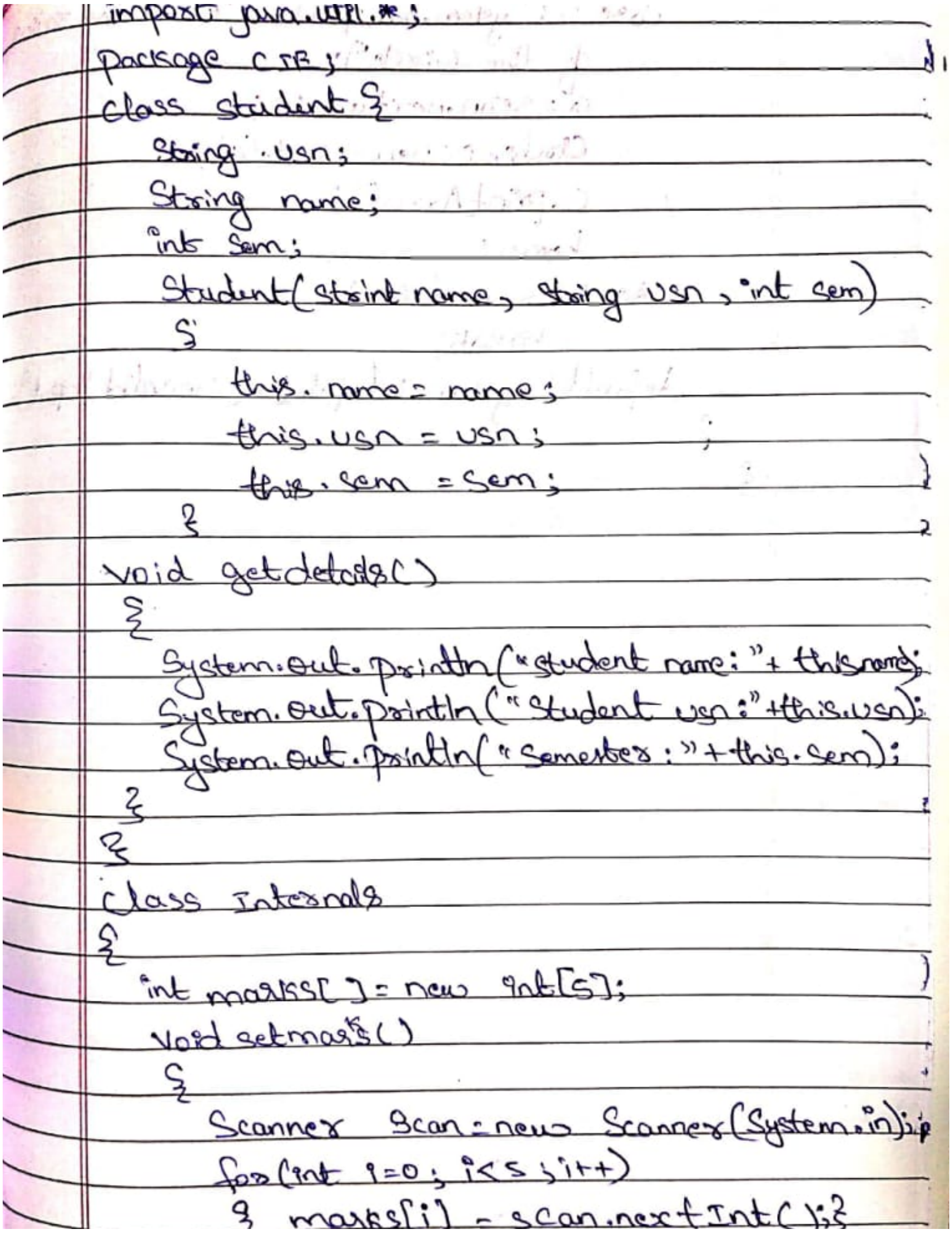
OOJ LAB REPORT

NAME : VASANTH KUMAR T
USN : 1BM19CS180
SECTION : D
SEMESTER : 3rd

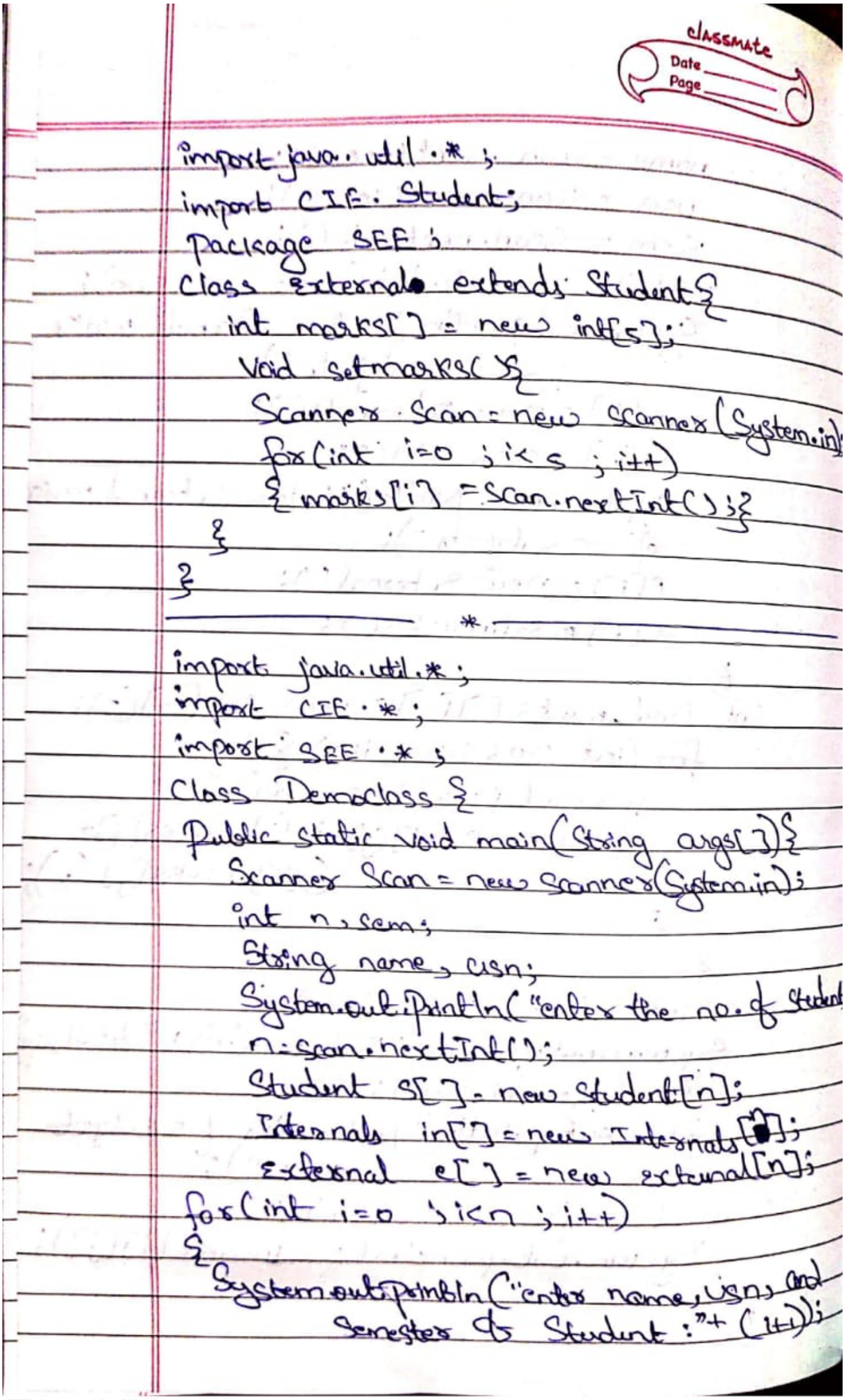
LAB 6

QUESTION : 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



```
import java.util.*;
package CIE;
class student {
   String usn;
   String name;
   int Sem;
    Student(stboard name, String usn, int sem)
     {
         this. name = name;
         this.usn = usn;
         this. sem = Sem;
     }
void getdetails()
  {
    System.out.println("student name:"+ this.name);
    System.out.println("Student usn:"+this.usn);
    System.out.println("Semester:"+this.sem);
  }
}
class Internals
{
  int marks[ ]= new int[5];
  void setmarks()
   {
      Scanner scan = new Scanner(System.in);
      for(int i=0; i<5; i++)
       { marks[i] = scan.nextInt();}
```

