

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“JnanaSangama”, Belgaum -590014, Karnataka.



## LAB REPORT on

## Object Oriented Java Programming

*Submitted by*

**OVHAY KUMAR(1BM21CS122)**

*in partial fulfillment for the award of the degree of*  
**BACHELOR OF ENGINEERING**  
*in*  
**COMPUTER SCIENCE AND ENGINEERING**



**B.M.S. COLLEGE OF ENGINEERING**

(Autonomous Institution under VTU)

**BENGALURU-560019**

**Oct 2022-Feb 2023**

**B. M. S. College of Engineering,**  
**Bull Temple Road, Bangalore 560019**  
(Affiliated To Visvesvaraya Technological University, Belgaum)  
**Department of Computer Science and Engineering**



**CERTIFICATE**

This is to certify that the Lab work entitled “**Object Oriented Java Programming**” carried out by OVHAY KUMAR (**1BM21CS122**), who is bonafide student of **B. M. S. College of Engineering**. It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum during the year 2022-23. The Lab report has been approved as it satisfies the academic requirements in respect of Data Structures Lab - (**21CS3PCOOJ**) work prescribed for the said degree.

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## Course Outcome

CO1	Apply the knowledge of Java concepts to find the solution for a given problem.
CO2	Analyse the given Java application for correctness/functionalities.
CO3	Develop Java programs / applications for a given requirement.
CO4	Conduct practical experiments for demonstrating features of Java.

## PROGRAM 1

1) Develop a Java program that prints all real solutions to the quadratic equation  $ax^2+bx+c=0$ . Read in a, b, c and use the quadratic formula. If the discriminate  $b^2-4ac$  is negative, display a message stating that there are no real solutions.

Programme for Solving quadratic equation

```
import java.util.Scanner;
class Exercise2 {

    public static void main (String[] Strings)
    {
        Scanner input = new Scanner (System.in);

        System.out.print ("Input a: ");
        Double a = input.next Double ();
        System.out.print ("Input b: ");
        Double b = input.next Double ();
        System.out.print ("Input c: ");
        Double c = input.next Double ();

        Double result = b * b - 4.0 * a * c;

        if (result > 0.0) {
            Double x1 = (-b + Math.sqrt (result), b:0.5)
                / (2.0 * a);
            Double x2 = (-b - Math.sqrt (result, 0.5)) / (2.0
                * a);
            System.out.println ("The roots are " + x1 +
                " and " + x2);
        }
        else if (result == 0.0)
        {
            Double x1 = -b / (2.0 * a);
            System.out.println ("The root is " + x1);
        }
    }
}
```

papergrid  
Date: / /

```

}
else
{
    system.out.println("The equation has
    no real roots.");
}
}
}
}

Output

1) Input a: 2
   Input b: 3
   Input c: 35

   The equation has no real roots

2) Input a: 2
   Input b: -8
   Input c: -5

   The roots are real and distinct
   3.44048974275373 and -1.440489

3) Input a: -3
   Input b: 3
   Input c: 3

   The roots are real and distinct
   -0.61803 and 1.61803
  
```

papergrid  
Date: / /

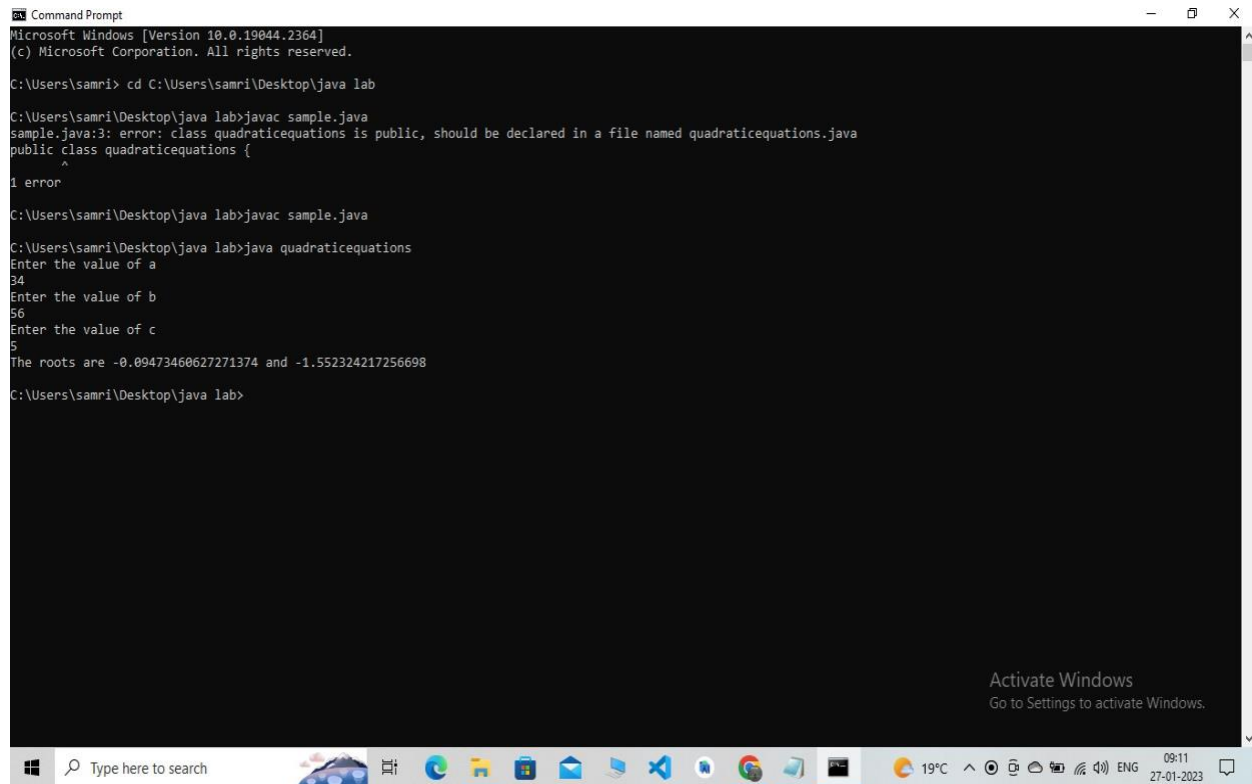
```

4) Input a: 2
   Input b: -12
   Input c: 36

   The root is real and equal 6.0

   SDG
   18/11/2021
  
