#### B.M.S COLLEGE OF ENGINEERING BENGALURU

Autonomous Institute, Affiliated to VTU



### LAB REPORT

#### 23CS3PCOOJ

Submitted in partial fulfilment of the requirements for Lab

Bachelor of Engineering

in

Computer Science and Engineering

Submitted by:

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### **Lab Programs**

 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.

```
import java.util.Scanner;
class quad {
  public static void main(String args[]) {
    int a, b, c;
    double r1, r2, d:
    Scanner s = new Scanner(System.in);
    System.out.println("Nehal A K\n1BM22CS176");
    System.out.println("Enter the coefficients of a,b,c");
    a = s.nextInt();
    b = s.nextInt():
    c = s.nextInt():
    while (a == 0) {
       System.out.println("Not a quadratic equation");
       System.out.println("Enter a non zero value for a:"):
       a = s.nextInt():
    d = b * b - 4 * a * c;
    if (d == 0) {
       r1 = (-b) / (2 * a);
       System.out.println("Roots are real and equal");
       System.out.println("Root1 = Root2 = " + r1);
    } else if (d > 0) {
       r1 = ((-b) + (Math.sgrt(d))) / (double) (2 * a);
       r2 = ((-b) - (Math.sgrt(d))) / (double) (2 * a);
       System.out.println("Roots are real and distinct");
       System.out.println("Root1 = " + r1 + "Root2 = " + r2);
    } else if (d < 0) {
       System.out.println("Roots are imaginary");
       r1 = (-b) / (2 * a);
      r2 = Math.sqrt(-d) / (2 * a);
```

```
System.out.println("Root1 = " + r1 + " + i" + r2);

System.out.println("Root1 = " + r1 + " - i" + r2);

}
```

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.

```
import java.util.Scanner;
class Subject {
 int subjectMarks;
 int credits;
 int grade;
}
class Student {
 String name;
 String usn;
 double SGPA:
 Subject[] subject;
 Scanner s:
 Student() {
    int i:
    subject = new Subject[9];
    for (i = 0; i < 9; i++)
```

```
subject[i] = new Subject();
    s = new Scanner(System.in);
  void getStudentDetails() {
    System.out.println("Enter student name");
    name = s.next();
    System.out.println("Enter student usn");
    usn = s.next();
  void getMarks() {
    int i:
    for (i = 0; i < 9; i++)
       System.out.println("Enter marks for subject " + (i + 1));
       subject[i].subjectMarks = s.nextInt();
       System.out.println("Enter credits for subject " + (i + 1));
       subject[i].credits = s.nextInt();
       if (subject[i].subjectMarks >= 90) {
         subject[i].grade = 10;
       } else if (subject[i].subjectMarks >= 80 && subject[i].subjectMarks
< 90) {
         subject[i].grade = 9;
```

```
} else if (subject[i].subjectMarks >= 70 && subject[i].subjectMarks
< 80) {
        subject[i].grade = 8;
      } else if (subject[i].subjectMarks >= 60 && subject[i].subjectMarks
< 70) {
        subject[i].grade = 7;
      } else if (subject[i].subjectMarks >= 50 && subject[i].subjectMarks
< 60) {
        subject[i].grade = 6;
      } else if (subject[i].subjectMarks >= 40 && subject[i].subjectMarks
< 50) {
        subject[i].grade = 5;
      } else {
         System.out.println("Failed");
        System.exit(0);
   }
  void computeSGPA() {
    int totalCredits = 0;
    int creditsGained = 0;
    int i;
    for (i = 0; i < 9; i++) {
       totalCredits += subject[i].credits;
```

```
creditsGained += subject[i].credits * subject[i].grade;
    }
    SGPA = (double) creditsGained / totalCredits;
 }
  void displayResult() {
    System.out.println("Name = " + name);
    System.out.println("Usn = " + usn);
    System.out.println("SGPA = " + SGPA);
public class Main {
  public static void main(String args[]) {
    Student s1 = new Student();
    s1.getStudentDetails();
    s1.getMarks();
    s1.computeSGPA();
    s1.displayResult();
 }
```

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.