Caption



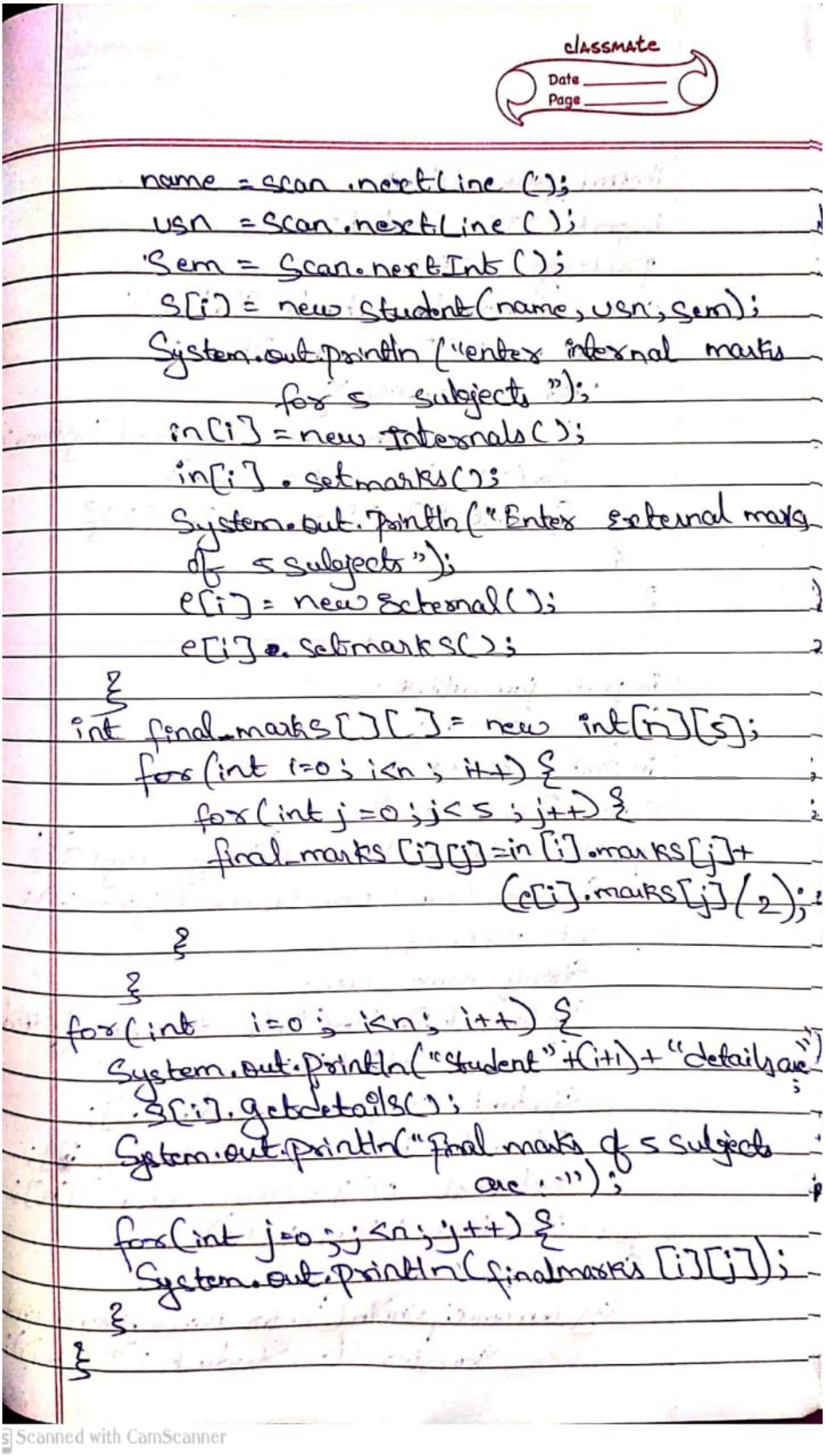
```
import java.util.*;
import CIE.Student;
Package SEE;
Class External extends Student{
  int marks[] = new int[5];
   Void setmarks(){
     Scanner Scan = new Scanner(System.in);
     for(int i=0 ;i<5 ;i++)
     { marks[i] =Scan.nextInt();}
  }
}
```

―――――― * ――――――

```
import java.util.*;
import CIE.*;
import SEE.*;
Class Democlass{
Public static void main(String args[]){
   Scanner Scan = new Scanner(System.in);
   int n, sem;
   String name, usn;
   System.out.println("enter the no. of student
   n=scan.nextInt();
   Student s[] = new Student[n];
   Internals in[] = new Internals[n];
   External e[] = new external[n];
for(int i=0 ;i<n ;i++)
{
 System.out.println("enter name, usn, and
         Semester of Student :"+ (i+1));
```

Caption

students in all five courses.



