{
 super (fatherAge);
 if (SonAge >= FatherAge){
 throw new WrongAge ("Son's age must be less than
                       Father's age");
}
  this.SonAge = SonAge;
}
}.
```

```
public class fatherson{
 public static void main (string Args[]){
      Scanner sc= new Scanner(System.in);
  System.out.println("Enter father's age and son's
                                  age");
  int fa= sc.nextInt();
  int sa = sc.nextInt();

 try{
 Son s = new Son (fa,sa);
 System.out.println("Father's age"+s.fatherAge);
 system.out.println("Son's Age"+ s.sonAge);
 } catch (WrongAge e){
 System.out.println("error"+e.getMessage());
 }
}
}
```

PAGE NO :
DATE :

Program-8·

```
class A extends Thread{
 int t1=0, time;
A()
{
 t1= 10000,
 time = 21000;
}

public void run()
 {
  while (t1 <= time)
  {
    ~~system. out. println ("error");~~
  ~~}~~
 ~~t1+=10000;~~
}}
  System. out. println("BMSCE");
  try {
    sleep (10000);
  } catch (Exception e) {
}     system. out. println ("error");
}   }
      t1+ =10000;
     }
   }
}
class B extends Thread{
int t2, time;
B(){
 time = 41000;
 t2 = 2000;
}
```