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

```
class Book {
  String name:
  String author:
  int price;
  int numPages;
  Book(String name, String author, int price, int numPages) {
    this.name = name:
    this.author = author;
    this.price = price;
    this.numPages = numPages;
  }
  public String toString() {
    String bookDetails = "Book name: " + this.name + "\n" +
         "Author name: " + this.author + "\n" +
         "Price: " + this.price + "\n" +
         "Number of pages: " + this.numPages + "\n";
    return bookDetails:
```

```
}
public class Main {
  public static void main(String[] args) {
    Scanner s = new Scanner(System.in);
    System.out.println("Enter the number of books: ");
    int n = s.nextInt();
    Book[] books = new Book[n];
    for (int i = 0; i < n; i++) {
      System.out.println("Enter details for Book " + (i + 1) + ":");
      System.out.print("Name: ");
      String name = s.next();
      System.out.print("Author: ");
      String author = s.next();
      System.out.print("Price: ");
      int price = s.nextInt();
      System.out.print("Number of pages: ");
      int numPages = s.nextInt();
      books[i] = new Book(name, author, price, numPages);
```

```
System.out.println("\nDetails of the books:");

for (int i = 0; i < n; i++) {

System.out.println("Book " + (i + 1) + ":\n" + books[i].toString());

}

}
```

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.

```
import java.util.*;
abstract class AbsArea {
  int a, b;
  AbsArea(int x) {
    a = x;
  }
  AbsArea(int x, int y) {
    a = x;
    b = y;
  }
  abstract void area();
}
```

```
rec(int a, int b) {
    super(a, b);
  void area() {
    System.out.println("The area of the rectangle is: " + a * b);
 1
class tri extends AbsArea {
  tri(int a, int b) {
    super(a, b);
 1
  void area() {
    System.out.println("The area of the triangle is: " + (a * b) / 2);
class cir extends AbsArea {
  cir(int a) {
    super(a);
  void area() {
    System.out.println("The area of the circle is: " + 3.14 * a * a);
 }
class Main {
  public static void main(String args[]) {
System.out.println("This is done by Nehal AK\n1BM22CS176");
    int x, y;
    Scanner n = new Scanner(System.in);
    // Input for rectangle dimensions (x and y) with validation
    System.out.println("Give input for rectangle");
```

```
x = n.nextInt();
    v = n.nextInt():
    if (x < 0 | | y < 0) {
       System.out.println("Invalid input for rectangle. Please enter
positive values.");
       // You might want to handle this situation differently, such as
asking the user to enter values again.
      System.exit(1); // Exiting with status code 1 (indicating abnormal
exit)
    AbsArea r = new rec(x, y);
    r.area();
    // Input for triangle dimensions (x and y) with validation
    System.out.println("Give input for triangle");
    x = n.nextInt():
    y = n.nextint();
    if (x < 0 | | y < 0) {
       System.out.println("Invalid input for triangle. Please enter positive
values,"):
       System.exit(1);
    AbsArea t = new tri(x, y);
    t.area();
    // Input for circle radius (x) with validation
    System.out.println("Give input for circle");
    x = n.nextInt();
    if (x < 0) {
      System.out.println("Invalid input for circle. Please enter a positive
value."):
      System.exit(1);
    AbsArea c = new cir(x);
```

```
c.area();
}
}
```

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.

```
import java.util.Scanner;
class Account {
    String CustomerName;
    double AccNo, Balance;

Account(String CustomerName, double AccNo, double Balance) {
        this.CustomerName = CustomerName;
        this.AccNo = AccNo;
        this.Balance = Balance;
}

public void Deposit(double Amount) {
    Balance += Amount;
    System.out.println("DEPOSIT SUCCESSFUL");
    DisplayBalance();
}
```

```
void DisplayBalance() {
    System.out.println("BALANCE:" + Balance);
  }
class CurrentAccount extends Account {
  double MinBalance = 500.0;
  double Charges = 10.0;
  CurrentAccount(String CustomerName, double AccNo, double Balance) {
    super(CustomerName, AccNo, Balance);
  }
  void Withdraw(double Amount) {
    if (Balance >= Amount) {
      Balance -= Amount;
      System.out.println(Amount + " withdrawn successfully");
      DisplayBalance();
    } else {
      System.out.println("insufficient Balance");
    }
  }
  void UpdateBalance() {
    if (Balance <= MinBalance) {
      Balance -= Charges;
```

```
System.out.println("service charge applied for maintaining low
balance");
      DisplayBalance();
    }
 1
class SavingsAccount extends Account {
 SavingsAccount(String CustomerName, double AccNo, double Balance) {
    super(CustomerName, AccNo, Balance);
 1
  double interest = 0.05;
 void UpdateBalance() {
    Balance = Balance + (interest * Balance);
    DisplayBalance();
  }
 void Withdraw(double Amount) {
    if (Balance >= Amount) {
      Balance -= Amount:
      DisplayBalance();
    } else {
      System.out.println("insufficient Balance");
   }
 }
```

```
}
```

```
class Bank {
  public static void main(String args[]) {
    String CustomerName;
    double AccNo, Balance;
    double amt, amt1;
    Scanner in = new Scanner(System.in);
    System.out.println("enter name:");
    CustomerName = in.next();
    System.out.println("enter AccNo:");
    AccNo = in.nextDouble();
    System.out.println("enter Balance:");
    Balance = in.nextDouble();
    System.out.println("enter amount to deposit");
    amt = in.nextDouble();
    System.out.println("enter amount to withdraw");
    amt1 = in.nextDouble();
    CurrentAccount c = new CurrentAccount(CustomerName, AccNo,
Balance);
    c.Deposit(amt);
    c.Withdraw(amt1);
    c.UpdateBalance();
```