```

## OUTPUT:



```
Command Prompt
Microsoft Windows [Version 10.0.19044.2364]
(c) Microsoft Corporation. All rights reserved.

C:\Users\samri> cd C:\Users\samri\Desktop\java lab

C:\Users\samri\Desktop\java lab> javac sample.java
sample.java:3: error: class quadraticequations is public, should be declared in a file named quadraticequations.java
public class quadraticequations {
      ^
1 error

C:\Users\samri\Desktop\java lab> javac sample.java

C:\Users\samri\Desktop\java lab> java quadraticequations
Enter the value of a
34
Enter the value of b
56
Enter the value of c
5
The roots are -0.09473460627271374 and -1.552324217256698

C:\Users\samri\Desktop\java lab>
```

## PROGRAM 2

**Develop a Java program to create a class Student with members usn, name, an array credits and an array marks. Include methods to accept and display details and a method to calculate SGPA of a student.**

## Students Details

```
→ import java.util.Scanner;

class Student {
    int String id, name;
    int no-of-sub, credits [], marks [];

    double sgpa () {
        int i, p;
        double avg, a = 0, s = 0;
        for (i = 0; i < no-of-sub; i++)
        {
            p = (marks [i] / 10 + 1);
            if (marks [i] == 100) {
                p = 10;
            }
            s += credits [i] * p;
            c += credits [i];
        }
        avg = s / c;
        return avg;
    }
}

class ex {
    public static void main (String args [])
    {
        Student st = new Student ();
    }
}
```



```

Scanner sc = new Scanner (System.in);
int i;
System.out.println ("Student Name:");
st.name = sc.nextLine();
System.out.println ("Student USN:");
st.usn = sc.nextLine();
System.out.println ("Enter no. of sub:");
st.no_of_sub = sc.nextInt();
System.out.println ("Enter the marks in order:");

st.credits = new int [st.no_of_sub];
for (i = 0; i < st.no_of_sub; i++)
{
    st.credits [i] = sc.nextInt();
}

System.out.println ("Enter the marks in order:");
st.marks = new int [st.no_of_sub];
for (i = 0; i < st.no_of_sub; i++) {
    st.marks [i] = sc.nextInt();
}

sc.close();
System.out.println ("_____");
System.out.println ("The SGPA of " + st.name
+ " having usn " + st.usn + " is " + st.
sgpa());
}
}

```

Output



Student name: OVhay Kumar

Student USN: 1BM21CS122

Enter number of subjects: 9

Enter the credits in order:

3 4 1 3 1 3 1 3 1

Enter the marks in order:

77 70 91 61 93 68 96 88 91

The SGPA of OVhay Kumar having USN  
1BM21CS122 is 8.25

SCG  
2/12/2017

OUTPUT :

```
Command Prompt
public class Sgpa {
    ^
1 error

C:\Users\samri\Desktop\java lab>javac sample.java
C:\Users\samri\Desktop\java lab>java Sgpa
Enter the Details of the student

Enter the usn of the student
345
Enter the Name of the Student
samrith
Enter the Marks of the 1 st Subject
98
Enter the Marks of the 2 st Subject
99
Enter the Marks of the 3 st Subject
78
Enter the Marks of the 4 st Subject
90
Enter the Marks of the 5 st Subject
97
The Name of the Student : samrith
The Usn of the Student : 345
The SGPA of the Student : 8.0

C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
C:\Users\samri\Desktop\java lab>
```

Activate Windows  
Go to Settings to activate Windows.

### **PROGRAM 3**

**Create a class Book which contains four members: name, author, price, num\_pages. Include a constructor to set the values for the members. Include methods to set and get the details of the objects. Include a toString( ) method that could display the complete details of the book. Develop a Java program to create n book objects**

3<sup>rd</sup> week

```

import java.util.Scanner;
import java.lang.*;
import java.util.Scanner;
class book
{
    String name, author;
    int price, num-pages;

    book (String name, String author, int price,
          int num-pages)
    {
        this.name = name;
        this.author = author;
        this.price = price;
        this.num-pages = num-pages;
    }

    public String toString()
    {
        return name + " " + author + " " + price + " "
            + num-pages;
    }

    public static void main (String args[])
    {
        Scanner sc = new Scanner(System.in);
        System.out.print ("Enter the total no.
        of books:");
        int n = sc.nextInt();
        book b1 = new book ("J K Rowling", "Harry
        Potter", 600, 1000);
    }
}

```

System.out.println(b2.toString());  
 book b[] = new book[n];  
 for (int i = 0; i < n; i++)  
 {  
   String name, author;  
   int price, num-pages;  
   System.out.println("Enter the author:");  
   author = sc.next();  
   System.out.println("Enter the name of book:");  
   name = sc.next();  
   System.out.println("Enter the price:");  
   price = sc.nextInt();  
   System.out.println("Enter the no. of pages of book:");  
   num-pages = sc.nextInt();  
   b[i] = new book(name, author, price, num-pages);  
 }  
 for (int i = 0; i < n; i++)  
 {  
   System.out.println(b[i].toString());  
 }  
 }

