## Lab Program 1:

Develop a Java program that prints all real solutions to the quadratic equation ax2 + bx + c = 0. Read in a, b, c and use the quadratic formula. If the discriminant b2-4ac is negative, display a message stating that there are no real solutions.

	Date
	Quadratic equation
	import java util Sanner;
	10
	public static void main (string[] angs)?
	Scanner scanner = new Scanner (System.in)
	public class Main of public static void main (string[] ange) of Scanner scanner = new Scanner (System.in);  System out, println ("Enter three integers:");
	intabe;
3/1	a = Scanner next Int ();
	b= scanner. next (nt();
	C= scanner next Int ();
	double dis;
	dis: Math. sqst (b*b -4*a*c);
	if / 4: 20)
	if (dis >0)
	double host 1 nost 2;
	not 1 = (-b+dis)/(2.0*a);
	not 2 = (-b-dis)/(2.0 *a);
	System out print on in The growth age gest a 1 life + a)
	their values are "+ root!" and "+ root 2);
	7,
	else if (dis = = 0)
	2
	double rost
	900t = -b/(20*a);
	System out point in ["The nosts are real and equal and their value is equal to "+ apost).
-	their Value is equal to "+ root);
	else
-	System out print In ("No real solutions")
	2
	1
-	

```
Enter three integers:
  15
 The roots are real and distinct
 and their values are-3.0 and -5.
 ... Program finished with exit co
 Press ENTER to exit console.
                               0
 Enter three integers:
 1
 2
The roots are real and equal and
Q their value is equal to -1.0
 ... Program finished with exit co
 de 0
 Press ENTER to exit console.
Enter three integers:
No real solutions.
 ... Program finished with exit co
de 0
Press ENTER to exit console.
```

```
Online Java Compil...
onlinegdb.com

Cine Java Compiler.
Run and Debug java program online.
and press "Run" button to execute it.

(2.0 a);
(2.0 a);
(2.0 a);
"The roots are real and distinct and their values are root! and root2)

The roots are real and equal and their value is equal to root);
"No real solutions.");
```

## 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 the SGPA of a student.

```
import java.util.Scanner;
closs Student
     private String usn;
private String name;
private int[] credits;
private int[] marks;
private int sum=0;
private double cgpa;
private int n=0;
     public void setUsn(
                                         usn) {
     name) {
     public void setCredits(int[] credits) {
   this.credits = credits;
     public void setMarks(int[] marks) {
   this.marks = marks;
     void display()
{
                   .out.println("Name:""name);
.out.println("USN" usn);
.out.println("Credits of each subject:");
          for(int i=0;i=credits.length;i=+)
                        ..out.println(credits[i]);
                n - credits[i];
           System.out.println("Marks of each subject:");
for(int i=0;i=marks.length;i**)
                         .out.println(marks[i]);
        oid cal_sgpa()
           for(int i=0;i marks.length;i++)
                 if(marks[i] = 90)
                sum += credits[i]*10;
else if(marks[i]>=80 88 me
                                               marks[i] 90)
                sum += credits[i]*9;
else if(marks[i]>=70 && marks[i]<80)
                               credits[i] 8;
                     Sum 3
                else if(marks[i]>=60
                                                 marks[i] 70)
                      sum -= credits[i] 7;
                       if(marks[i]>
                                                 marks[i] 60)
                sum credits[i] 6;
                clse if(marks[i]=40 && marks[i]=50)
sum += credits[i]*5;
                      sum ... credits[i] 0:
           sgpa sum 1.0/n:
```

```
public void setCredits(int[] credits) {
    this.credits = credits;
public void setMarks(int[] marks) {
   this.marks = marks;
               word display()
                            ..out.println("Name:"+name);
..out.println("USN"+usn);
..out.println("Credits of each subject:");
                     for(int i=0;i=credits.length;i++)
                         System.out.println(credits[i]):
n += credits[i];
                    System.out.println("Marks of each subject:"):
for(int i=0:i=marks.length:i++)
                                  .out.println(marks[i]);
                  oud cal_sgpa()
                     for(int i=0;i marks.length;i++)
                          ::(marks[i]--90)
                          sum == credits[i]*10;
else if(marks[i]>80 85 marks[i]<90)
sum == credits[i]*9;
else if(marks[i]>70 85 marks[i]*80)
                          sum == credits[i]*8;
else if(marks[i]==50 && marks[i]=70)
                          sum == credits[i]*7;
else if(marks[i]>=50 && marks[i]<60)
                          sum == credits[i]*6;
else if(marks[i]=40 %% marks[i]=50)
sum == credits[i]*5;
                               sum == credits[i]*0;
                    sgpa = sum*1.0/n;
brites.out.println("SGPA:"*sgpa);
         }
public class Main
               public static void main(String args[])
                   marks[i] sc.nextInt();
                   }
Student s " riew Student();
s.setUsn("18W19CS019");
s.setName("Ananth G Prabhu");
s.setMarks(marks);
                    s.setCredits(credits);
                   s.display();
s.cal_sgpa();
```

```
input
          V X 3
Welcome,
         PHYSICS:78
Ananth G
         EM-2:89
 Prabhu
         EME: 45
         CCP:87
 Forked
         ECE: 93
from Ooj
         Name: Ananth G Prabhu
 Create
         USN1BM19CS019
  New
         Credits of each subject:
 Project
  My
Project
Classroc
  new
         Marks of each subject:
 Learn
About • FAQ 89
 · Blog ·
 Terms of
         87
  Use •
         93
Contact Us SGPA: 8.1
 • GDB
Tutorial •
 Credits .
         ...Program finished with exit co
 Privacy
                                              0
         de 0
© 2016 -
         Press ENTER to exit console.
2020 GDB
```

```
Calculation of SC.PA
import java, util . Scanner;
class Student
 private String usn;
 phivate String name;
 private int[] chedits;
 phivate int[] marks;
 private int sura = 0;
 private double sapa;
 public void set Usn String usn) of
 this ugn = usn;
 public void Set Name (String, name) of
 this name = name;
 public void Set Credits (int[] (Sedits) of
  this credits = crediti;
  public void set Marks (int[] marks) &
  this marks = marks:
  void display()
 System. out. Print (n "hame: "+ name)
 System out print In ["USN" 7USn)
 System out printly " credits of each subject.");
  for lint i=0; ic credits. length; i++)
 System. out. print |n (credits[i]);
nt = credits[i];
```

Scanner SC = new Scanner (System.in);

int [] Credits = new int [] (5,4,4,4,3);

String[] Subject = new String []

String[] Subject = new String []

int [] marks = new int [credits length];

for (int i = 0; ic credits length; i++)

System.out.print [Subject [i]+ (2.3));

marks[i] = SC. next [nt ();

Student S = new Student();