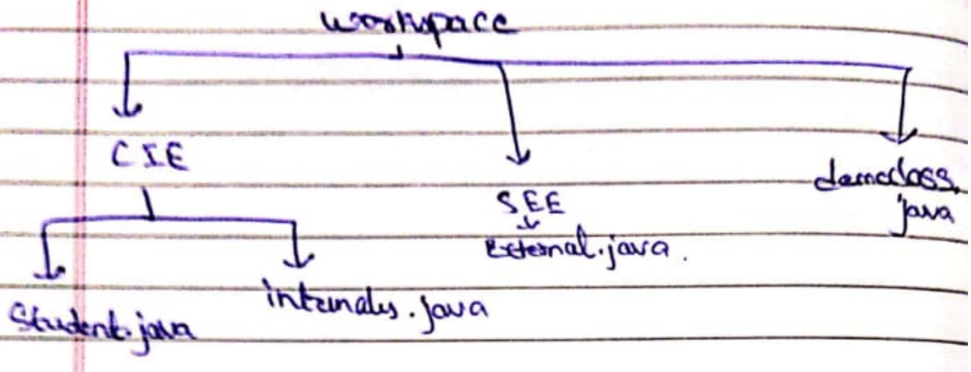
classmate

Date

Page

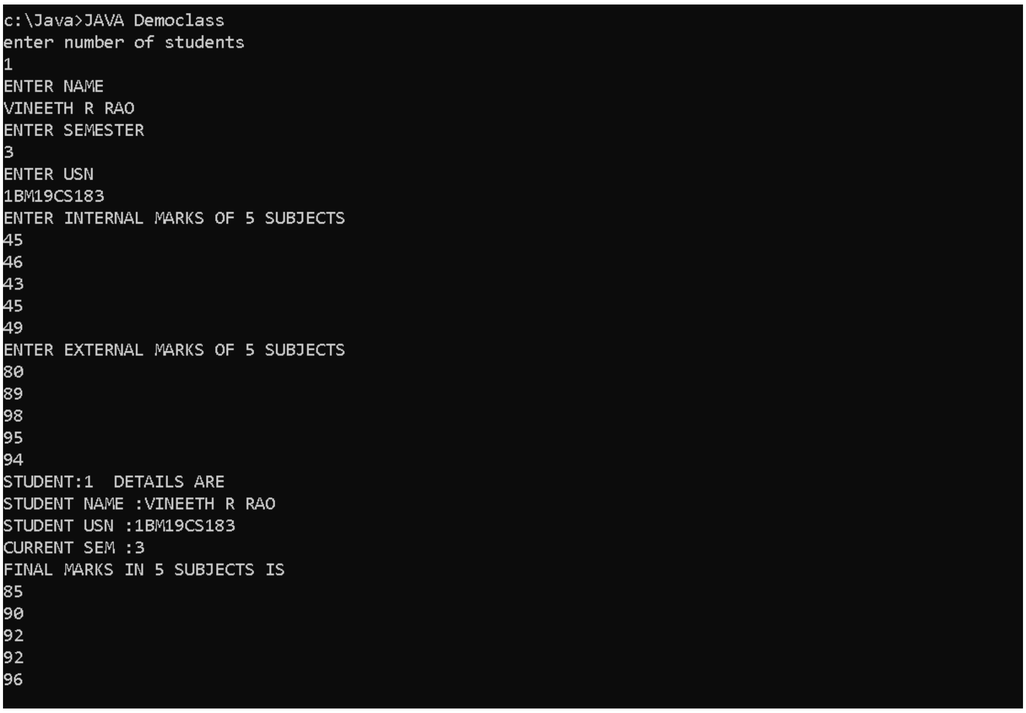
```
        name = scan.nextLine ();
        usn = Scan.nextLine ();
        Sem = Scan.nextInt ();
        S[i] = new Student(name, usn, sem);
        System.out.println ("enter internal marks
                for 5 subjects ");
        in[i] = new Internals ();
        in[i] . setmarks();
        System.out.println ("Enter external marks
        of 5 subjects");
        e[i] = new External();
        e[i]. setmarks();
    }
int final_marks[][] = new int[n][5];
    for (int i=0; i<n; i++) {
        for(int j=0; j<5; j++) {
            final_marks [i][j] = in [i].marks[j]+
                            (e[i].marks[j]/2);
        }
    }
for(int i=0; i<n; i++) {
    System.out.println("student"+(i+1)+"details are");
    S[i].getdetails();
    System.out.println("final marks of 5 subjects
                    are :");
    for(int j=0; j<n; j++) {
    System.out.println(finalmarks [i][j]);
    }.
}
```