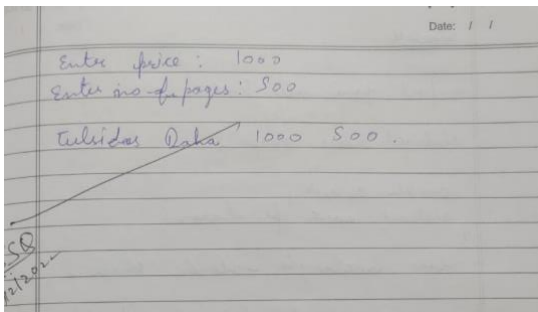
Output

Enter the total no. of books: 1

JK Rowling Harry Potter 600 1000

Enter the author: J.K. Rowling

Enter the book name: Harry Potter



## OUTPUT:

```

Command Prompt

at java.base/java.util.Scanner.next(Scanner.java:1598)
at java.base/java.util.Scanner.nextDouble(Scanner.java:2569)
at Bookdetails.main(sample.java:59)

C:\Users\samri\Desktop\java lab>java Bookdetails
Enter the no of Books
2
Enter the Details of the 1st Book
Enter the Title of the Book
CodedTriangles
Enter the Author of the Book
SreedharPriyan
Enter the Price of the Book
345
Enter the Pages of the Book
190
Enter the Details of the 2nd Book
Enter the Title of the Book
Annakaranina
Enter the Author of the Book
LeoTosltay
Enter the Price of the Book
567
Enter the Pages of the Book
45
Title Author Price Numberofpages
CodedTriangles SreedharPriyan 345.0 190
Annakaranina LeoTosltay 567.0 45

C:\Users\samri\Desktop\java lab>

```

### **PROGRAM 4**

**Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea( ). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea( ) that prints the area of the given shape.**



Week 4

```
import java.util.Scanner
```

```
abstract class shape {
```

```
    double a, b, h;
```

```
    abstract void printarea();
```

```
}
```

```
class rectangle extends shape {
```

```
    void getData (double x, double y)
```

```
    {
```

```
        a = x;
```

```
        b = y;
```

```
    }
```

```
    void printarea() {
```

```
        double area = a * b;
```

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

```
    }
```

```
}
```

```
class triangle extends shape {
```

```
    void getData (double x, double y) {
```

```
        b = x
```

```
        h = y;
```

```
    }
```

```
    void printarea() {
```

```
        double area = 1/2 * (b * h);
```

```
        System.out.println("area of triangle  
                             is : " + area);
```

```
    }
```

```
}
```

```
class circle extends shape {
```

```
void getData(Double a) {
```

```
    a = 7;
```

```
}
void printArea() {
```

```
    Double area = 3.14 * a * a;
```

```
    System.out.println("area of ci is: " + area);
```

```
}
```

```
}
```

```
class area2 {
```

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

```
        Scanner o = new Scanner (System.in);
```

```
        int ch;
```

```
        rectangle r = new rectangle ();
```

```
        triangle t = new triangle ();
```

```
        circle c = new circle ();
```

```
        System.out.println ("Menu")
```

```
        System.out.println ("1. Rect 2. Tri 3. Circle")
```

```
        ch = o.nextInt();
```

```
        switch (ch) {
```

```
            case 1: by S.O.P ("Enter l + b");
```

```
                Double l = o.nextDouble();
```

```
                Double b = o.nextDouble();
```

```
                r = getData (l, b);
```

```
                r.printArea ();
```

```
                break;
```

```

Case 3: S.O.P("Enter radius");
double r1 = 0; next Double();
C.getData(r1);
C.printArea();
break;
Default: S.O.P("Invalid");

```

}

}

}

output

Menu

Select shape

- 1 Rectangle
- 2 Triangle
- 3 Circle

Plzz enter your choice : 1

Enter l + b

3 9

area of rectangle is : 27.0

## OUTPUT:

```
Annakaranina LeoToslttoy 567.0 45

C:\Users\samri\Desktop\java lab>javac sample.java

C:\Users\samri\Desktop\java lab>java Area
choose to calculate area
1.Rectangle
2.Triangle
3.Circle
Enter Your Choice
2
Enter the value of length
54
Enter the value of breath
4
The area of the Rectangle is :216

C:\Users\samri\Desktop\java lab>java Area
choose to calculate area
1.Rectangle
2.Triangle
3.Circle
Enter Your Choice
1
Enter the value of length
34
Enter the value of height
56
The area of the Triangle is :952.0

C:\Users\samri\Desktop\java lab>java Area
choose to calculate area
1.Rectangle
2.Triangle
3.Circle
Enter Your Choice
3
Enter the value of Radius
56
The area of the Circle is :9847.04

C:\Users\samri\Desktop\java lab>
```

## PROGRAM 5

**Develop a Java program to create a class Bank that maintains two kinds of account for its customers, one called savings account and the other current account. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should also maintain a minimum balance and if the balance falls below this level, a service charge is imposed. Create a class Account that stores customer name, account number and type of account. From this derive the classes Cur-acct and Sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks: a) Accept deposit from customer and update the balance. b) Display the balance. c) Compute and deposit interest d) Permit withdrawal and update the balance Check for the minimum balance, impose penalty if necessary and update the balance.**