S. Set Usn ["BM19CSO17");

S. Set Name ["ANANTH G Prabbu");

S. Set marks [marks);

S. set Credits [credits];

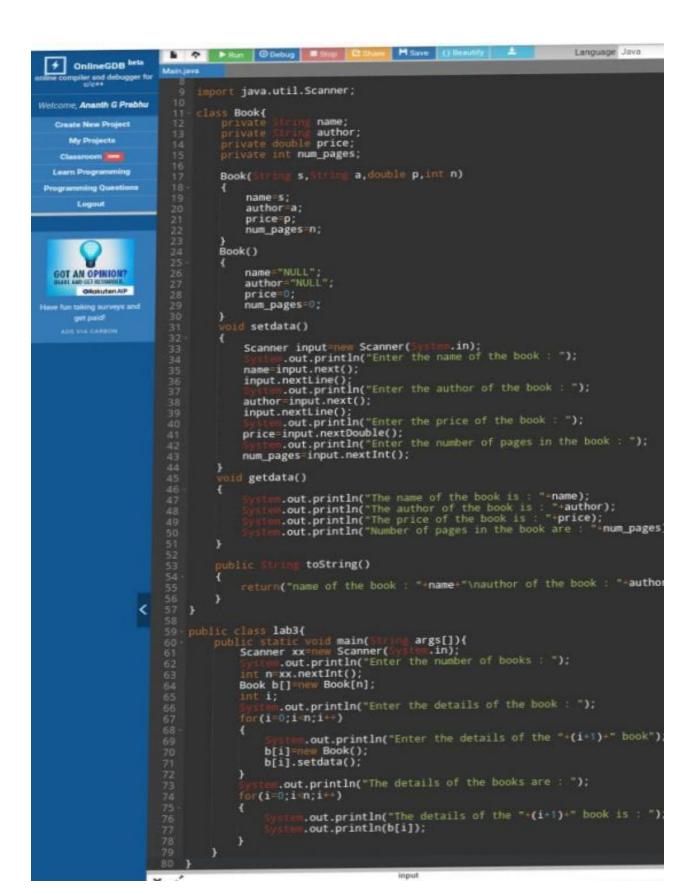
S. display();

S. cal - sgpa ();

y

## Lab 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.



```
name);
'-author);
price);
pre: "+num_pages);
ne book : "+author+"\nprice of the book : "+price+"\nnumber of pages in the book
```

Enter the number of books:2
Enter book name:ABC of Life
Enter author's name:Ananth G Prabhu
Enter price of book:
250
Enter the number of pages of book:10
BOOK DETAILS
Book name: ABC of Life
Author:Ananth G Prabhu
Price:250.0
Number of Pages:10
Enter book name:XYZ
Enter author's name:Guru
Enter price of book:50
Enter the number of pages of book:200
BOOK DETAILS
Book name:XYZ
Author: Guru
Price:50.0
Number of Pages: 200
Program finished with exit code 0
Press ENTER to exit console.

BOOK JAVA CODE
import java. util. Scanner;
class Book
£ 1 0:
phivate String book grame;
private Strang author;
private double price; private int no- of pages;
passed the total page.
Book (String s, String a, double p, int n)
name=S; author=a;
phice =p;
num-pages=n;
9
Book ()
name = ""NOLL";
= author = "NULL";
phice = 0;
num-pages=0;
void Sotdatal)
Scanner imput = new Scanner (system in); System out print[n("Enter the name of the book:"),
no me = int put. next ();
input. next line 1:
System out print on (" Ender the author of the book :");
in at most line 1).
System.out. println("Enter the price of the book:");

paicl = input next Double ); System out printly [ cotalor the number of pages in the book : ") num pages = input next Int (); void get data () System out print no The name of the book is: 22 + name System. out print on "The author of the book is :"+ author). System out point ("The price of the book is:"+ price); 3 stem out print [n] con Number of pages in the book are: "+num-page public String to String roturn "name of the book: " + name +" nouthor of the book: "+author+" | on price of the book . " + price+ number of pages in the book: "therem pages) public static void main (string args (1) of " Enter the number of books. int n= xx next (nt (); Book b[] = new Book [n], System.out. println ("Enton the details of the" +(1+1)160 took book: "); System. out. print In [" Enter the details of the" + (i+1)+" book") ofi)= new Book () b[i] setdata ).

LAB 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

```
week8a - Notepad
File Edit Format View Help
       public void print_area()
                area tri=(geta()*getb())/2;
                System.out.println("The area of triangle is:"+area tri);
class circle extends shape
1
       private double area circle;
       circle(int y)
                setshape(0,y);
        public void print_area()
                area_circle=((3.14)*getb()*getb());
                System.out.println("Area of circle is: "+area_circle);
public class week8a
       public static void main(String[]args){
                Scanner xx=new Scanner(System.in);
                int a,b;
                System.out.println("Enter the length of rectangle : ");
                a=xx.nextInt();
                System.out.println("Enter the breadth of rectangle : ");
                b=xx.nextInt();
                rectangle r= new rectangle(a,b);
                r.print area();
                System.out.println("Enter the height of triangle : ");
                a=xx.nextInt();
                System.out.println("Enter the base of triangle : ");
                b=xx.nextInt();
                triangle t= new triangle(a,b);
                t.print_area();
                System.out.println("Enter the radius of circle : ");
                a=xx.nextInt();
                circle c= new circle(a);
                c.print_area();
```

```
:\Users\anant\JAVA A>javac week8a.java
:\Users\anant\JAVA A>java week8a
Enter the length of rectangle :
Enter the breadth of rectangle :
Area of rectangle is:18
Enter the height of triangle :
Enter the base of triangle :
The area of triangle is:13.0
inter the radius of circle :
Area of circle is:12.56
:\Users\anant\JAVA A>
```

Abstract class of Shapes import java util Scanner; boteset class shape; private int a b; void set shape (int x, int y) q=x; int getb() return b; abstract public void print area (); private int area rect; reclargle (inl x, int y) area\_rect = get a() \* get b();

' System.out. print(n. (co Area of rectangle:"+ area\_rect);

class briangle extends shape triangle ( intx, inty Orea tri= (get al)\* get bl) /2; System. out. print(r ("The area of triangle is:"tarea tri) class circle extends shape private double area-circle; set shape (0, y); area-circle = ((3 19)\* got b()\* got b()); System.out. print(n ("Area of Circle is:" tarea-circle public class week 8a public static void main (string [Jargs) {
Scanner XX= new Scannel (system in); System out sint (" Enter the length of rectangle a=xx. next Int ();

```
week8a - Notepad
File Edit Format View Help
import java.util.Scanner;
abstract class shape
        private int a,b;
        void setshape(int x,int y)
                a=x;
                b=y;
        int geta()
                return a;
        int getb()
                return b;
        abstract public void print area();
class rectangle extends shape
        private int area_rect;
        rectangle(int x, int y)
                setshape(x,y);
        public void print_area()
                area rect=geta()*getb();
                System.out.println("Area of rectangle is:"+area_rect);
        }
class triangle extends shape
       private double area tri;
        triangle(int x, int y)
                setshape(x,y);
       public void print_area()
                area_tri=(geta()*getb())/2;
```

system out println ("Inter the breadth of roctangle"); rectargle r= new rectargle (a, b); System. out, println (" Enter the height of triangle:"); a=xx.next Int(); System out print (on ("Enter the base of triangle:"); b=xx. next Int (); triangle t = new triangle (a,b); System. out. print(n("toter the radius of circle:"); a= xx. nex+ Int(); circle = new circle (a); c. print\_area();