Caption


workspace
CIE
SEE
democlass.java
Student.java
internals.java
External.java

Caption

OUTPUT

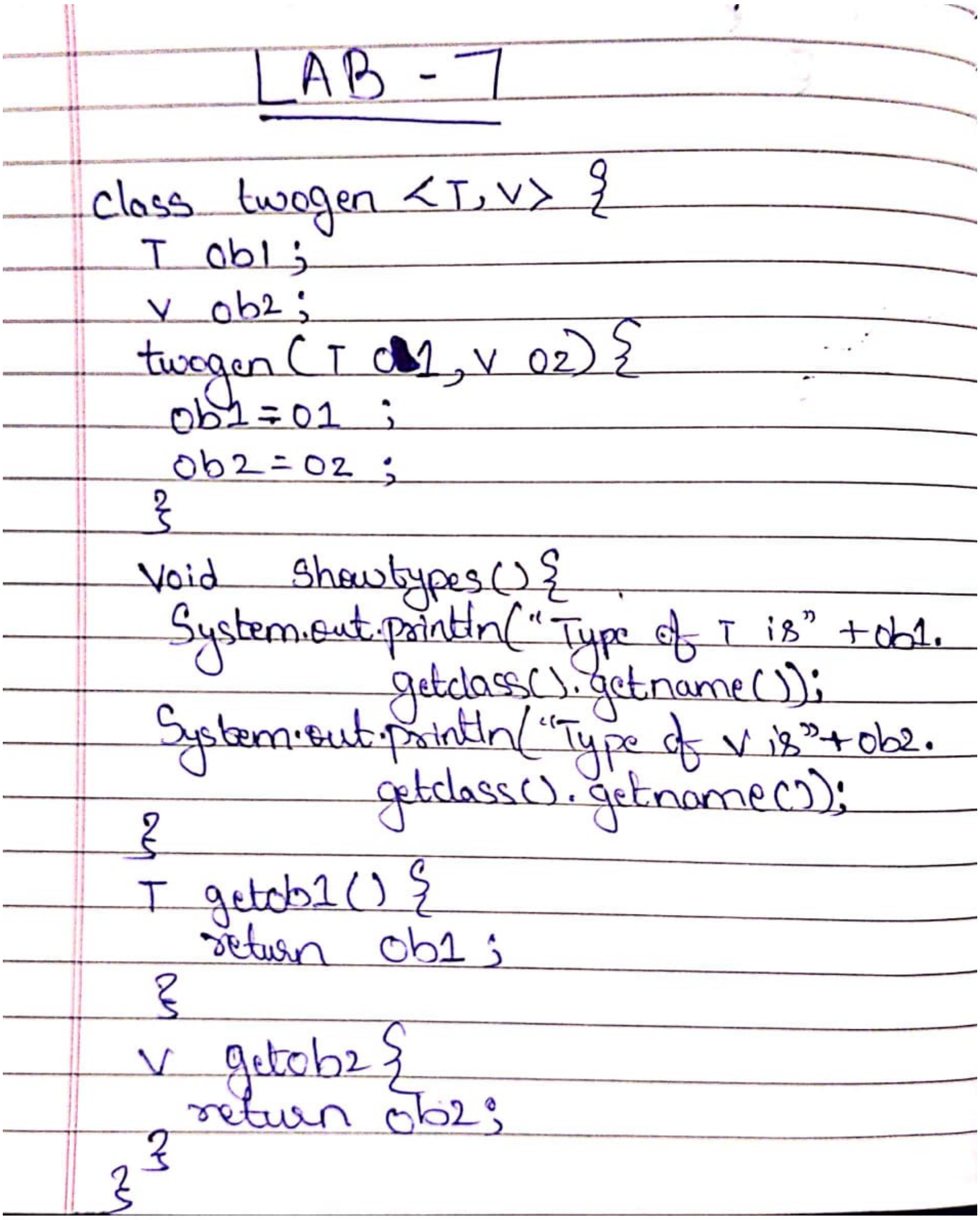


```
c:\Java>JAVA Democlass
enter number of students
1
ENTER NAME
VINEETH R RAO
ENTER SEMESTER
3
ENTER USN
1BM19CS183
ENTER INTERNAL MARKS OF 5 SUBJECTS
45
46
43
45
49
ENTER EXTERNAL MARKS OF 5 SUBJECTS
80
89
98
95
94
STUDENT:1  DETAILS ARE
STUDENT NAME :VINEETH R RAO
STUDENT USN :1BM19CS183
CURRENT SEM :3
FINAL MARKS IN 5 SUBJECTS IS
85
90
92
92
96
```

Caption

LAB 7

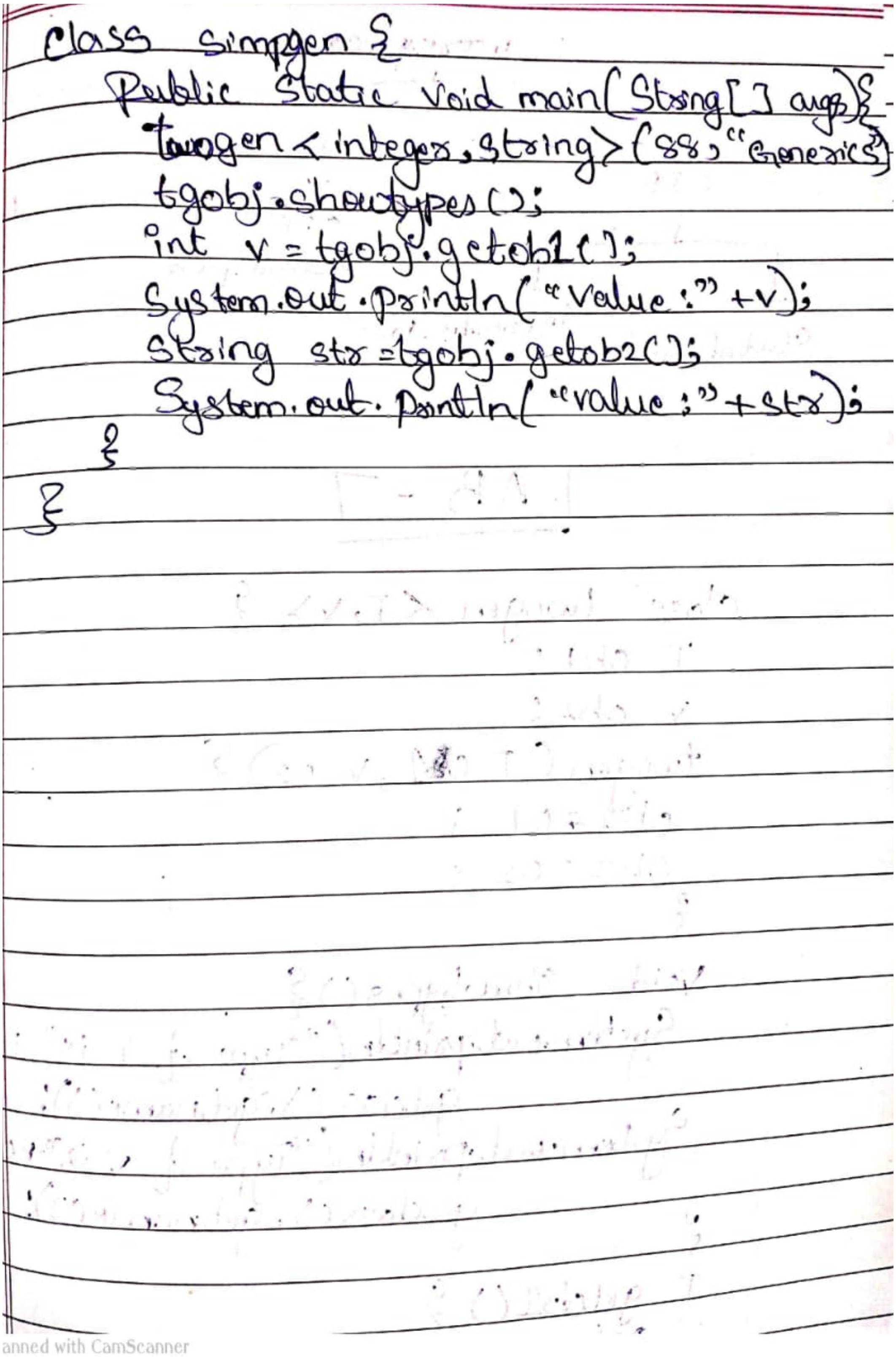
QUESTION : Write a program to demonstrate generics with multiple object parameters.