Week 5

papergrid

Date: / /

```
import java.util.Scanner;
```

```
class Account {  
    String CustomerName;  
    String acType;  
    int accNum;
```

```
    double balance = 1000;
```

```
    void Deposit (int amount) {
```

```
        balance += amount;
```

```
    }
```

```
    void DisplayBalance () {
```

```
        System.out.println ("The balance in  
the account is : " + balance);
```

```
    }
```

```
    class SavAcct extends Account {
```

```
        int n = 4;
```

```
        double r = 0.07;
```

```
        void interest (double y) {
```

```
            double x = balance;
```

```
            balance = balance * Math.pow (1+r/n,  
            (y * n));
```

```
            System.out.println ("An amount of "  
            + (balance - x) + " has been deposited as  
            interest");
```

```
        }
```

```
void withdrawl (int amount) {  
    if (balance >= amount) {  
        balance -= amount;  
    }  
    else  
    {  
        System.out.println("You don't have  
the sufficient balance");  
    }  
}
```

```
class CurrAcct extends Account {  
    int minBalance = 1000, penalty = 7;  
    void withdrawl (int amount) {  
        if (balance < minBalance) {  
            balance -= amount;  
        }  
        else  
        {  
            System.out.println("You don't  
have the sufficient balance");  
        }  
    }  
}
```

```
class Main {  
    public static void main (String args[])  
    {  
        Scanner sc = new Scanner (System.in);  
    }  
}
```



```

System.out.println("Enter the account
you want to open: \n2) saving account \n2)
Current Account \n Your choice: ");
int choice = sc.nextInt();
if (choice == 2) {
    savAcct act = new SavAcct();
    while(true) {

```

```

        S.O.P ("Enter the transaction you
would like to do: \n1) Deposit \n2)
withdrawal \n3) Maintain balance for
Interest \n4) Display balance \n Your choice: ");
        choice = sc.nextInt();
        switch (choice) {

```

```

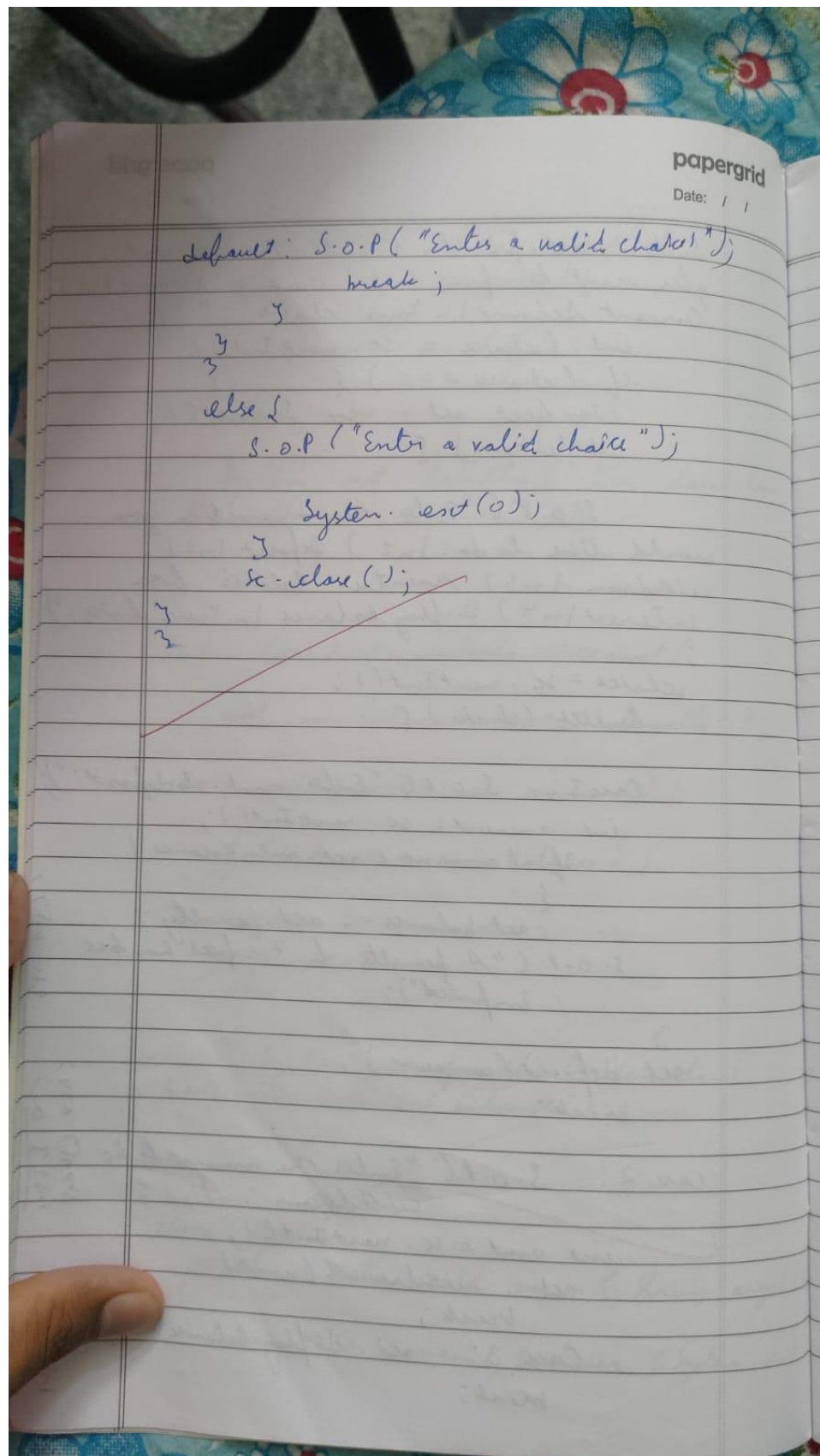
            Case 1: S.O.P ("Enter amt. to deposit: ");
            int amount = sc.nextInt();
            if (amount < act.minBalance) {
                act.balance -= act.penalty;
                S.O.P ("A penalty of 2 rupees has been
imposed");
            }
            act.deposit(amount);
            break;