## LAB 5

6.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 Curr-acct and Sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks: • Accept deposit from customer and update the balance. • Display the balance. • Compute and deposit interest • Permit withdrawal and update the balance • Check for the minimum balance, impose penalty if necessary and update the balance

```
week8b - Notepad
File Edit Format View Help
import java.util.Scanner;
class Account
        private String name;
        private double account no;
        private char account_type;
        private double balance;
        void getdata(char ch)
                Scanner xx=new Scanner(System.in);
                System.out.print("Enter the name of the customer : ");
                name=xx.next();
                xx.nextLine();
                System.out.print("Enter the account number of the customer: ");
                account_no=xx.nextDouble();
                System.out.print("Enter the balance of the customer : ");
                balance=xx.nextDouble();
                account_type=ch;
        void updatebalance(double x)
                balance-balance+x;
        void updatebalance1(double x)
                balance=balance-x;
        double getbalance()
                return balance;
        void displaybalance()
                System.out.println("The balance is : "+balance);
        )
1
class Saving Account extends Account{
        private double interest_rate;
       Type here to search
                                                   0
                                                         Ħ
```

```
week8b - Notepad
File Edit Format View Help
class Saving_Account extends Account{
       private double interest_rate;
       Saving_Account()
                Scanner xx=new Scanner(System.in);
                getdata('5');
               System.out.print("Enter the interest rate : ");
interest_rate=xx.nextDouble();
       }
       void getdeposit()
                Scanner xx=new Scanner(System.in);
                System.out.print("Enter the amount to be deposited : ");
                double x=xx.nextDouble();
               updatebalance(x);
       void computeinterest()
                double x=(getbalance()*interest_rate)/100;
               updatebalance(x);
                System.out.println("The computed interest is: "+x);
               displaybalance();
       void withdrawl()
                System.out.print("Enter the amount to be withdrawn: ");
                Scanner xx=new Scanner(System.in);
                double x=xx.nextDouble();
                while(x>getbalance())
                       System.out.println("The amount withdran is more than the balance enter again : ");
                       x=xx.nextDouble();
                updatebalance1(x);
               displaybalance();
       )
}
class Current_Account extends Account{
       private double min_balance;
      O Type here to search
                                                  〇 計 🦷 😍 🛍 宜 💆 💠 👩 த
```

```
week8b - Notepad
File Edit Format View Help
class Current_Account extends Account{
       private double min_balance;
private int cheque_book;
       Current_Account()
       {
                Scanner xx-new Scanner(System.in);
                getdata('C');
                System.out.print("Enter the minimum balance : ");
                min_balance-xx.nextDouble();
       void getdeposit()
                Scanner xx=new Scanner(System.in);
                System.out.print("Enter the amount to be deposited : ");
                double x=xx.nextDouble();
                updatebalance(x);
        void issuecheck()
                Scanner xx-new Scanner(System.in);
                System.out.print("Enter the amount of the check : ");
                double x=xx.nextDouble();
                if(x>(getbalance()-min_balance))
                        System.out.println("You have issued check of more than the minmum balance and you have been charged the penalty of 100 rupees");
                        updatebalance1(100);
                else
                        updatebalance1(x);
                displaybalance();
        void withdrawl()
                System.out.print("Enter the amount to be withdrawn : ");
                Scanner xx=new Scanner(System.in);
                double x=xx.nextDouble();
                while(x>(getbalance()-min_balance))
                                                                                                                                                1-1 (-11
```

```
week8b - Notepad
File Edit Format View Help
                  double x-xx.nextDouble();
                  while(x>(getbalance()-min_balance))
                           System.out.println("The amount withdran is more than the balance enter again: ");
                           x=xx.nextDouble();
                  updatebalance1(x);
                  displaybalance();
         }
}
public class week8b
         public static void main(String args[])
                  Scanner input=new Scanner(System.in);
                  char ch;
                  System.out.println("Ebter the type of account you want (C/S): ");
                  ch-input.next().charAt(0);
                  if(ch=='S'||ch=='s')
                           Saving Account s=new Saving Account();
                           int x=1;
                           while(x1=0)
                                    System.out.println("Enter 0 for exit : ");
System.out.println("Enter 1 for deposit : ");
System.out.println("Enter 2 for balance enquiry : ");
System.out.println("Enter 3 to claculate interest : ");
                                    System.out.println("Enter 4 for withdrawl : ");
x=input.nextInt();
                                    if(x==0)
                                                       break;
                                    else if(x==1)
                                             s.getdeposit();
                                    else if(x==2)
                                             s.displaybalance();
                                    else if(x==3)
                                                                      Type here to search
                                                         0
```

```
week8b - Notepad
File Edit Format View Help
                                           s.displaybalance();
                                   else if(x==3)
                                           s.computeinterest();
                                   else if(x==4)
                                           s.withdrawl();
                                   }
                          }
                 else
                          Current_Account s=new Current_Account();
                          int x=1;
                          while(x!=0)
                                  System.out.println("Enter 0 for exit : ");
System.out.println("Enter 1 for deposit : ");
                                   System.out.println("Enter 2 for balance enquiry : ");
                                   System.out.println("Enter 3 to apply for cheque : ");
                                   System.out.println("Enter 4 for withdrawl: ");
                                   x=input.nextInt();
                                   if(x==0)
                                                    break;
                                   else if(x==1)
                                           s.getdeposit();
                                   else if(x==2)
                                           s.displaybalance();
                                   else if(x==3)
                                           s.issuecheck();
                                   else if(x==4)
                                           s.withdrawl();
```

```
week8b - Notepad
File Edit Format View Help
                               else if(x==4)
                                       s.withdrawl();
                        }
                else
                        Current_Account s=new Current_Account();
                        int x=1:
                       while(x1=0)
                        1
                               System.out.println("Enter 0 for exit : ");
                               System.out.println("Enter 1 for deposit : ");
                               System.out.println("Enter 2 for balance enquiry : ");
                               System.out.println("Enter 3 to apply for cheque : ");
                               System.out.println("Enter 4 for withdrawl: ");
                               x=input.nextInt();
                               if(x==0)
                                               break;
                               else if(x==1)
                                       s.getdeposit();
                               else if(x==2)
                                       s.displaybalance();
                               else if(x==3)
                                       s.issuecheck();
                               else if(x==4)
                                       s.withdrawl();
                      }
          }
      }
}
```

```
Command Prompt
Microsoft Windows [Version 10.0.19041.572]
(c) 2020 Microsoft Corporation. All rights reserved.
:\Users\anant>cd JAVA A
C:\Users\anant\JAVA A>javac week8b.java
 :\Users\anant\JAVA Abjava week8b
bter the type of account you want (C/S) :
Enter the name of the customer : Ananth G Prabhu
Enter the account number of the customer: 1575855255
Enter the balance of the customer : 6000
inter the minimum balance : 2000
inter 0 for exit :
enter 1 for deposit :
Enter 2 for balance enquiry :
Enter 3 to apply for cheque :
Enter 4 for withdrawl :
inter the amount to be deposited : 5778
Enter 0 for exit
Enter 1 for deposit :
Enter 2 for balance enquiry :
Enter 3 to apply for cheque :
Enter 4 for withdrawl :
The balance is : 11778.0
Enter 8 for exit
Enter 1 for deposit :
Enter 2 for balance enquiry :
Enter 3 to apply for cheque :
Enter 4 for withdrawl :
Enter the amount of the check : 3800
The balance is : 7978.0
Enter 0 for exit
Enter 1 for deposit :
Enter 2 for balance enquiry :
Enter 3 to apply for cheque :
Enter 4 for withdrawl :
Enter the amount to be withdrawn : 900
The balance is : 7078.0
Enter 0 for exit :
Enter 1 for deposit :
Enter 2 for balance enquiry :
Enter 3 to apply for cheque :
Enter 4 for withdrawl :

    D Type here to search

                                                       0 1
```

```
Command Prompt
Ebter the type of account you want (C/S) :
nter the name of the customer : ANANTH G PRABHU
inter the account number of the customer : 6879541230
nter the balance of the customer : 500
inter the interest rate : 4
nter 0 for exit :
inter 1 for deposit :
inter 2 for balance enquiry :
inter 3 to claculate interest :
nter 4 for withdrawl :
nter the amount to be deposited : 6000
nter 0 for exit :
inter 1 for deposit :
inter 2 for balance enquiry :
inter 3 to claculate interest :
inter 4 for withdrawl :
The balance is : 6500.0
inter 0 for exit :
inter 1 for deposit :
inter 2 for balance enquiry :
inter 3 to claculate interest :
inter 4 for withdrawl :
The computed interest is: 260.0
he balance is : 6760.0
nter 8 for exit :
inter 1 for deposit :
inter 2 for balance enquiry :
inter 3 to claculate interest :
inter 4 for withdrawl :
inter the amount to be withdrawn : 6600
he balance is : 160.0
inter 0 for exit
inter 1 for deposit :
nter 2 for balance enquiry :
nter 3 to claculate interest :
nter 4 for withdrawl :
inter the amount to be withdrawn : 100
he balance is : 60.0
inter 0 for exit :
nter 1 for deposit :
inter 2 for balance enquiry :
inter 3 to claculate interest :
nter 4 for withdrawl :
  Type here to search
                                                                Ħ
```