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

SavingsAccount s = new SavingsAccount(CustomerName, AccNo, Balance);

s.Deposit(amt);

s.Withdraw(amt1);

s.UpdateBalance();

}
```

6.Create a package CIE which has two classes- Student and Internals. The class Student has members like usn, name, sem. The class Internals derived from Student 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.

```
package CIE;
public class Student
{
    public String name;
    public String usn;
    public int sem;

public Student(String name,String usn,int sem)
{
    this.name=name;
    this.usn=usn;
    this.sem=sem;
    }
}
```

```
package CIE;
    public class Internals extends CIE. Student
        public int [] InternalMarks;
        public Internals(String name, String usn, int sem, int []InternalMarks)
   1
      super(name, usn, sem);
       this.InternalMarks=InternalMarks;
   package SEE;
   import CIE.Student;
   public class Externals extends Student
     {
         public int [] SeeMarks;
         public Externals(String name, String usn, int sem, int []SeeMarks)
            super(name, usn, sem);
             this.SeeMarks=SeeMarks:
         }
import CIE.Student;
import CIE.Internals;
import SEE.Externals;
import java.util.Scanner;
public class FinalMarks
    public static void main(String [] args)
       Scanner s1=new Scanner(System.in);
       System.out.println("Enter the number of Students");
       int n=s1.nextInt():
```

```
String [Inames=new String[n]:
       String []usn=new String[n];
      int []sem = new int[n];
     int [][] InternalMarks = new int[n][5];
     int [][] SeeMarks = new int[n][5];
for(int i=0 ; i<n; i++)
    System.out.println("Enter details for Student" + (i+1) + ":");
    System.out.println("Name:");
    names[i]=s1.next();
    System.out.println("USN:");
    usn[i]=s1.next();
    System.out.println("SEM:");
    sem[i]=s1.nextInt();
    System.out.println("Enter Internal marks for 5 courses:");
for(int j=0; j<5; j++)
    System.out.println("Course"+(j+1)+":");
    InternalMarks[i][j]=s1.nextInt();
   System.out.println("Enter Internal marks for 5 courses:");
for(int j=0; j<5; j++)
  System.out.println("Course"+(j+1)+":");
  SeeMarks[i][i]=s1.nextInt();
int [][]FinalMarks = new int[n][5];
for(int i=0 ; i<n ; i++)
       Internals I1 = new Internals(names[i], usn[i], sem[i], InternalMarks[i]);
       Externals E1 = new Externals(names[i], usn[i], sem[i], SeeMarks[i]);
for(int j=0; j<5; j++)
       FinalMarks[i][j] = I1.InternalMarks[i] + E1.SeeMarks[j];
       System.out.println("Finals Marks for " + n+ "Students in 5 courses:");
for(i=0 :i<n :i++)
       System.out.println(names[i] +":");
for(int i=0: i<5:j++)
       System.out.println(FinalMarks[i][j] + ":");
```

```
System.out.println();
}
s1.close();
}
```

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.