LAB - 7

```
class twogen <T,V> {
  T ob1;
  V ob2;
  twogen(T o1, V o2){
    ob1=o1 ;
    ob2=o2 ;
  }
  Void Showtypes(){
    System.out.println("Type of T is" +ob1.
                  getclass().getname());
    System.out.println("Type of V is"+ob2.
                  getclass().getname());
  }
  T getob1(){
    return ob1;
  }
  V getob2{
    return ob2;
  }
}
```

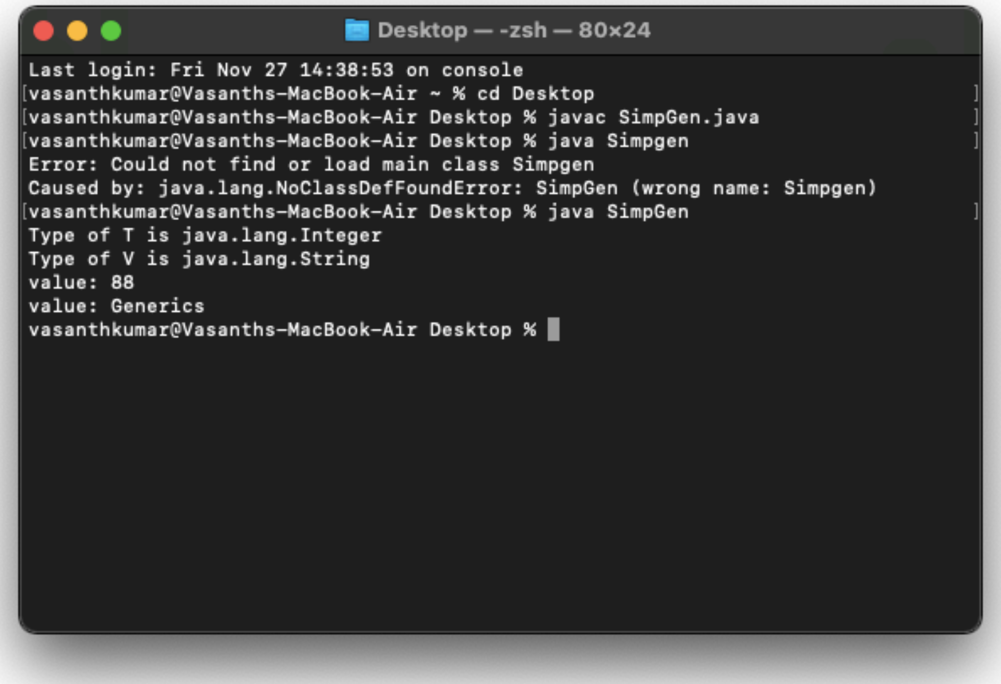
Caption



```
Class simpgen {
  Public Static void main(String[] args){
   twogen < integer, string>(88, "Generics")
   tgobj.showtypes();
   int v = tgobj.getob1();
   System.out.println("value:" +v);
   String str =tgobj.getob2();
   System.out.println("value:" +str);
  }
}
```

Caption

OUTPUT :