```

```

            Case 2: S.O.P ("Enter the amount to be
withdrawn: ");
            int amt = sc.nextInt();
            act.withdrawal(amt);
            break;
            Case 3: act.DisplayBalance();
            break;

```





## OUTPUT:

```
Command Prompt
Compound interest is 1.945779834454954E72
Enter the amount to be withdrawn
56
Withdrawn : 56.0
Current balance : 4011.0

C:\Users\samri\Desktop\java lab>javac sample.java
sample.java:2: error: class Exception is public, should be declared in a file named Exception.java
public class Exception {
      ^
1 error

C:\Users\samri\Desktop\java lab>javac sample.java

C:\Users\samri\Desktop\java lab>java Exception
Enter the 1st value
23
Enter the 2nd value
7
The first value is 23
The Second value is 7
Result of division is 3.0
Finished the Execution

C:\Users\samri\Desktop\java lab>java Exception
Enter the 1st value
1a
Enter the 2nd value
5
NumberFormatException: Invalid input string
Finished the Execution

C:\Users\samri\Desktop\java lab>java Exception
Enter the 1st value
56
Enter the 2nd value
0
The first value is 56
The Second value is 0
We failed ot divide.Reason is..
java.lang.ArithmeticException: / by zero
Finished the Execution

C:\Users\samri\Desktop\java lab>
```

## **PROGRAM 6**

**Write a program that creates a user interface to perform integer divisions. The user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num2 is displayed in the Result field when the Divide button is clicked. If Num1 or Num2 were not an integer, the program would throw a `NumberFormatException`. If Num2 were Zero, the program would throw an `ArithmeticException`. Display the exception in a message dialog box.**

week 6

```
import java.util.Scanner;
```

```
class Main {
```

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

```
        System.out.println("We will perform division  
now:");
```

```
        Scanner sc = new Scanner(System.in);
```

```
        try {
```

```
            System.out.print("\nEnter the  
Divident:");
```

```
            int num1 = Integer.parseInt(sc.next());
```

```
            S.O.P("Enter the Divisor:");
```

```
            int num2 = Integer.parseInt(sc.next());
```

```
            double result = (double)num1/num2;
```

```
            S.O.P("The quotient is: " + result);
```

```
        } catch (NumberFormatException e) {
```

```
            Sys.O.P("Enter a valid Integer" + e + "\n");
```

```
        } catch (ArithmeticException e) {
```

```
            S.O.P("Can't perform " + e + "\n");
```

```
        }
```

```
        sc.close();    S.O.P("After Try Catch");
```

```
    }
```

```
}
```

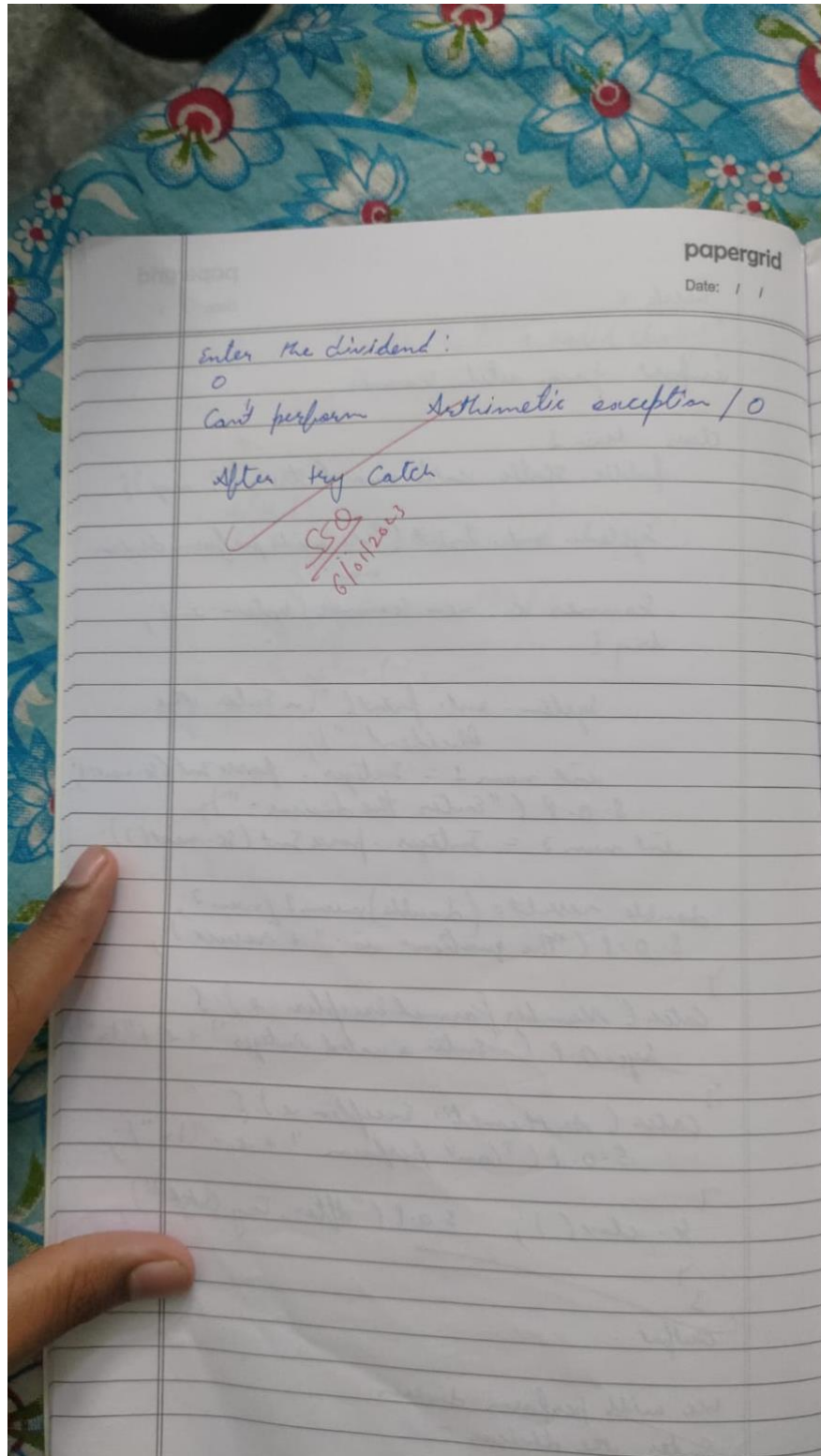
```
Output
```

We will perform division

Enter the Divisor:

5







## OUTPUT:

```
Command Prompt
Compound interest is 1.945779834454954E72
Enter the amount to be withdrawn
56
Withdrawn : 56.0
Current balance : 4011.0

C:\Users\samri\Desktop\java lab>javac sample.java
sample.java:2: error: class Exception is public, should be declared in a file named Exception.java
public class Exception {
      ^
1 error

C:\Users\samri\Desktop\java lab>javac sample.java

C:\Users\samri\Desktop\java lab>java Exception
Enter the 1st value
23
Enter the 2nd value
7
The first value is 23
The Second value is 7
Result of division is 3.0
Finished the Execution

C:\Users\samri\Desktop\java lab>java Exception
Enter the 1st value
1a
Enter the 2nd value
5
NumberFormatException: Invalid input string
Finished the Execution

C:\Users\samri\Desktop\java lab>java Exception
Enter the 1st value
56
Enter the 2nd value
0
The first value is 56
The Second value is 0
We failed ot divide,Reason is..
java.lang.ArithmeticException: / by zero
Finished the Execution

C:\Users\samri\Desktop\java lab>
```

## **PROGRAM 7**

**Write a program that demonstrates handling of exceptions in inheritance tree. Create a base class called “Father” and derived class called “Son” which extends the base class. In Father class, implement a constructor which takes the age and throws the exception WrongAge( ) when the input age<0. In Son class, implement a constructor that cases both father and son’s age and throws an exception if son’s age is >=father’s age.**

## Wrong age Exception

```

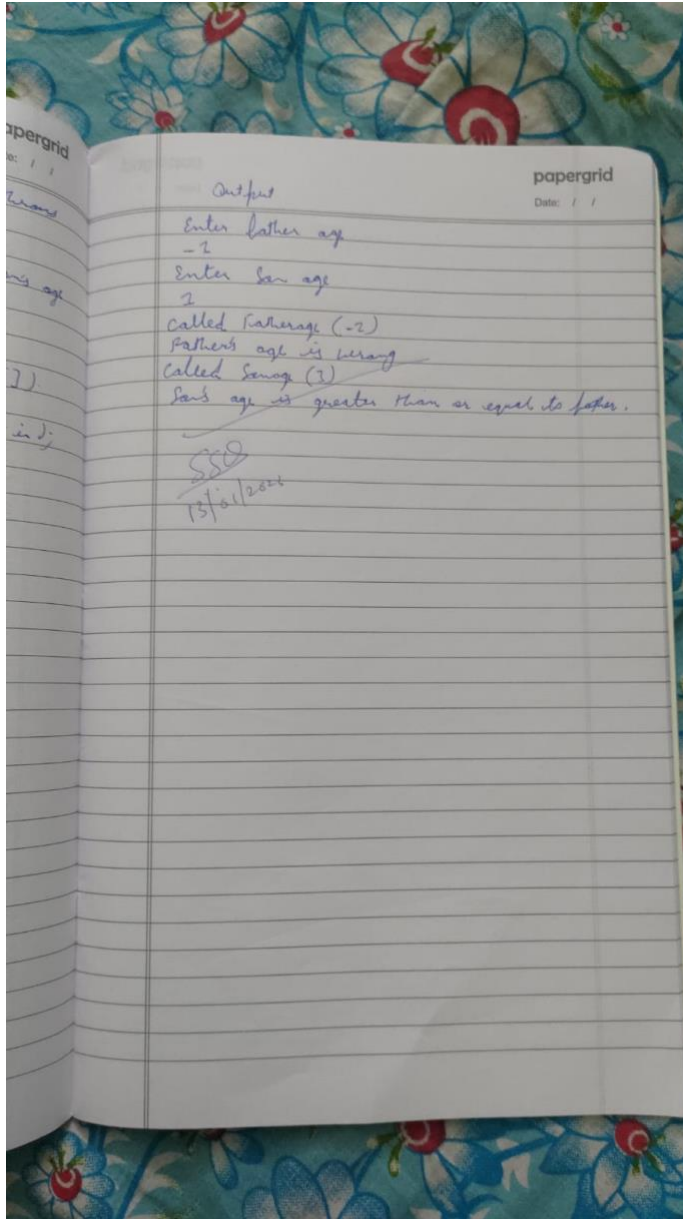
import java.util.Scanner;
class Father extends Exception {
    int age;
    Father (int x)
    {
        age = x;
    }
    public String toString() {
        return "Father's age is Wrong";
    }
}

class Son extends Father {
    int age;
    Son (int x, int y)
    {
        super (x)
        age = y;
    }
    public String toString() {
        return "Son's age is greater than or equal  
to father";
    }
}

class Wrongage {
    static int x, y;
    static void Fatherage (int x) throws Father
    {
        System.out.println ("Called Fatherage (" + x + ")");
        if (x < 0)
            throw new Father(x);
        System.out.println ("Normal exit fathers  
age is " + x);
    }
}