```
import java.util.Scanner;
            class WrongAge extends Exception {
             WrongAge(String message) {
                     super(message);
  }
}
class InputScanner {
  static Scanner sc = new Scanner(System.in);
1
class Father extends InputScanner {
  int fatherAge;
  Father() throws WrongAge {
    System.out.println("Enter Father's age");
    fatherAge = sc.nextInt();
    if (fatherAge < 0) {
      throw new WrongAge("Age cannot be negative");
   1
```

```
}
  void display() {
    System.out.println("Father's age is " + fatherAge);
}
class Son extends Father {
  int sonAge;
  Son() throws WrongAge {
    System.out.println("Enter son's age");
    sonAge = sc.nextInt();
    if (sonAge > fatherAge) {
       throw new WrongAge("Son's age cannot be greater than father's age");
    } else if (sonAge < 0) {
      throw new WrongAge("Age cannot be negative");
  }
  void display() {
    System.out.println("Son's age is " + sonAge);
}
public class ExceptionHandling {
  public static void Main(String args[]) {
    try{
      Son son= new Son();
      son.display();
    catch(WrongAge e){
      System.out.println("Exception "+ e.getMessage());
```

Quadratic import java util scopned class Quadratic int a, b, c; double si, sz, d; 8 (concer 5 - New scance (notem 10); System out println ("Enter the coefficients #0. bg"); a = S. next Jn/1; = S. rext Int () While (a == 0) system out pint I' Note quality queter); Scanes 5: row Scanes (Sytralia); a = s. rentant (1; d=b\*b-4\*0\*0; 3, = (-1)/(2×a).

Sylon at port In(" Root ar sandond guel");

System at print In(" Root 1 - Keel +2 - " - M); 21= ((-b)+(matt. 821+(d)) / (dable) (2×a);

22 = (1-b) - (Math. Bast (d)) / (double) (2 a)

System out point in ("Posts ce soul added to

System out print her ("Posts " + 51 + "Root 2") System out pointln ("Roots are maghery)

21 = (-b) / (ita);

22 = hath saxt (-d) / (ita);

system out pointln ("Rest! = "talt" + 1);

By km out pointln ("Poot! = "t ) | 1 " - " Class Quadato Main Rublic static void main (817419 agri) Quadratic g = new Quadratic (); q · qetd(); g. conptell; Output: Ento the coefficients of a, b, c Roots are real and distinct Root 1 = 2 Poot 2/ +1

Enter the cofficient of a, b, c Nota quadern Enler a non zoo velverofa Enter the colficient of a, b, c toots one soul and Equal Root 1= root 2 = -1 Enter the coefficients of 9, b. C Roots are imagined Post 2-00- 10 322875

Jave peopler to creek a rose student with may a Java Mayor to cheek and on import ally make Include home, an alley cledit and on import ally make Include methods trancept and display details and a method to calculate imput into util Sconner in t abject Musics; int credits ; int grade; Clay Student S Stoing pome; Stungush; double SGRA Subject [] subject Scoones S Student () S subject: New Subject (9); For (1:0; 169; 1++) subject (i) = new subject (); S = new Scanner (Syptom In); void get Student Petails () 1 Syptemout. pintln(" Ento student have"); pary - s. next (); sightmout pint In ("Ento student win"), Ush = s. next (1) void get Maks () 0

subject (1) subject thata - 5 hart Int (); Specin out print In (" Ento credita for subject" + (in); subject CiJ : Godits = 5 next In () if ( Subject [ ] - Subject Marks > = 9 0 5 subject [i] gode = 10; 3 else if (Subject[i]-subject Moss >= 80 21 Subject [1] so bject mass (90) & subject[) good I else i'l (suject [i] subject to ke > po de sujectli]. subject Mary 280) & subject [i] gode = 9; I dee if (subject [i] : whattag> = 60 slayata? Subject trosky < 70) & subject [1] - Stoole = 07, Gelpip ( subject (1) subject Mats 7: 50 N susper 1(1) subject make to) & subject [i] good = 6, 3 else if ( Subject (1) Subject maly >=4021 subject (1). subject mata < 50) & subject (1) grado = 5) systemout pintln ("Failed"); 841 (0); void comple SGPA S int total credits = 0; int credite gained = 0 Fox (1-6; 169, 1++) total cardita + = subject[i] andita introction

3 GPA = (double) cardita Gained / total ends System out printly "there -" + none

System out printly "Sort" + Sort Public Class Majo 5 Public static void main (string age) SI- get and ent befails (2) SI. Convote SGP4 (); 51, display Result 1)