	A Date
	Savings Account and airent account
	import java util Scanner;
	chara Account
- 9	3
	private. String name;
	private double account no;
	private char account type;
	private double balance;
	void get data (char ch)
	<i>€</i>
10	Scanner XX = new Scanner ( system in):
-	System.out. print ("Enter the name of the customer:
-	name = xx. next ();
	xx.nextline();
-	System out print ("Enter the account number of customer")
15	account _no = XX next Double ()
-	System, out print (" Enter the balance of the customer: ").
-	balance = xx rest Double ():
-	account type = ch;
-	4
E	goid update balance (double x)
-	
-	balance = balance + x;
1	4
-	void update balance I (double x)
-	balance = balance -x;
	· ·
	double getbalance()
	d .
20	return balance;
	void displaybalance()
	5
At a second	

System.out. println ("The balance is: " + balance); class Saving-Account extends Accounts private double interest - rate: Saving - Account() Scanner (System in); get data ('s'); system out print (" Enter the interest rate: "); interest\_rate = xx.next Double () void getdeposit () Scanner XX = new Scanner (system in); System out print ("Ender the amount to be deposited:") double x = xx. next Double (); update balance (x); void compute interest ( double x = (get balance () \* interest - rate)/100; System. out println ("The computed interest is: " +x); updatebalance (x), display balance () "Hunrahtier biece System out paint (" Enter the amount to be withdrawn:"); Scanner XX = new Scanner (System. in): double x = xx, next pouble (). while (x>got balance ())

```
System out pointly ("The amount withdraw
the balance ently again: ");
X= XX, next Derible ()
apolate balance! (x);
displaybalance();
class current-Account extends Account of
private double min-balance;
 philate int cheque book,
 Cussent - Account ()
  Scanner XX = new Scanner (Cystern in);
  getdata ( "c');
system out print ("Inter the minimum balance:");
 min_balance = XX. nextDouble ()
( ) ( )
 Scanner XX = new Scanner (System.in);
System. out, shint ("triter the amount to be deforited")
   double x = xx. next Double ).
  update balance (x)
void is uncheck ()
 Scanner XX = new Scanner ( System. in);
System out print ("Enter the amount of the check
double x = xx next pouble ();
if (x > (get balance ()-min-balance))
```

System out shint of you have issued check of more than to
System out printly "You have issued check of more than the minimum balance or you have been charged the penalty of
100 supers");
update balance (100)
4
else
L.
balance (x);
7
displaybalance();
3 60
Soid withdrawl ()
4
System. out. print ("Enter the amount to be withdrawn").
Scanner XX = new Scanner (System in);
double x = xx. next Double ();
while (xx(get balance () -min -balance))
2
System. out. println ("The amount withdrawn is more than the balance lenter again:");  X = XX, next Double();
the balance enter again: ").
x = xx, next Double();
ufdate balance 1(x);
diplaybalance ();
25 3
3
public clays week 8h
public static void main (storing args [])
Scanner imput = new Scanner (System in); Char ch;
Char ch;
System. out. println ["Enter the type of account you want (C/S):");
(c/s);"); o

```
ch= input. next(). charAt(0);
if (ch= '5' || ch= = '5')
  Saving-Account s= new Saving - Account ();
  while (x! =0)
  System. out. println ("Enter O for exit: ");
  System. out. print In [" Enter I for deforit: ").
 System. out print In ("Enter 2 for balance enquiry: ").

System. out print In ("Enter 3 to calculate interest: ")

System. out print In ("Enter 4 for withdrawl: ").

x = input next Int ();
  if (X==0)
    break.
   else if (x = =1)
       S. compute interest ();
     Swithdrawl ();
```

```
else
 Current_Account S = new Current_Account().
   'mt x=1;
  while (x!=0)
  System. out. print(n("Enter O for exit:");
   System out println ("Inter I for deposit;");
   System out print in ("Enter & for polance enquey ")
  System. out. print In ("Enter 3 to apply for cheque:");
System. out. print In ("Enter 4 for withdrawd: ");
   x=input.next Int();
   if (x==0)
   break;
  S. getdeposit();
   else if (x==3)
  s. issue check ();
   s. withdrawl ();
```