```
public void run(){
   while (t2<= time)
   {
    System.out.println ("CSE");
    try {
     sleep (2000);
    }
    catch (Exception e)
    {
     System.out.println("error");
    }
    t2+ = 2000
   }
  }
}
class th
{
  public static void main (String Args[])
  {
   A a = new A().
   B b = new B();
   a.start();
   b.start();
  }
}
```

1975

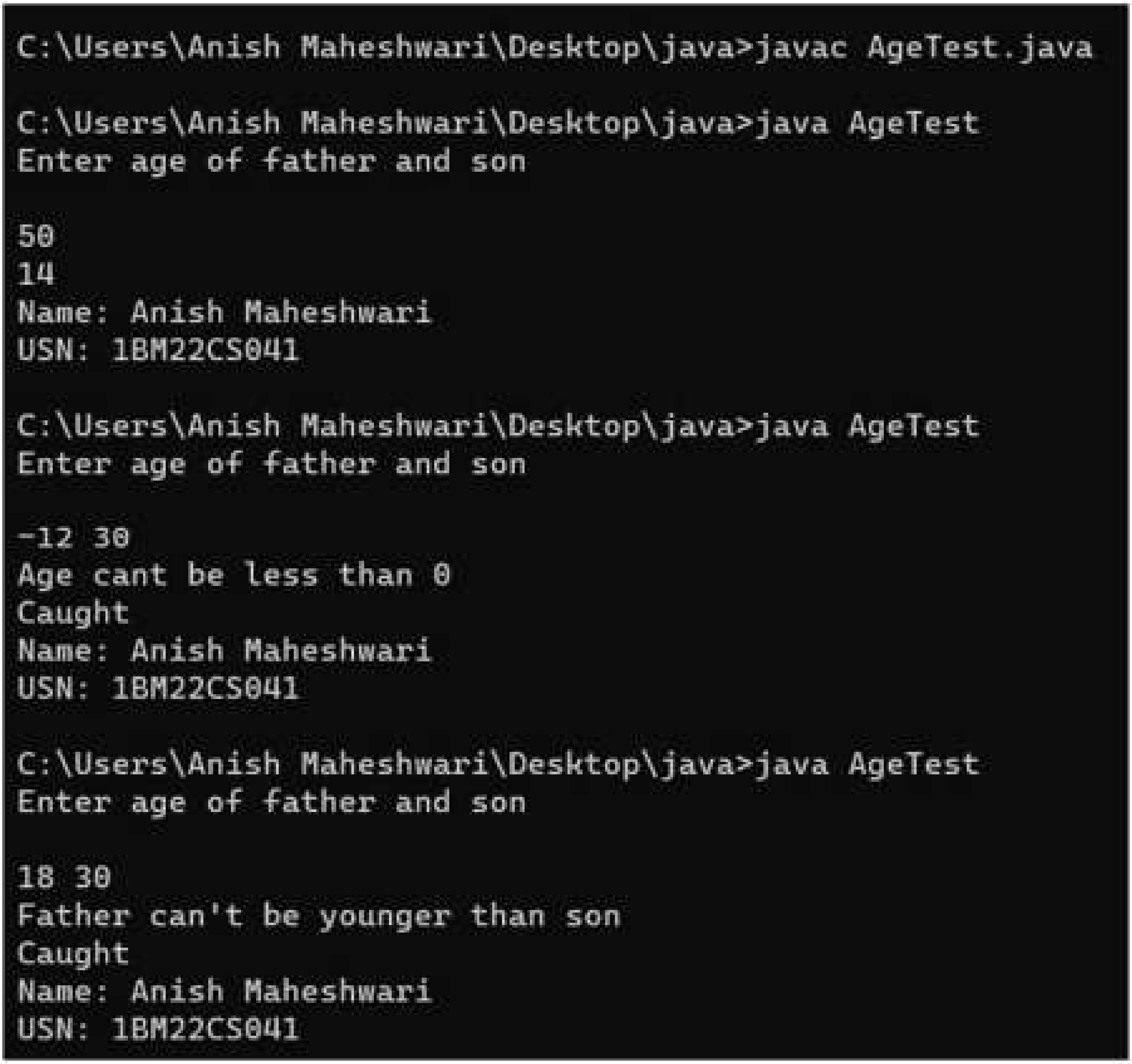
program 7 output

1>
```
Enter FathersAge and Son's Age!
48
20
Father's Age : 48
Son's Age: 20
```

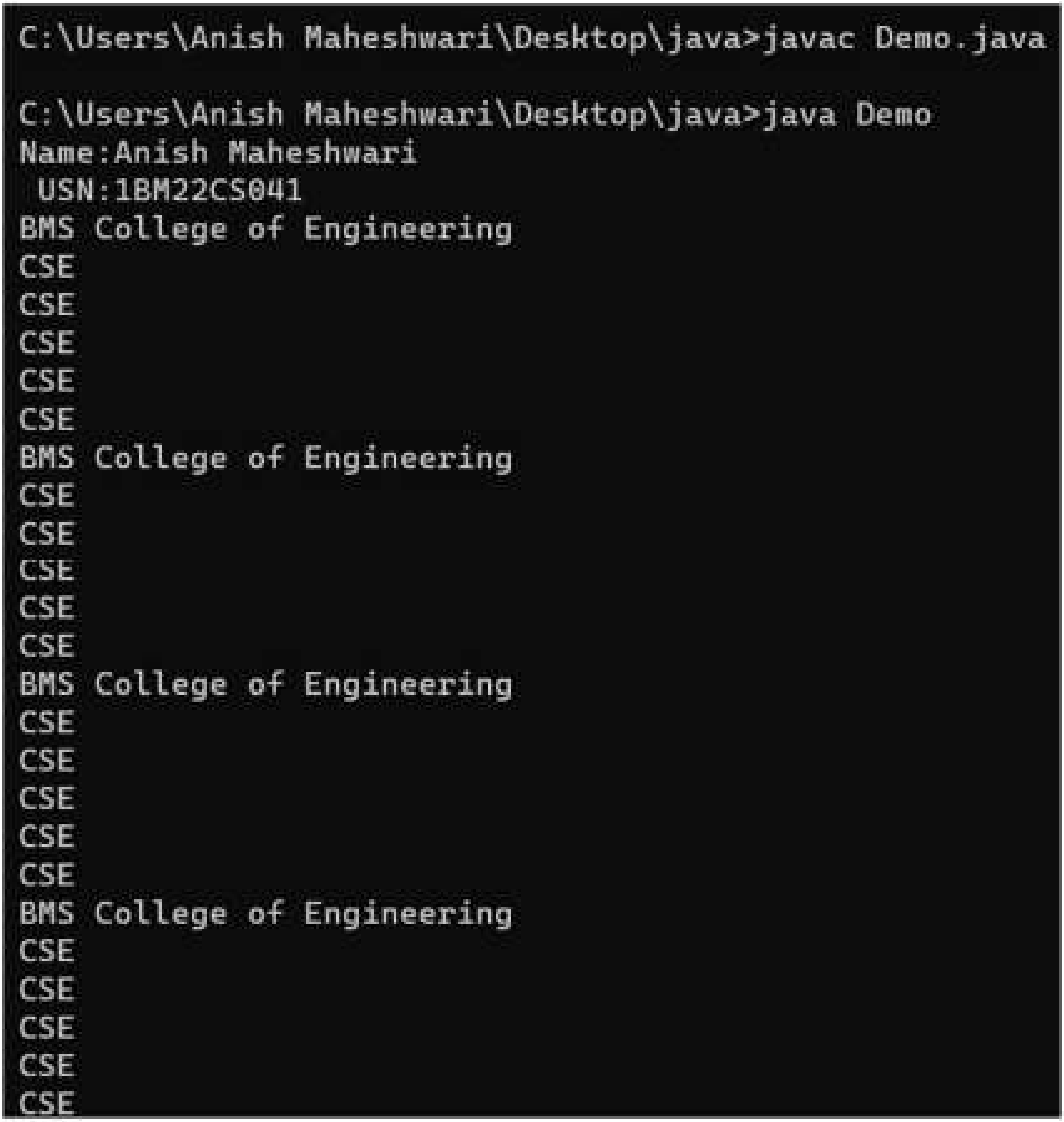
2>
```
Enter Father's Age and Son's Age;
20
48
~~Father's Age~~
Error: Son's age must be less than father's age
```

Program 8 -

```
BMS college of Engineering
CSE
CSE
CSE
CSE
BMS college of Engineering
CSE
CSE
CSE
CSE
CSE
CSE
```



```
C:\Users\Anish Maheshwari\Desktop\java>javac AgeTest.java

C:\Users\Anish Maheshwari\Desktop\java>java AgeTest
Enter age of father and son

50
14
Name: Anish Maheshwari
USN: 1BM22CS041

C:\Users\Anish Maheshwari\Desktop\java>java AgeTest
Enter age of father and son

-12 30
Age cant be less than 0
Caught
Name: Anish Maheshwari
USN: 1BM22CS041

C:\Users\Anish Maheshwari\Desktop\java>java AgeTest
Enter age of father and son

18 30
Father can't be younger than son
Caught
Name: Anish Maheshwari
USN: 1BM22CS041
```



```
C:\Users\Anish Maheshwari\Desktop\java>javac Demo.java

C:\Users\Anish Maheshwari\Desktop\java>java Demo
Name:Anish Maheshwari
 USN:1BM22CS041
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
```

Week 7 ·

Program – 9

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

class SwingDemo
 {
  SwingDemo()
   {
    JFrame jfrm = new JFrame ("Divider app");
    jfrm.setSize (265, 150);
    jfrm.setLayout (new FlowLayout());
    jfrm.setdefaultCloseOperation (Jframe. Exit_On_
   Jlabel jlab = new Jlabel ("Enter the         Close);
                                  divider and quotient")

   JTextField ajtf = new JTextField (8);
   JTextfield bjtf = new JTextField (8);

   JButton button= new JButton (" Calc");
   Jlabel err = new Jlabel ();
   Jlabel alab= new Jlabel ();
   Jlabel blab= new Jlabel ();
   Jlabel anslab = new Jlabel ();

  Jfrm.add (err);
   jfrm. add (jlab);
  jfrm. add ( ajtf );
  jfrm -add ( bjtf);
```

```
jfrm.add(alab);
jfrm.add(blab);
jfrm.add(button);
jfrm.add(anslab);

ActionListener I = new ActionListener();
{
  public void actionperformed (action event evt);
  {
     system.out.println("Action event froma
                             text field");
  }
};
ajtf.addAction listener (I);
bjtf. add Action listener (I);

button.add ActionListener (new ActionListener();
{
  public void actionPerformed (ActionEvent evt)
  {
~~    if (err.get Text()!= null)~~
~~     err.set Text("");~~
~~    Try~~
~~    {~~
~~     int a= Integer.parseInt (ajtf.getText();~~
~~     int b= Integer.parseInt(bjtf.getText());~~
~~    int ans = a/b;~~

   alab.setText ("\nA =" +a);
   blab.setText ("\n B="+b);
   anslab.setText ("\n Ans= " + ans );
  }
catch ( NumberFormatException e)
 {
   alab.setText(" ");
   blab.setText(" ");
  anslab.setText("Anish [1BM22CS041]");
 err.setText("Enter Integers only");
 }
catch (ArithmeticException e)
 {
   alab.setText (" ");
   blab.setText ("");
  anslab.setText(" Anish [1BM22CS041]");
  err.setText ("B should be non zero");
 }
});
  jfrm.setVisible (true);
}

public static void main (String Args[])
{
  SwingUtilities.invokeLater(new Runnable()
  {
    public void run()
    {
     new SwingDemo();
    }
  });
}
}
```

output.

~~Divider~~

Enter the divider and dividend

```
[A] [1] [2] [3] [4] [5] [6] [7] [8]
 B  [1] [2] [3] [4] [5> [6] [7] [8]
```

calculate

error message

A=10

B=2

Ans=5.

Algorithm.

Step1: Create JFrame containers.

Step2: Set layout

Step3: Set default close operation of container to EXIT_ON_Close.

Step4: Create a Jlabel named Jlab

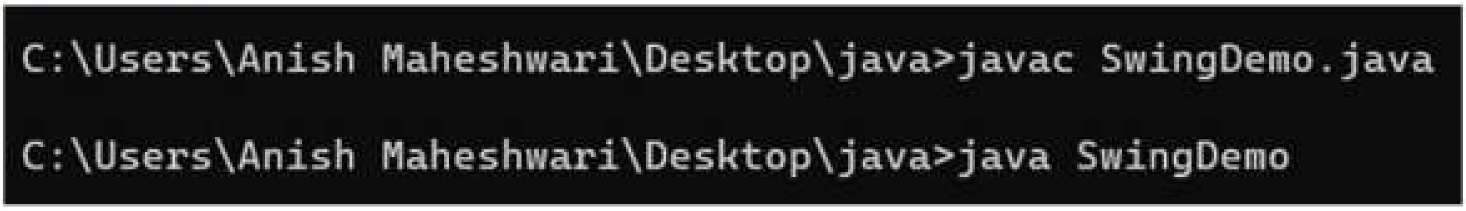
Step5: Create text tent field

Step6: Create Jbutton component named

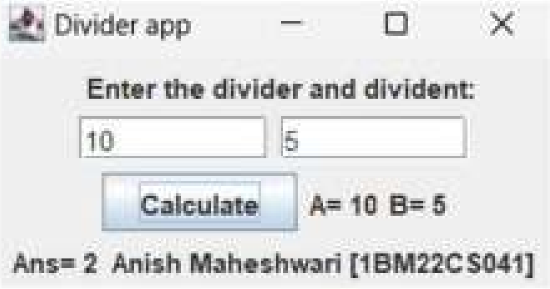
Step7: Write the final main function and end program.

29/2/20

OUTPUT:



```
C:\Users\Anish Maheshwari\Desktop\java>javac SwingDemo.java

C:\Users\Anish Maheshwari\Desktop\java>java SwingDemo
```



Enter the divider and divident:

10

5

A= 10 B= 5

Ans= 2 Anish Maheshwari [1BM22CS041]