output: Fater Shalent non Fafer Ush N2L (S176 Ent maks By subject Enta make for subject 2 Ento cudito for subject 2 Enler mask for subjects Enter Credity for soldect 3 enter male for subject 4 Enles Crealite bur subject 4 Enles parlator subgest Inter readity for sujects Ento maly for subject 6 Enter andis forsubject 6 Enter rate for subject 7 Inter ordita to abject ?

Enter makes the publication for subject & sholent none: Nehel student usn: inmrecsin 56ra . 9.5 90990 1012/23

Create a class Roofs which contain few members none, author paice, non pages lockede a construction to set the values for the removes Include methods to sot and get the details of the objects. Include a talteing () method
that could display the complete details of
the book. Powerlos a Java peoplem to
create in book objects import java util . Scenna; class Book & String name; String author; int pice ; int num pages; Books Stains name stong out as int pice intrombus til none = none this attar outhor; this rum lager - num lager; public string to string of good rane + his name " " " x
String book Potuls = " Book rane + his name + " n" x
"total rane: " x this ador " " n" x "Price" + How price + " In" of "Nort peges " this nurleges " " "; re han both trebils;

Public class Main pull white rold main (String [Joses) } Example 8 - new scance (System. in); System: Out printle ("Ente He number of books:) Pook [] books = now Book [n] Fun (int i=0 [ ED; i++) &
System out paintle ("Frito delevir Parpole+(i+)+") System. But perat ("home ")" String name = s. text(); Aglen at print ("Actor ")" string author = s. next !! int price = 8 next Int(); eyem out . Print (" Notto . D) No gossi"); Int punkages = s. next Int(); looks (i) = new Brok(none, onthe poice, numbers); System. out. pintln ("h Kookalehili");
Pay (int 1=0; isn 1++) }
Splem out-println ("Kook"+(i+)+": h "+books [i])

Finds the number of bookse e Enter details for Bak 1 Mane Ten Te Price: 500 Number of Jases: 250 Enter details for 100 k2 None: Friends
Author: Pade Price: 400 Number of page 120. Petrils of the books: Book 1. Book pome: Trump Author pome: danald Paice 900 humba of pages :250 Box2: book nome: Friends Author pome: bale Perce: 400 Number of Yoger 220

2-1-23 LAB-7 Develop a True playson to crease haved Thope that contains two integers engly method round point Aur (). Prome a lasses noned keatingle, begangt and make that each one of the class extends the sho Each one of the closer containonly the rolls being Acco () that pints the are of linguis abligat play Abs Ara & inta 1 Ab Alee (inta inty) & abstract void area ( clays lextend AssALEOL rec (inta, ints) of sper (9, b); hoid orea (1 } system out pently ( The one of the class the extends My Don & super (a, b) {

roid area () s Sycha out prolly ( " he are of he fundic" clay (1) extends Als Aug ? Giz (nta) 8 1 upes (a): void ago 1) 5 Sylen out pralln (" Troop of to Clay Main & public static baid main (string as CT) } Also Arac g - now see (s, 4); 7 · 964 (). Als area of = New this (4, 5); t. our (); Ala ora (= new (1) (2); ( oleg (); output: The area of the gractoryle is; 12 Te area of ly triangle 18 i 18 The agree of the circle is: 12.56

LAB-5 Perclas . Jose Pragam to creat a class Rock the maintaly two kinds of arount for it. Customers, one allow soring amount and in other ruseent account. The soring account paride compand intelest and withdows facilities but no charge book facility. assent account provide cheer book forth ha intaget. Cuse torques holders should also maintain a minimum balance and if the bila fally below his land, a parice chaques imposed Saport Java Util Score ; Clas Account Storing Customer None: double Archo, Palonie; Account Otting Custone Name, double Archy, double blood this Costoner None - Custoner None; this . Acc No = Acc No. this Bolonce = Bolonce; public void boosit (duble smoont) Belone + - Arany Bythen at printle "Deposit Succept Display balance () Lysten out , Winth ("balance" + Belove

class Cuseal Account extent Account hin Blanc = 500.0; double Charge = 10.0.