Lab Program 6

Solve this program and write the procedure you have used to execute this in your observation

Create a package CIE which has two classes- Student and Internals. The class Personal has members like usn, name, sem. The class Internals has an array that stores the internal marks scored in five courses of the current semester of the student. Create another package SEE which has the class External which is a derived class of Student. This class has an array that stores the SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that declares the final marks of n students in all five courses.

```
C:\Users\anant\JAVA A\JAVA\Main4.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
       Main4.java
      import CIE.*;
import SEE.*;
       import java.util.Scanner;
      public class Main4 {
           public static void main(String[] args) {
               Scanner s = new Scanner(System.in);
               System.out.println("Enter the number of students:");
               int n = s.nextInt();
               Externals [] e = new Externals[n];
Internals [] i = new Internals[n];
                for(int k=0;k<n;k↔)
                    System.out.println("Enter the details of Student "+(k+1)+":");
                    System.out.print("Enter usn:");
                    String usn = s.next();
                    System.out.print("Enter name:");
                    String name = s.next();
                    System.out.println("Enter sem:");
                    String sem = s.next();
                    System.out.println();
                    System.out.println("Enter cie marks of each subject:");
                    double [] cie_marks = new double[5];
                     or(int j=1;j<=5;j++)
                        System.out.print("Subject "+(j)+":");
                        cie_marks[j-1] = s.nextDouble();
                    System.out.println();
                    System.out.println("Enter see marks of each subject:");
                    double [] see_marks = new double[5];
                     or(int j=1;j<=5;j++)
 Line 12. Column 43
```

```
C\Users\anant\JAVA A\JAVA\Main4.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
       Main4.java
                    double [] cie_marks = new double[5];
for(int j=1;j<=5;j++)</pre>
                         System.out.print("Subject "+(j)+":");
                         cie_marks[j-1] = s.nextDouble();
                     System.out.println();
                     System.out.println("Enter see marks of each subject:");
                     double [] see_marks = new double[5];
                     for(int j=1;j<=5;j++)
                         System.out.print("Subject "+(j)+":");
                         see_marks[j-1] = s.nextDouble();
                     System.out.println("-----
                     e[k] = new Externals(usn,name,sem,see_marks);
i[k] = new Internals(usn,name,sem,cie_marks);
                   (int k=0;k<n;k++)
                    for(int j=1;j<=5;j++)</pre>
                     System.out.println("The final marks of Student "+(k+1)+" in each subject:");
                         System.out.println("Subject " + (k + 1) + ":" +(e[k].getSee_marks()[j-1]/2.0 + i[k].getMarks_cie()[j-1]));
                     System.out.println();
```

```
C:\Users\anant\JAVA A\JAVA\SEE\Externals.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
 ★► Maio-Agina × Externals java
        package SEE;
        import CIE.Student;
        public class Externals extends Student {
    double [] see_marks = new double[5];
              public Externals(String usn, String name, String sem, double[] see_marks) {
                   super(usn, name, sem);
this.see_marks = see_marks;
              public double[] getSee_marks() {
    return see_marks;
```

```
File Edit Selection Find View Goto Tools Project Preferences Help
 Manistajava X Externalisjava X Internalisjava
 1 package CIE;
      public class Internals extends Student {
    double [] marks_cie = new double[5];
            public Internals(String usn, String name, String sem, double[] marks_cie) {
               super(usn, name, sem);
            this.marks_cie = marks_cie;
           public double[] getMarks_cie() {
    return marks_cie;
}
 Line 1, Column 1
```

```
C:\Users\anant\JAVA A\JAVA\CIE\Student.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
 Maro4pina X Externalispina X Shadentawa
       package CIE;
       public class Student {
          String usn;
           String name;
           String sem;
          public Student(String usn, String name, String sem) {
   this.usn = usn;
   this.name = name;
                this.sem = sem;
  14 }
```

```
Command Prompt
Microsoft Windows [Version 10.0.19841.572]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\anant>cd JAVA A
C:\Users\anant\JAVA A>cd JAVA
 :\Users\anant\JAVA A\JAVA>cd CIE
 :\Users\anant\JAVA A\JAVA\CIE>javac Student.java
:\Users\anant\JAVA A\JAVA\CIE>javac Internals.java
 :\Users\anant\JAVA A\JAVA\CIE>cd..
:\Users\anant\JAVA A\JAVA>cd SEE
C:\Users\anant\JAVA A\JAVA\SEE>javac Externals.java
Externals.java:3: error: package CIE does not exist
import CIE.Student;
Externals.java:5: error: cannot find symbol
public class Externals extends Student {
 symbol: class Student
 errors
:\Users\anant\JAVA A\JAVA\SEE>cd..
C:\Users\anant\JAVA A\JAVA>javac Main4.java
::\Users\anant\JAVA A\JAVA>java Main4
Enter the number of students:
Enter the details of Student 1:
Enter usn:18M19CS011
Enter name: ANU
Enter sem:
Enter cie marks of each subject:
Subject 1:44
Subject 2:33
Subject 3:48
Subject 4:36
Subject 5:29
Enter see marks of each subject:
Subject 1:99
Subject 2:88
```

```
Command Prompt
Subject 2:33
Subject 3:48
Subject 4:36
Subject 5:29
Enter see marks of each subject:
Subject 1:99
Subject 2:88
Subject 3:77
 Subject 4:66
Subject 5:83
Enter the details of Student 2:
Enter usn:18M18EC117
Enter name:HARIS
Enter sem:
Enter cie marks of each subject:
Subject 1:44
Subject 2:48
Subject 3:47
Subject 4:39
Subject 5:36
Enter see marks of each subject:
Subject 1:85
Subject 2:84
Subject 3:81
Subject 4:97
Subject 5:79
The final marks of Student 1 in each subject:
Subject 1:93.5
Subject 1:77.0
Subject 1:86.5
Subject 1:69.0
Subject 1:70.5
The final marks of Student 2 in each subject:
Subject 2:86.5
Subject 2:90.0
Subject 2:87.5
Subject 2:87.5
Subject 2:75.5
 :\Users\anant\JAVA A\JAVA>
```

```
Hackages
        CIE. *;
import SEE. * .
import java. util. Scanner;
public class Main 4 5
public Static void main String [] args ) of
Scanner S = new Seanner (System in);
System.out. pointln ("Enter the number of students:");
int n = S. next Int ();
Externals [] e = new Externals [n].
Internals [] i = new Internals [n].
for (int K=D; Kcn; K++)
system, out println ("Enter the details of Students"+ (x+1)+":").
System. out. print ("Enter usn:");
  String usn = S. next();
 System. out. print ("Enter name:");
    String name = s. next()
 System. out, print (n / "Enter sem: ").
    Storing Sem = S. next ();
  System. out. print(n()
 system. out print In ("toter cie marks of each subject:");
 double [] cie-marks = new alouble [5];
  for(int j=1; 1<=5; j++)
    System.out. print ("Subject" + (j) + " ? 33);
cie-mas hu[j-1] = S. next Double ();
   System out print (n) "
    e[k] = new Externals [usn name sem see _ marks);
    i[x]= new Internals (usn, name, sem, cie - marks);
    for (int k=0; Kcm; K++)
```