```

public void Savage (int x, int y) throws  
 Son  
 {  
 System.out.println ("Mammal and Son's age  
 is " + y);  
 }  
 public static void main (String args[])  
 {  
 Scanner input = new Scanner (System.in);  
 S.O.P ("Enter father age");  
 x = input.nextInt();  
 S.O.P ("Enter Son age");  
 y = input.nextInt();  
 try {  
 fatherage(x);  
 }  
 catch (father.e)  
 {  
 S.O.P(x);  
 }  
 try {  
 Savage(x, y);  
 }  
 catch (Son.e)  
 {  
 S.O.P(y);  
 }  
 }  
 }



OUTPUT:

```
Command Prompt
Exception1.java:21: error: constructor Object in class Object cannot be applied to given types;
super(agef);
^
  required: no arguments
  found:    int
  reason: actual and formal argument lists differ in length
1 error

C:\Users\samri\Desktop\java lab>javac Exception1.java
Exception1.java:21: error: constructor Object in class Object cannot be applied to given types;
super(agef);
^
  required: no arguments
  found:    int
  reason: actual and formal argument lists differ in length
1 error

C:\Users\samri\Desktop\java lab>javac Exception1.java

C:\Users\samri\Desktop\java lab>java Exception1
Enter the Father's Age
45
Enter the Son's Age
12
Father age:45
Son's age:12

C:\Users\samri\Desktop\java lab>java Exception1
Enter the Father's Age
0
Enter the Son's Age
23
Exception in thread "main" Wrong age! Please enter the Right age
    at Exception1.main(Exception1.java:39)

C:\Users\samri\Desktop\java lab>java Exception1
Enter the Father's Age
6
Enter the Son's Age
78
Exception in thread "main" Wrong age! Please enter the Right age
    at Exception1.main(Exception1.java:39)

C:\Users\samri\Desktop\java lab>
```

Activate Windows  
Go to Settings to activate Windows.

## **PROGRAM 8**

**Write a program which creates two threads, one thread displaying “BMS College of Engineering” once every ten seconds and another displaying “CSE” once every two seconds**



## Appendix 2

### Inter Thread Communication :

Class A

int n;

boolean valueSet = false;

Synchronized int get() {

while (!valueSet)

{

wait();

}

Catch (InterruptedException) {

System.out.println("InterruptedException

caught");

}

System.out.println("Get: " + n);

valueSet = true;

notify();

return n;

}

Synchronized void put(int n) {

while (valueSet)

{

wait();

}

Catch (InterruptedException e) {

System.out.println("InterruptedException

caught");

}

this.n = n;

valueSet = true;

```
System.out.println("Put: " + n);
notify();
}
```

```
// end of class Q
```

```
class Producer implements Runnable {
```

```
Q q;
```

```
Producer(Q q) {
```

```
this.q = q;
```

```
new Thread(this, "Producer").start();
```

```
{
    public void run() {
```

```
        int i = 0;
```

```
        while(true) {
```

```
            q.put(i++);
```

```
        }
```

```
}
class Consumer implements Runnable {
```

```
Q q;
```

```
Consumer(Q q) {
```

```
this.q = q;
```

```
new Thread(this, "Consumer").start();
```

```
{
    public void run() {
```

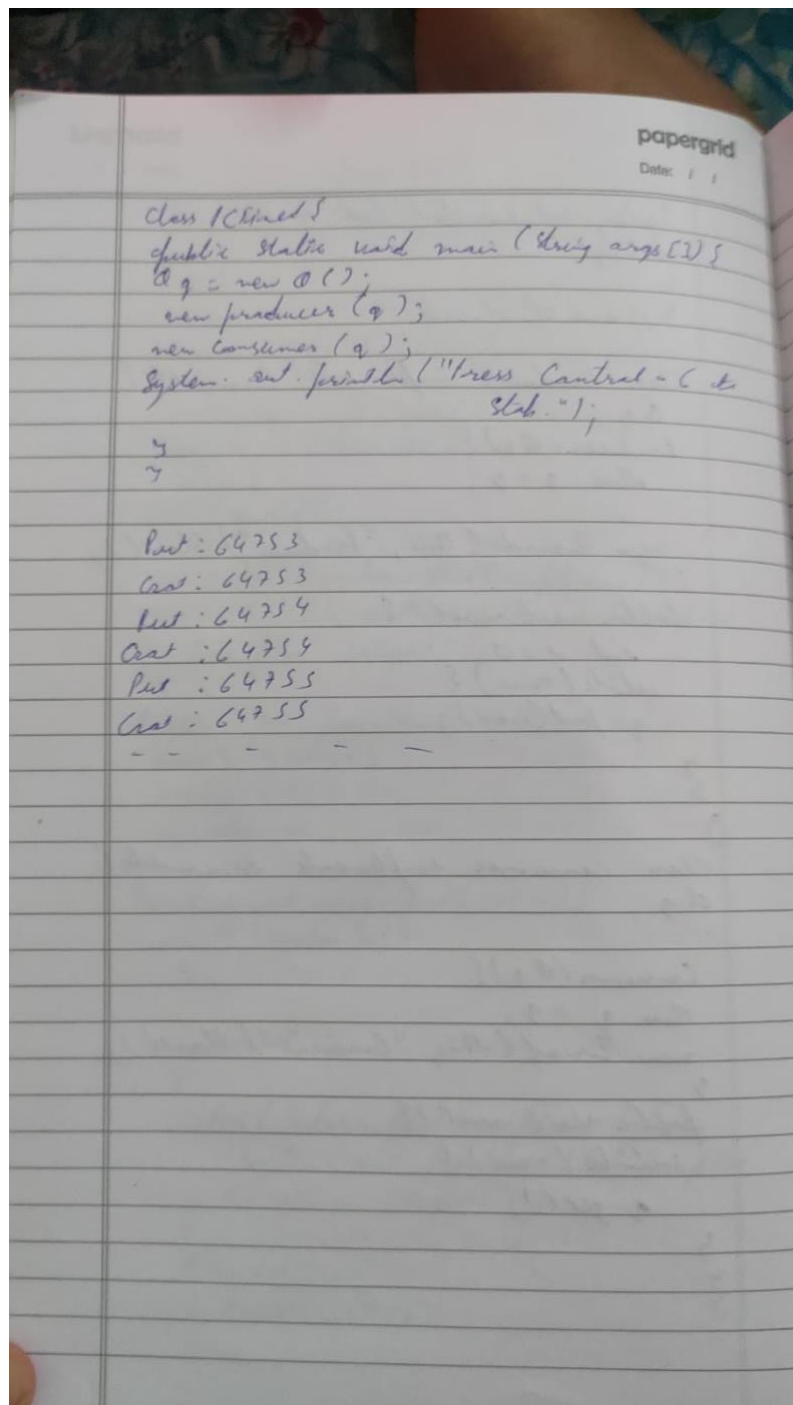
```
        while(true) {
```

```
            q.get();
```

```
        }
```

```
}
```

```
}
```