Cultert Account (String Cushmermedally Acropally they) Supple (restorne Nome, Accino, Balance) roid withdraw (double Amount) if ( Belonce > = Amount) Below - = Ano and ; Bylen Out - point In (Amount without an brushy) Syden out- printle ("inafferent between Display Balance (1) else "insufficient kalen Min Balance) Splen out prothe "Savice change by Pispla po 1. 1

Class Sovings Account extends Account Being Account ( 8 long Cohona rove double Kong double Super (Custome Mare, Acc No, Bolone); double interest = 0.05) Bolane = Bolane + ( interest \* Balone); word with dean (daste Amount) Dioplay Bolace (); else System outparolla ("inggernt Bolane") class Bonk & public static good many (Aug axX) stating Culoner Name double Acro, Balonce! double ant ant!

	Date
	Scand in polars (special)
	Scorner in- produce (eggen in);  system out: println ("Ento pare:");
-	Customa Name = in nat ();
	6975
	system out printle ("Ente Mano");
	ACC No = in. Post Power ()
	System. out. petalle( Enter Elone )
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	sylem. Out porula ("otocromtto w. hola);
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ta listi = often; itt) System out paints ("has designed short item) - system out part on "None"); Sight at girth ("USN"); Ush [1]: SI rot(); Aysta at pinten ("Sten"); sen [i] = 81. pert Int(); Ayrenad porth ("Satambard Nake for Cover") (mt 1=0; 1 = ); (+1) Indee at pertle (aug + (j+)+ in) System out benefit (" Entaintend nothe faternoon) for (120) (45) ] (+1) See Mels [1](i) : Bl. rext [ntl); 1/11 CICO Androys = new In[n[s]; for( in 1 =0 ; 14h; 1+t) Interest of the Interest (motified () son the Exhalf := new Bokoh (hoseli), van P. MoSil Mark Bx (1pt 1 =0/(45/17t) Know Cilly = 4 months Marches larves Blegat golde " Rid hat to" in + " Jacker

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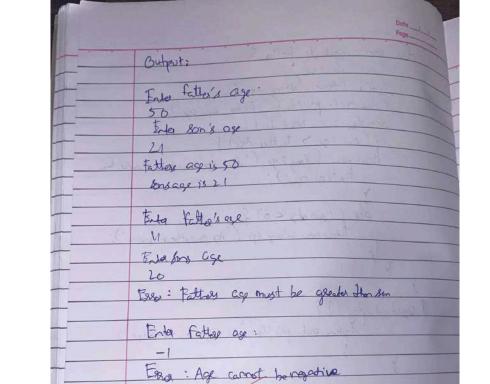
White a people that demonstrates harding of according inheritance face Coentra have chesically tolk and deviced clas called "Son" which extends in base class. In talky class, implement a construction taxes the age and through the exception likester when the input age so. In son class, implement a constructor that cases both fatter and lon's aged throws an acceptan if son's age is >= fallaren Import jour util . Score; Claus wong Age (stong poeces) {

apa (ronge);
} Class Input Scana & how Scanes (Sylen in) Class Father extends Input Scanna &

Father Hearn word the S

System out printle ("Enter Father one") latter tage = x. rext Int (); ((fallertge 40)) lif (faller/ge Lo) } Sylen at pinth "Father age is" + fattakel

4 Tatta S Heaview Wag Age ("Son og comits
Fatter og "); else if (son of se < 0) } There new wang see ("My consider regions void duplay () { Public class Frequent Hordling & public State with main ( String [ ] 298 agen out, pintle ( accopions" to set house ());



LAB- 8 Write a program which creates two thead, are thead displayly "BMS college of Engineering" ance over the second and another displaying "CSE" ance ever two seconds. class Pipply Manage Thead extends Thank & petral final oftening mesage; prate find long model; Diophy Mossy Thead (String houses long rateral) & this intend - intuals public boid sun (15 they & while (the) & System at prith (marge); Thend sleep (interal); System out postell (Tred Coopy Took), of Novel) "Intoroped"); Public Clar Main & public static reid man Brig [] as ) S Diplog Marcy Tend Head = rew Durby Marcy Tend ("Ens College of Engineering"/ 10000) / Display Marco Lead ("SE", end)

tend? sot Name ("Thread!") thered) start(); Heedz. Stort (1; Jend Meep (3000);

3 Catch (Interrupted Exception e) &
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Output CSE Brs colleg of Bossows CSE CSTE (512 CSB CSE bus college of Byrocotic CSR CSE CSE Main thought existly Thought intamphol

LAR- 9 White a program that make a war interior to paper Integer divisions. The War content to number that the kst fields, Man and Num. The dissin of Home and wom? is displayed in the Roult gold with the Divide button is clicked. If News appear was not as lateger, the program Lad how a run ford Exception. If Name was no the profes to all too on outhors to Exception Display the magnin harmondish import jour sury. ; irput java ant +; I'mgt fava and that " class Sung Demo & Suig Dans () 5 I Fore of fine her I ha ( ' Bride Apr'); Strangersize ( UTS, 150); ifter set begant (new Flow Lagout ());