System.out. println ("The final marks of student "+(x+1)" in each System. out, print on ("Subject" + (K+1) + ":" + (e[k]. get See - marker 1/1) bo + i[r]-getmarks-cie[)[j-i]): System out println(); Packages: package CIE; public class Student of String usn; String name; public Student (string isn, string name, string sem) & this usn = usn; this name = name; this sem = sem; 2) package CIE; public class Internals extends Studenty double [] marks cie = new double [5]; public Internals (String us, String name, String sem, double [] marks - cie) of Super (usn, name, sem) this marks-cie = marks-cie; public double [] get Marks ciel) 5

return marks-cie; package SEE; import CIE, Student; public class Externals extends Student of double [] se marks = new double[5]; public Externals (String usn, String name, String sem, double ( ] see - marks) of Super (USn name, Sem); this see marks = see - marks; public double [ ] get See - marks () & seturn see - marks;

Write a program to demonstrate generics with multiple object parameters.

```
Gen_demo.java - Notepad
File Edit Format View Help
class Demo<T, V>
    T obj1;
    V obj2;
    public Demo(T obj1, V obj2) {
        this.obj1 = obj1;
        this.obj2 = obj2;
    void show_types()
        System.out.println("Type of T:"+obj1.getClass().getName());
        System.out.println("Type of V:"+obj2.getClass().getName());
class Player
{
    String name;
    public Player(String name) {
        this.name = name;
public class Gen demo {
    public static void main(String[] args) {
            Demo<Integer, String> d1 = new Demo<Integer, String>(21, "Faster");
            d1.show types();
        System.out.println();
            Demo<Double, Boolean> d2 = new Demo<Double, Boolean>(23.45, true);
            d2.show types();
        System.out.println();
            Player p = new Player("John");
        Demo<Player, Integer> d3 = new Demo<Player, Integer>(p, 45);
        d3.show_types();
```

# Microsoft Windows [Version 10.0.19041.630] (c) 2020 Microsoft Corporation. All rights reserved. C:\Users\anant\JAVA A>javac Gen\_demo.java C:\Users\anant\JAVA A>java Gen\_demo Type of T:java.lang.Integer Type of V:java.lang.String Type of V:java.lang.Bouble Type of V:java.lang.Boolean Type of T:Player Type of V:java.lang.Integer C:\Users\anant\JAVA A>

generics - Week 10
296
Jash Resolt, V2
Lu Jean T
July 1
M. A.
Tabili.
£3'
Tobil Volge)
ablic Demo (7 obj 1, Vobje) of
this obj = obj !;
this total
this object = obje;
12 (111)
yerd show-types ()
systement println ("Type of T:" +objl. get class (). get Name ());  Systement println ("Type of V" +objd. get class () get Name ());  Systement println ("Type of V" +objd. get class () get Name ());
Plan ("Time of T." + ohil, get class ), get Name ()
coten out printer ( ) and state of Namel St
told of the of V + object de course s. for
Sustanella princery of
1
Chr Player
- Cos Luga
skling name;
M De so I Chain name &
pullic player ( ) conse
this name = name,
sking name, public Player (String name) & this name = name;
public class from derne of Takes &
public Class Green active (7 about )
public static wind ( Strong ) Testing String
De to the Gaing >d = new Denno = negroup
public class Gen-derne of public static stild (String [ Jargs ) of Demo (Integer, String > d) = new Demo (Integer, String) [21, "Fastle");
(2) "Fastle");
d) chart trips():
d), show types():
- yttem . Dut . print [m]
- Indian?
Demos Pouble, Boolean >d2= new Demos Doubla, Coolean?
Transfer Familiary Sort - 11800
(23.45, taue),
Al olive hard
as show-types ();
System out, paint (n();
Player p= new flager (" John");
The beautiful and the second

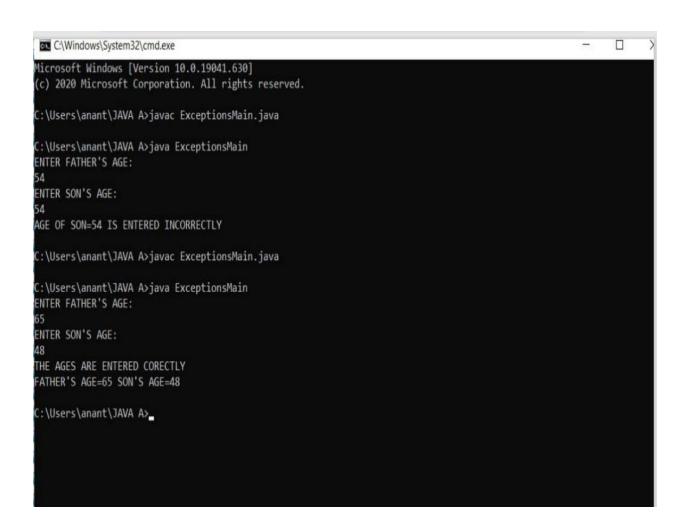
Page : Date :
Demo - Player Integer > d3 = new Demo - Player, Integer > (p, 45)
3

# Lab Program 8

Write a program that demonstrates handling of exceptions in the 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 Wrong Age() when the input age=father's age.

```
import java.util.Scanner;
class WrongAge extends Exception {
   int age;
   WrongAge(int x) {
        age = x;
    public String toString() {
        return "AGE OF SON=" + age + " IS ENTERED INCORRECTLY";
class father {
   int a;
   father(int x) {
        a = x;
}
class son extends father {
   int age;
    son(int fage, int sage) {
        super(fage);
        age = sage;
   }
   void compute() throws WrongAge {
        if (age >= a) {
            throw new WrongAge(age);
        } else {
            System.out.println("THE AGES ARE ENTERED CORECTLY");
            System.out.println("FATHER'S AGE=" + a + "\t" + "SON'S AGE=" + age);
}
class ExceptionsMain {
```

```
File Edit Format View Help
class father {
   int a;
   father(int x) {
       a = x;
   }
}
class son extends father {
   int age;
   son(int fage, int sage) {
        super(fage);
        age = sage;
   void compute() throws WrongAge {
        if (age >= a) {
            throw new WrongAge(age);
        } else {
            System.out.println("THE AGES ARE ENTERED CORECTLY");
            System.out.println("FATHER'S AGE=" + a + "\t" + "SON'S AGE=" + age);
   }
}
class ExceptionsMain {
   public static void main(String args[]) {
        Scanner s = new Scanner(System.in);
        System.out.println("ENTER FATHER'S AGE:");
        int f = s.nextInt();
        System.out.println("ENTER SON'S AGE:");
        int so = s.nextInt();
        son ss = new son(f, so);
            ss.compute();
        } catch (WrongAge e) {
            System.out.println(e);
   }
```



Page .
Veck 10 - Lab Portogram 2 Dote
impost java util Scanner;
class wrongfige extends Exception (
Int age;
Whoma Age (int X) of
age = x
age = x;
public String to String () &
public String to String() & roturn "AGE OF SON ="+ age + "IS ENTERED INCORRECTLY"
3
16 3
Class father {
inta;
father (int x) of
a=x;
2
y
class son extends tather &
Son (int fage, int sage) of
Super (fage);
age = Sage;
1 Total Control of the Control of th
Void compute () throws Wrong Age of
if lager=a) S
theore new wrong Age (age);
3 che of
System out print in ["The ABTS are entered CORECTLY");
Sustem out print on [" FATUFO'S OFF =" +0 + " 1+ ">+
"SON'S AGE = " + age);
9
3
3

Father-Son Exception	
class Exceptions Main of	16716
public static void main (string of Scanner (syste	min);
Scanner S = new Scanner (System Out. print In ("ENTER FAT	HER'S AGE : ");
Int f = S, mext Int );	
int SD = S next Int ();	J'S AGE :");
Son SS = new son (f, Sa);	a comment
try &	
SS. compute ();	A STATE OF THE PARTY OF THE PAR
3 g satch (wrong Age C) {	The street of th
System. out print(n (e);	
System. out. print(n (e);	
4	

# LAB PROGRAM: 9

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.

```
File Edit Format View Help
class NewThread implements Runnable {
    String name;
    Thread t;
    NewThread(String threadName) {
       name = threadName;
       t = new Thread(this, name);
       System.out.println("New thread: " + t);
       t.start();
   public void run() {
       try {
           if (t.getName().equals("One")) {
               for (int i = 5; i > 0; i--) {
                   System.out.println("BMS College of Engineering");
                   Thread.sleep(10000);
           }
           else{
               for (int i = 20; i > 0; i--) {
                   System.out.println("CSE");
                   Thread.sleep(2000);
            }
       catch(InterruptedException e){
           System.out.println(name + "Interrupted");
       System.out.println(name + " exiting.");
}
public class Mainthread1 {
    public static void main(String[] args) {
       new NewThread("One");
       new NewThread("Two");
}
```

```
Command Prompt
Microsoft Windows [Version 10.0.19041.630]
(c) 2020 Microsoft Corporation. All rights reserved.
C:\Users\anant>cd JAVA A
C:\Users\anant\JAVA A>javac Mainthread1.java
C:\Users\anant\JAVA A>java Mainthread1
New thread: Thread[One,5,main]
New thread: Thread[Two,5,main]
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
BMS College of Engineering
CSE
CSE
CSE
CSE
BMS College of Engineering
Two exiting.
One exiting.
C:\Users\anant\JAVA A>
```

	WEEK II OOJ PROGRAM
	class NewThread implements Runnable of
	Clas New marad imparitions
	String name;
	Thread t;
	NewThread (String thread Name) &
-	name = thread Name;
	t = new Thread (this, name);
	System. out print (n ("New thread:"+t);
	t. Start ();
	9
	public void run() {
	try &
	if (t. get Name(), equals("One")) &  for (inti= 5; i>0; i-) &
	for (inti= 5; i>o; i) of
	System out print n 1 BMS COLLEGE of Forming Prince")
-	Theread sleep (10000);
	3
	3
	else {
	for (int i= 20; i>0; i) of
	Thread, sleep (2000);
	Thread, sleep (2000);
	9
	9
	9
	System out println (name + "Interrupted");
	System out print (name + "Interrufted").
	System. out. println (name + "exiting");
	117
	public class Mainthread of
	public Static void main (String [] args) & new NewThread ("Dne");
	man New Instead ("One")
	new NewThread ("Two").

# Lab program 10

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 Arithmetic Exception Display the exception in a message dialog box.

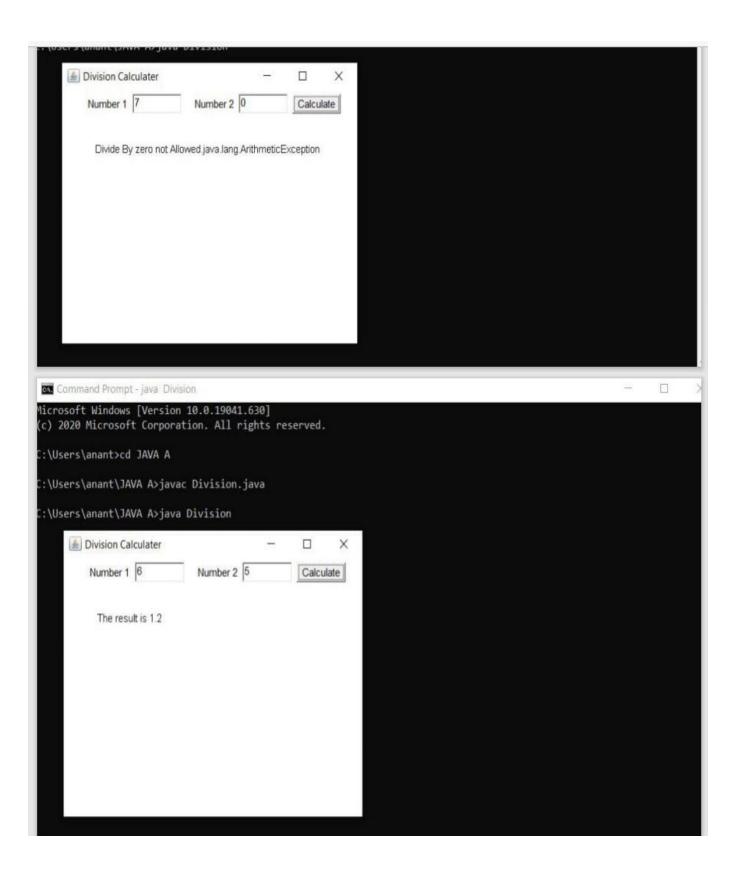
WEEK 12 LAB -10
import jour aust *; *.
import jour aut event *; import jour aut event *; class Division extends Frame implements Action Listense {
took Field num Text Filey
Text field numed Text Field; Builton calculate;
ind a,b,
String mag = "Enter the numbers";
DiFic Discont 1
calculate = new Button (" Gloulate");
num! Text Field = new Text Field (5); Label num! Label = new Label (6" Number 1" Label RIGHT);
mumo Text Field = men Text Field (5)
Label rum 2 Label = new Label ("Number 2", Label Ribit) add (num ) Label);
add (quem (Text Field);
add (num 2 Text Field);
add (calculate);
num Text Field. add Action Listener (this):
Calculate add Action Listener (this).
addwindowlistenes (new MywindowAdoptes ());
public void action Performed (Action Event ac) &
try of serult = divideNumbers ();
wnsg=("The result is" + small);
repaint (); Yearch (Number Fermatt reption e) f
mig="Number is not sitages," +e;

refaint (); gratch (Asithematic (xception c) & msg="Divide By Zero not Allowed."+e; repaint () public float divideNumbers () { a = Integer prese Int (num ) Text Field get Text ( b = Integer pars. Int (num 2 Text Field get Text) throw new Asithonetic Exception ); return ( Ploat ) a/b; public void paint (brophics of g. draw String (msg, 50,100); public static void main (String angs[]) div. set Size (new Dimension (500, 500)) diviset Title 1" Division Calculator" div. set Visible (true); class Mywindow Adapter extends window Adapter & blic void windowclosing WindowEvent event System. exit(0);

```
Division.java - Notepad
File Edit Format View Help
import java.awt.*;
import java.awt.event.*;
class Division extends Frame implements ActionListener{
    TextField num1TextField;
    TextField num2TextField;
    Button calculate;
    int a,b;
    float result;
    String msg="Enter the numbers";
    public Division(){
        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;
```

```
Division.java - Notepad
File Edit Format View Help
        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[]){
        Division div=new Division();
        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);
}
```





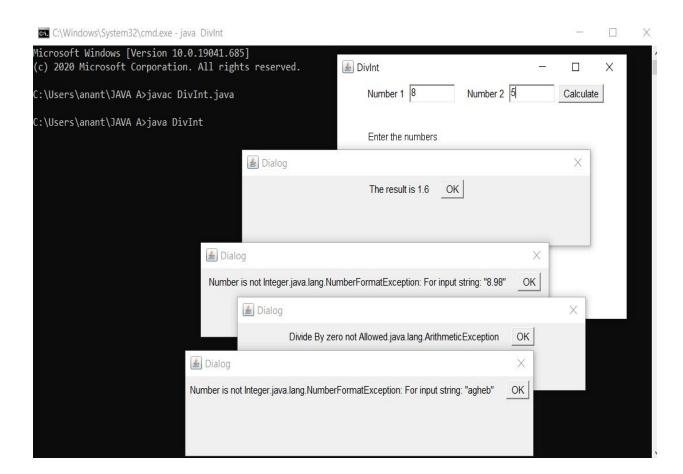
### Lab Program 10

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 Arithmetic Exception Display the exception in a message dialog box.

```
DivInt.java - Notepad
File Edit Format View Help
import java.awt.event.*;
import java.awt.*;
class SampleDialog extends Dialog implements ActionListener {
        DivInt bld;
        SampleDialog(Frame parent, String title) {
                super(parent, title, false);
                bld=(DivInt)parent;
                setLayout(new FlowLayout());
                setSize(500, 200);
                add(new Label(bld.msg));
                Button b;
                add(b = new Button("OK"));
                b.addActionListener(this);
        public void actionPerformed(ActionEvent ae) {
                dispose();
        }
}
public class DivInt extends Frame implements ActionListener {
        TextField num1TextField;
    TextField num2TextField;
    Button calculate;
    int a,b;
    float result;
    String msg="Enter the numbers";
    public DivInt(){
        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 MvWindowAdanter()):
```

# Divlnt.java - Notepad

```
File Edit Format View Help
        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);
        }catch(NumberFormatException e){
                msg="Number is not Integer."+e;
        }catch(ArithmeticException e){
                msg="Divide By zero not Allowed."+e;
        }
        SampleDialog d = new
        SampleDialog(this, "Dialog");
        d.setVisible(true);
 }
    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[]){
        DivInt aa=new DivInt();
                aa.setSize(new Dimension(500,500));
                aa.setTitle("DivInt");
                aa.setVisible(true);
    }
}
class MyWindowAdapter extends WindowAdapter {
        public void windowClosing(WindowEvent we) {
                System.exit(0);
        }
}
```



Likek 13 import java. aut. event. \*; class Sample Dialog extends Dialogo implements Actionlisteness Sample Dialog (Frame parent, String title) of Super (parent, title, false); bld = (Div Int) posent; sotlayout (new Flowlayout ()); sat Size ( 500, 200) add (now label (bld. msg)); Button b; add (b = new Button ("OK")); b. add Action Listener (this); public void action Performed (Action Event ac) & public class DivInt extends Frame implements Actionlistens of Text Field num Text Frield TextField numel Text Field Button calculate; intab; float result; String meg="Enter the numbers"; public Divint () satlagent (new Flowlayout ()); calculate = new Button ("Calculate"); num TextField = new TextField [5); taket numbabel = new Label ("Number 1", Label RIGHT); muma Text Field = new Text Field (5); Label numalabel = new Label ("Number 2" Label RIGHT);

```
add (num [Label);
 add num Text Field);
 add (nume label);
 add numa Text Field)
 add(calculate);
 num Text Field, add Action listener (this)
 num 2 Text Field add Action Listener (this),
 calculate add Action Listener (this);
addWindowlistener (new MywindowAdapter ());
 public void action Performed (Action Event ac) &
 thy ?
 result = divide Numbers ();
 msg = ("The sesult is " tresult);
3 catch (Number Formattxception e) &
mag = "Number is not Integer." te;
omsg = "Divide By zero not Allowed." te;
Sample Dialog (this, "Dialog");
d. set Visible (true);
public float divideNumbers () 5
a = Integer. parse Int (num / Text Field. get Text ());
b = Integer. parse Int (num & Text Field. get Text ());
```

if (b == 0) {

Anithemetic Exception (); return (float) a/b; public void paint (braffices g) & g. draw String (msg, 50, 100); public static void main (string argr[]) & DivInt aa = new DivInt (); aa set Size (new Dimension (500, 500)); aa set Title (convint 5); aa set Visible (tome); dass MyWindowAdapter extends WindowAdapter & public void windowClosing (WindowErlent we) & System. exit(0);