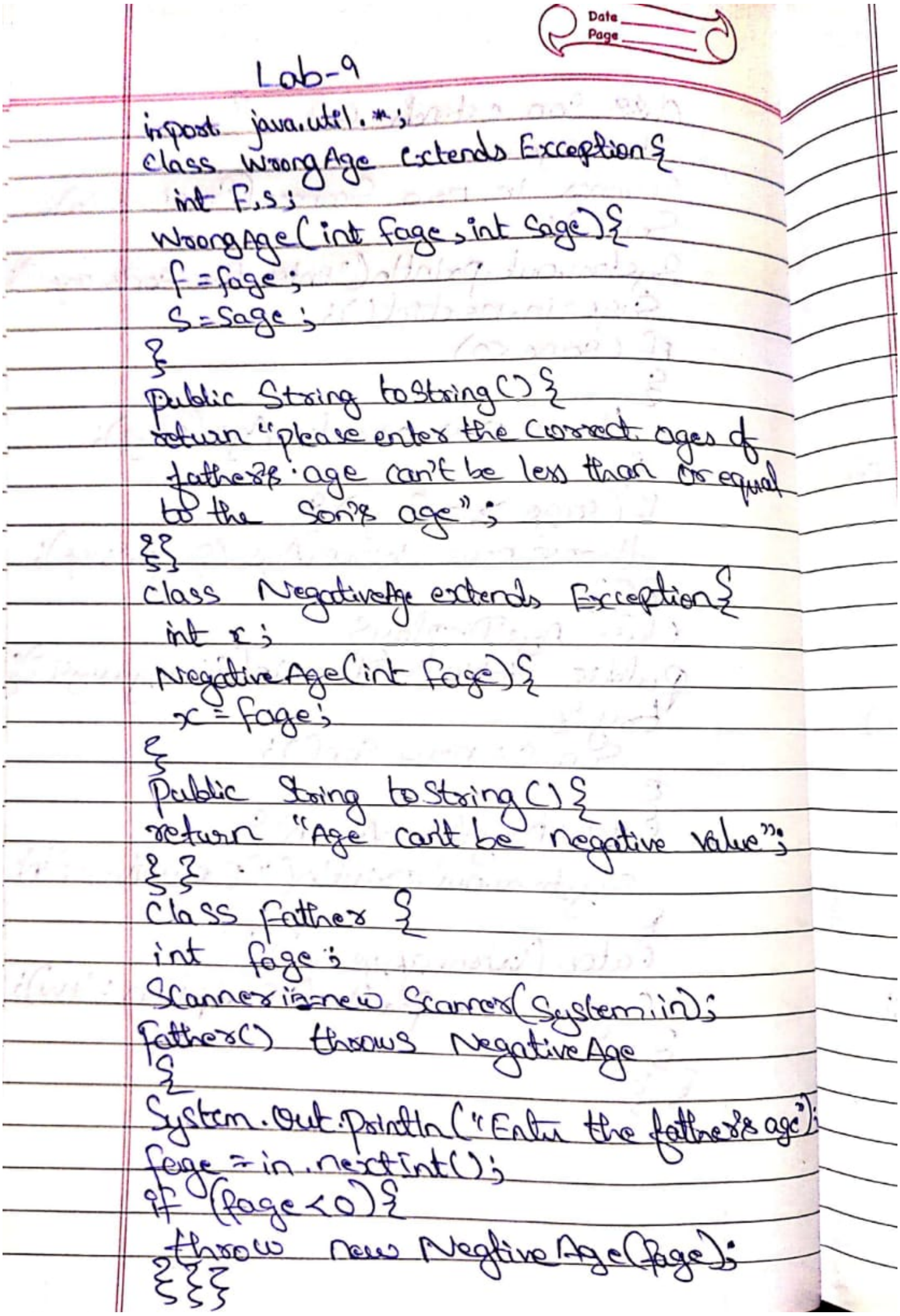


```
Last login: Fri Nov 27 14:38:53 on console
vasanthkumar@Vasanths-MacBook-Air ~ % cd Desktop
vasanthkumar@Vasanths-MacBook-Air Desktop % javac SimpGen.java
vasanthkumar@Vasanths-MacBook-Air Desktop % java Simpgen
Error: Could not find or load main class Simpgen
Caused by: java.lang.NoClassDefFoundError: SimpGen (wrong name: Simpgen)
vasanthkumar@Vasanths-MacBook-Air Desktop % java SimpGen
Type of T is java.lang.Integer
Type of V is java.lang.String
value: 88
value: Generics
vasanthkumar@Vasanths-MacBook-Air Desktop %
```

Caption

LAB 8

QUESTION : 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.

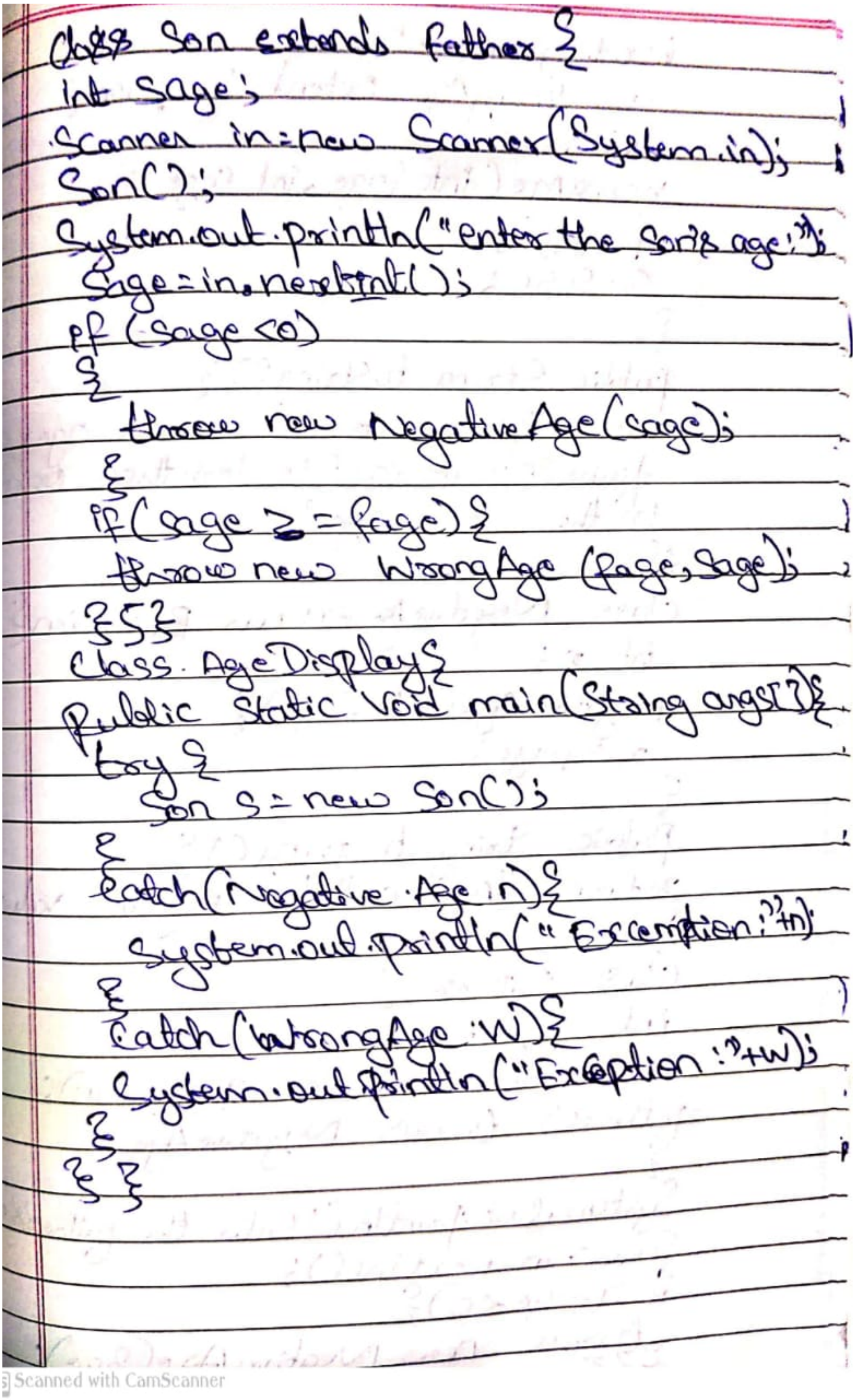


Date
Page

Lab-9

```
inport java.util.*;
class WrongAge extends Exception{
 int F,s;
 WrongAge(int fage, int sage){
  f=fage;
  s=sage;
 }
public String toString(){
return "please enter the correct ages of
 fathers's age can't be less than or equal
 to the son's age";
}}
class NegativeAge extends Exception{
 int x;
 NegativeAge(int fage){
  x=fage;
 }
Public String toString(){
return "Age can't be negative value";
}}
Class Father {
 int fage;
Scanner in=new Scanner(System.in);
Father() throws NegativeAge
 {
System.out.println("Enter the father's age");
fage =in.nextInt();
if (fage<0){
 throw new NegtiveAge(fage);
}}}
```

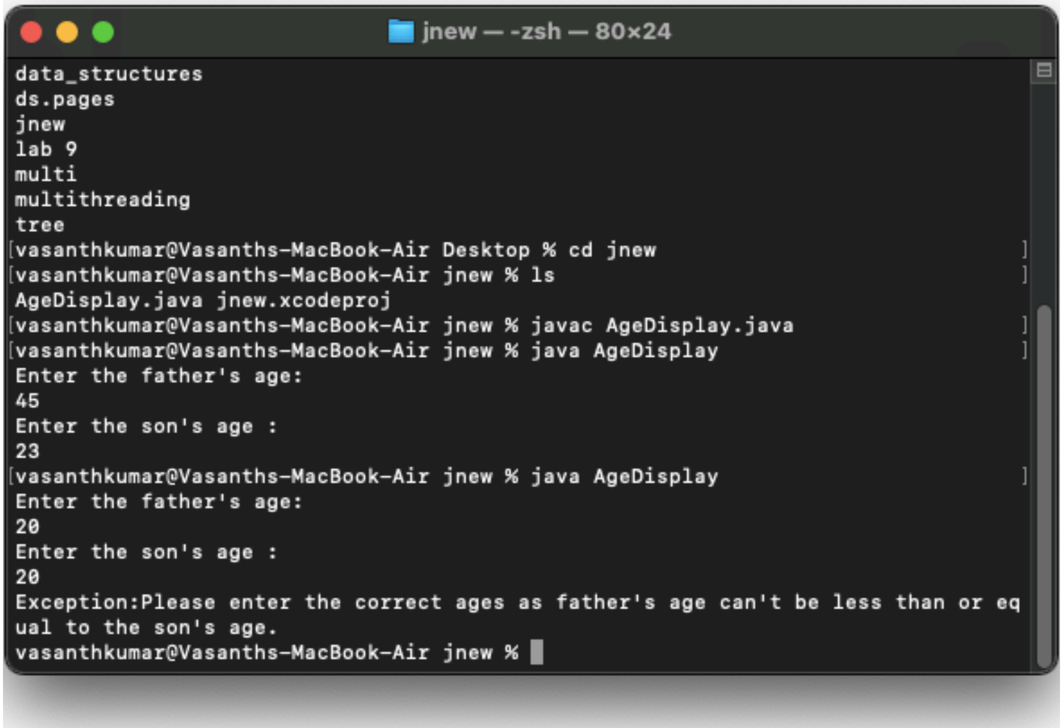
Caption



```
class Son extends Father {
int sage;
Scanner in=new Scanner(System.in);
Son();
System.out.println("enter the son's age:");
 sage=in.nextInt();
if (sage <0)
{
   throw new NegativeAge(sage);
 }
 if(sage >= fage){
  throw new WrongAge (fage, sage);
 }}}
class AgeDisplay{
Public static void main(String args[]){
 try {
   Son s = new Son();
 }
 catch(Negative Age n){
   System.out.println(" Excemption:"+n)
 }
 catch (WrongAge w){
 System.out.println("Exception :"+w);
 }
}}
```

Caption

OUTPUT :

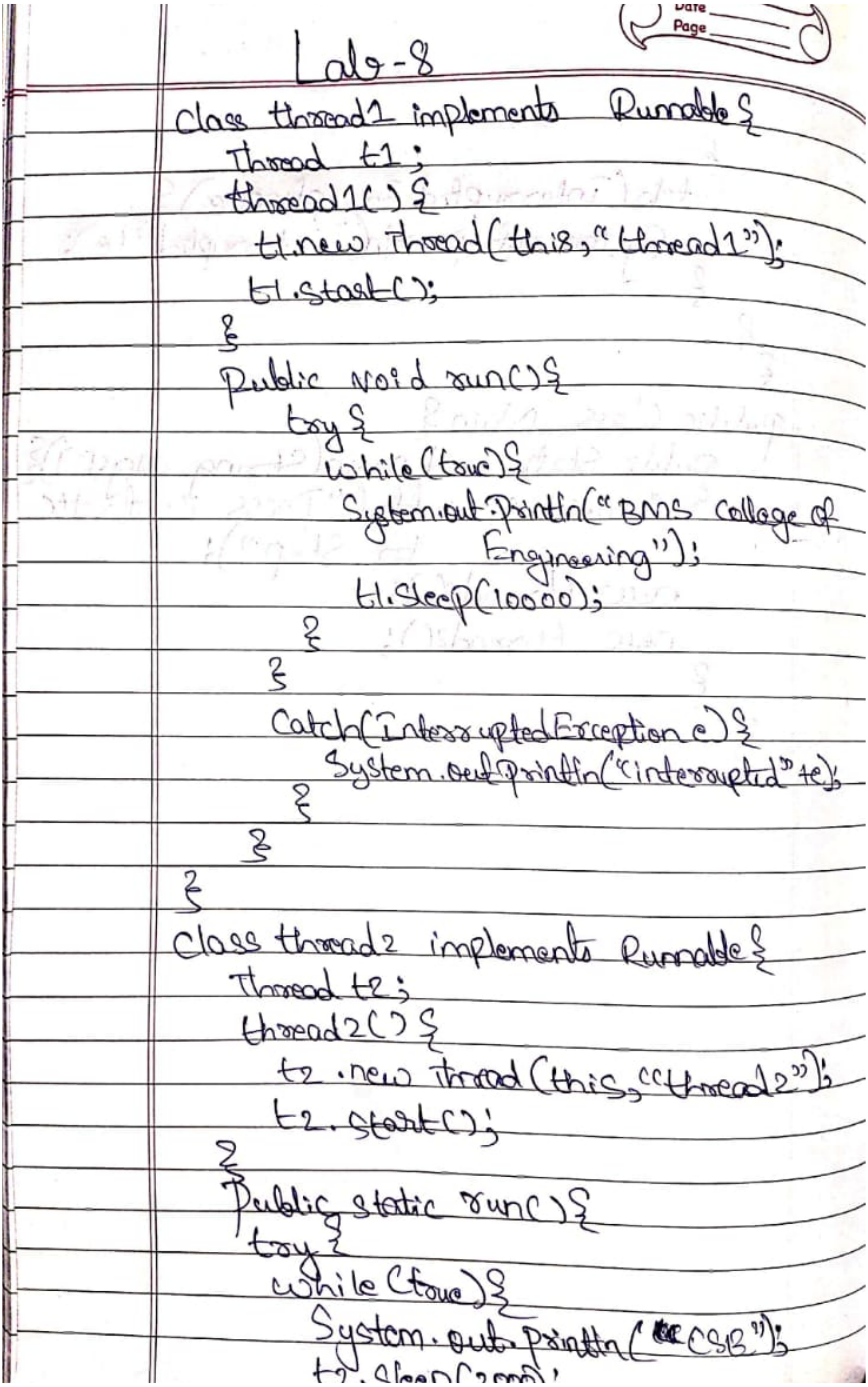


```
data_structures
ds.pages
jnew
lab 9
multi
multithreading
tree
vasanthkumar@Vasanths-MacBook-Air Desktop % cd jnew
vasanthkumar@Vasanths-MacBook-Air jnew % ls
AgeDisplay.java jnew.xcodeproj
vasanthkumar@Vasanths-MacBook-Air jnew % javac AgeDisplay.java
vasanthkumar@Vasanths-MacBook-Air jnew % java AgeDisplay
Enter the father's age:
45
Enter the son's age :
23
vasanthkumar@Vasanths-MacBook-Air jnew % java AgeDisplay
Enter the father's age:
20
Enter the son's age :
20
Exception:Please enter the correct ages as father's age can't be less than or eq
ual to the son's age.
vasanthkumar@Vasanths-MacBook-Air jnew % 
```

Caption

LAB 9

QUESTION : Write a program which creates two threads, one thread displaying “BMS College ofEngineering” once every ten seconds and another displaying “CSE” once every two seconds.



Lab-8

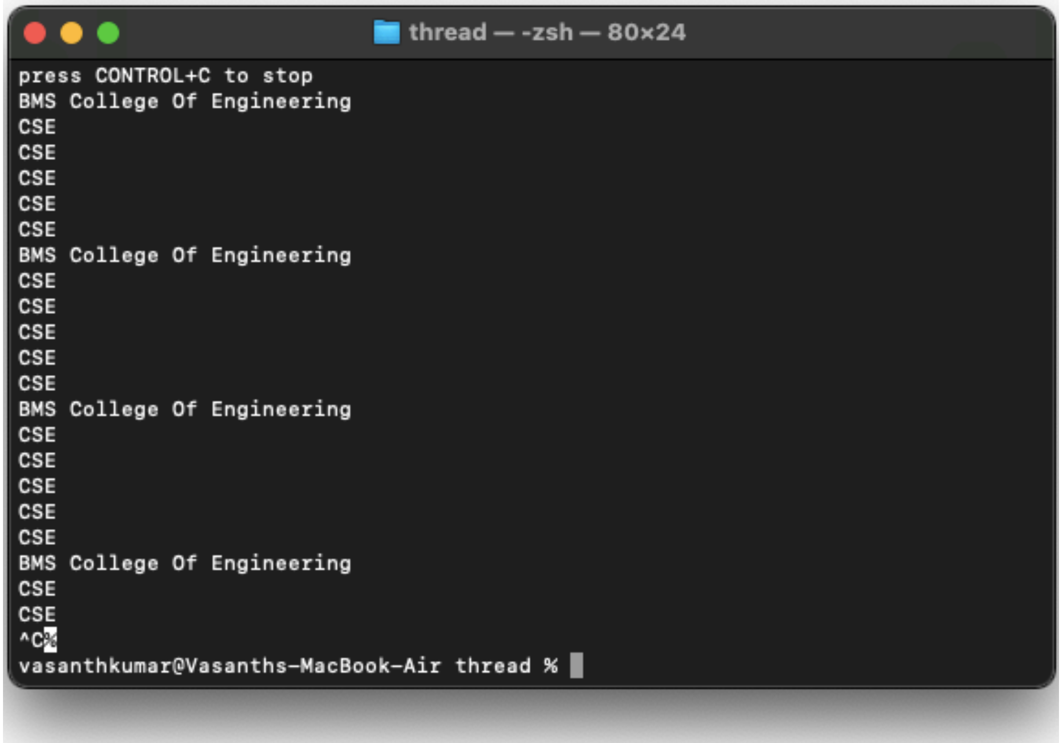
```
Class thread1 implements Runnable{
  Thread t1;
  thread1( ){
    t1.new Thread(this,"thread1");
    t1.start();
  }
  Public void run(){
     try{
       while(true){
         System.out.println("BMS college of
                        Engineering");
         t1.sleep(10000);
       }
     }
     Catch(InterruptedException e){
        System.out.println("interrupted"+e);
     }
   }
}
Class thread2 implements Runnable{
  Thread t2;
  thread2(){
    t2.new thread(this,"thread2");
    t2.start();
  }
  Public static run(){
   try{
    while(true){
      System.out.println("CSB");
      t2.sleep(2000);
```

Caption

```
    }
  }
  catch(Interrupted Exception e){
      System.out.printtd("interrupted"+e);
  }
 }
}
public Class Main{
   public Static void main(String args[]){
   System.out.println("Press Control+c
                    to Stop");
    new thread1();
    new thread2();
   }
}
```

Caption

OUTPUT :



```
press CONTROL+C to stop
BMS College Of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College Of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College Of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College Of Engineering
CSE
CSE
^C%
vasanthkumar@Vasanths-MacBook-Air thread %
```

Caption