Jen set pefult clue apoleta (7 From BitON CI glasel glas = new I label ("Enter dedicate address J Text Pield ajtf: rew Jest Fred(0); J Text Mild bytf: new Jest Ridd(0); I Rotton bitton - new J Botton ("catulate"); I Lasal elu = new 3 lasel (); I Lapol alab = new Ilabel (1) 7 hold Llab = new Jasol () I have and = pew label (1)

iten add (ex) the odd (jlob) 1 fm add (a1H) fra odd (byl) ( for add ( Litter), Alm all (alds); An od (blob) ith ado ( and ) Action Lightener | = new Action Literal) } Ablic void action Regard (Adm Frest at) & sight out profile Chetia act for all a it ( - add tetres Ligherer (1); by If dod Artin Listers (1); betton add tehn Lyten (ray fet a lister 1) } public road action Reformed ( Action Burnt out) int a : Takyo post Int (aith eget Text (1)); int on = 0/3 alos sel text ("In A ="+a). bles . of Tal ("In B=" 16); core los del Text ( m/ = 1+01); Eater (Nillisa Bud Breephone) & a lab fet Toot blos ref Text (") ey set test (" price only breas")

Surjag Utilities · involve las (non Kronsed) §

public void pan () §

here suring pan ();

\$ ); output Enter the dividerand divided 20 A=20 B=4 Au=5 Calculate |

Bota the driver and divided 30 Coloubs 10 B should be non zoo AWT finctions! 1. If game: It is a class in Jone that is ported the coming library. Which is used for centry graphical use interference in Jone applications 2- det Stre V: set size () is a relbod which is word with Compensis such as I fore I pred ok built for dire 3. Set Logart 1 - It is a method which is used to set the largest man for a continuo companio such as 4. Ilobel: It is a class which is used to display
how - Dileble text a max on 602 5. Let default close openha: It is a retrod in Jane swing used to spently the default close openhan for a Those b I ket field: class in Jac hing Prader a less injury fireld in a but Italians user to arks and off single text the. 6-02-24 peneration interpreter commission of head below clay & S Goden value Set: pale synchronized int get () { while ( I value Set) sylon ad printle (" h (coung la try la")) (Jai+(); 3 catch ( Enterepted Excepter e) {
Sophin at prille ("Interepted Excepter Complet); Sylen out printle (" Got: "+n); value set = file; spen at printly ("In Interest Balcala"); notify (); Sedon hi synchearyized void put (int o)? while (velve set) Sylen at protes ("In police indy In"); I Cat & (Interpled Exception c) &

John out probled "Interpled Exception capter"; Spen out pentle "fut "th);

Splon out , pindle (" hIntmote Constreel ("); notify(); class Poolice Implement Remarks & produce (Qq) & hew Thead (this, "to robrow") - stort (); public word Run(18 int : 0; While (1215) 9 g - put (i++) ; Clas Coruner implements hunneble & course (Qq) 5 this a = 9 (this, "chang"). Start(); Public Loid Run () & 1ht 1 = 0% While(ICIS) { late = 9. Set (); Syten aut put la ( cosured 48);

Jas Main & Bullic State word rain ( Stary og [ ]) } her perduca (2); Expler out for Un (" poex Contol-C tostor"); not excuted

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Dead lock appearing a void for (Bb) & Jen 30 - Thead (what Theall) get Markly thread steep (1000) cath (Broghin e) {

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Atring none = Thread. Culent Thread() get Name();

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hyler out pair I h ("B prempted"); System out pintle (rang + "taying to call A. lotto")

3 System out puller ("I raple A last"); clas bedlock implements purcobie b: 14 BO; Dead Jack 19 Theed (year) Thread (). Sot None ( 'Main tear! ) Thered E = Non Theed (this " Recing Thead") bublic hold main (15 b ber (a): sylen. out fintle (" Backin atte Harred"), public static rold main (string osel ) new Resollock ()? Output: Main Thread entered A too Racing Thrond entered B. box Main heard taying to call Blat 1) Insde 1. lat rack in main trend Feeling Theod teging to call a last (1) Inide Atat Book in odho Neval