## OUTPUT:

```
Put: 24804
Got: 24804
Put: 24805
Got: 24805
Put: 24806
Got: 24806
Put: 24807
Got: 24807
Put: 24808
Got: 24808
Put: 24809
Got: 24809
Put: 24810
Got: 24810
Put: 24811
Got: 24811
Put: 24812
Got: 24812
Put: 24813
Got: 24813
Put: 24814
Got: 24814
Put: 24815
Got: 24815
Put: 24816
Got: 24816
Put: 24817
Got: 24817
Put: 24818
Got: 24818
Put: 24819
```

## 9. Packages

Openended 2.

File 2

```

package cse;
import java.util.Scanner;

public class Student {
    String name = new String();
    String User = new String();
    int sem;
    public Student() {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter your name:");
        name = s.next();
        System.out.println("Enter your User:");
        User = s.next();
        System.out.println("Enter your sem:");
        sem = s.nextInt();
    }
}

```

File 2

```

package cse;
import java.util.Scanner;
import cse.Student;

public class Internal extends Student {
    protected float marks[7] = new float[5];
    public Internal() {
        Scanner ss = new Scanner(System.in);
        for (int i = 0, i < 5; i++) {

```



```
S.O.P("Enter Subject " + (i+2) + "Internal
marks");
```

```
marks[i] = ss.nextInt();
}
```

```
}
```

File 3

```
package sc;
import java.util.Scanner;
import java.util.*;
import java.io.*;
```

```
public class external extends internal
{
```

```
float marks2[] = new float[5];
```

```
public external() {
```

```
Scanner ss = new Scanner(System.in);
for (int i = 0; i < 5; i++) {
```

```
System.out.println("Enter Subject " + (i+2)
+ "External marks");
```

```
marks2[i] = ss.nextFloat();
```

```
}
```

```
}
```

```
public void calc() {
```

```
for (int i = 0; i < 5; i++) {
```

```
S.O.P("Sum of Internal and External
marks for Subject " + i + " is " + (marks[i]
+ marks2[i]));
```

```
}
```

```
}
```

papergrain  
Date: / /

4

12/12/2020

```

import java.util. Scanner;
import java. internal;
import java. student;
import java. external;

class jmain {
    public static void main (String x[]) {

        Scanner s = new Scanner (System.in);
        internal b1 = new internal();
        b1 = calc();
    }
}

```

output

Enter your sem;

3

Enter Subject 1 Internal marks

48

Enter Subject 2 Internal marks

50

— — 3 — —

47

— — 4 — —

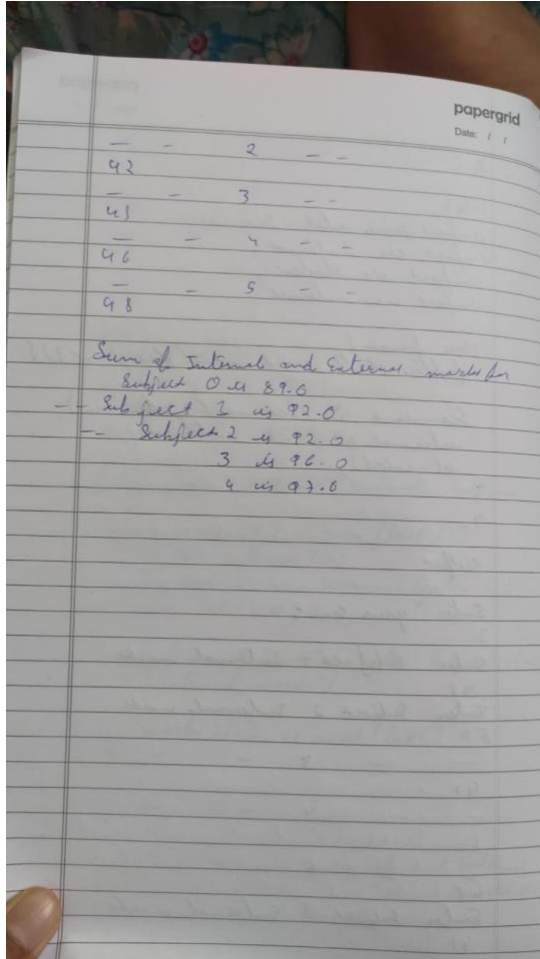
50

— — 5 — —

49

Enter Subject 1 Internal marks

41



Output:

