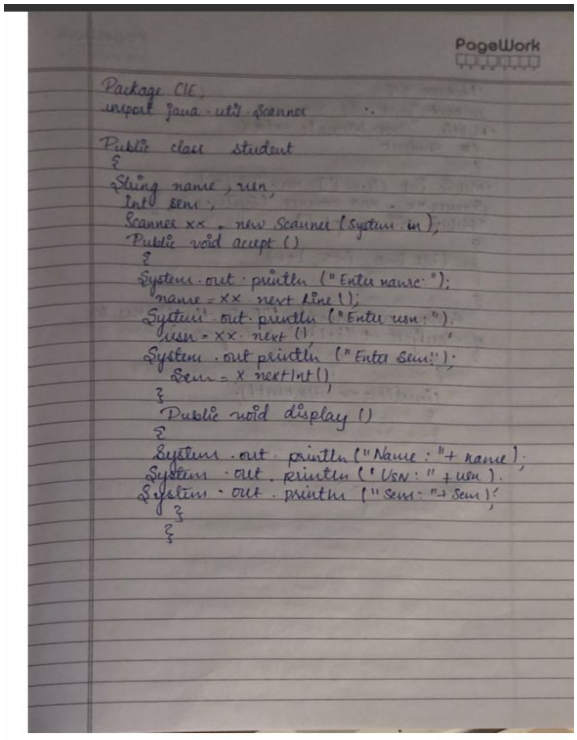
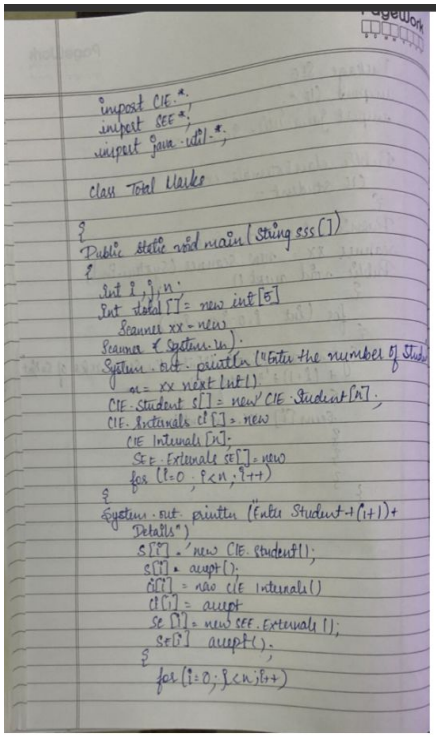
Lakshmi s kumar
1BM19CS078
OOJ PROGRAMS
LAB RECORD test -2

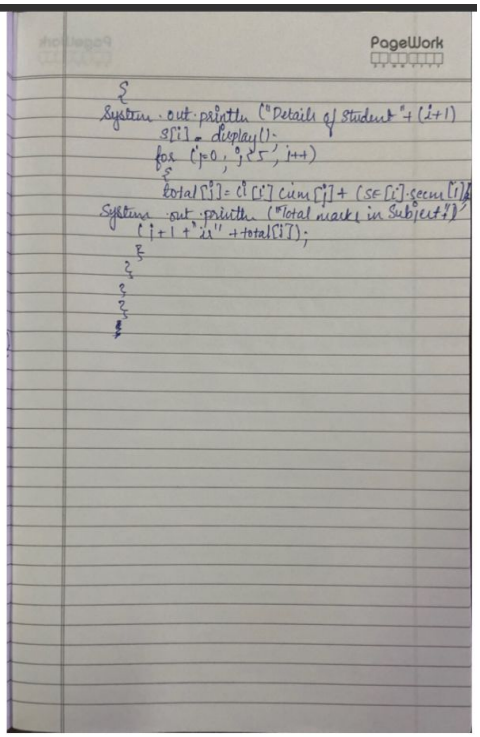
.Solve this program and write the procedure you have used to execute this in your observation

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.

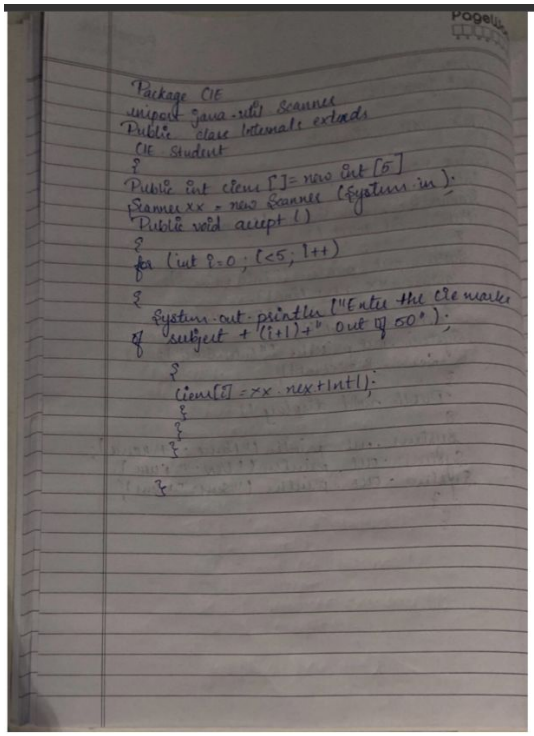




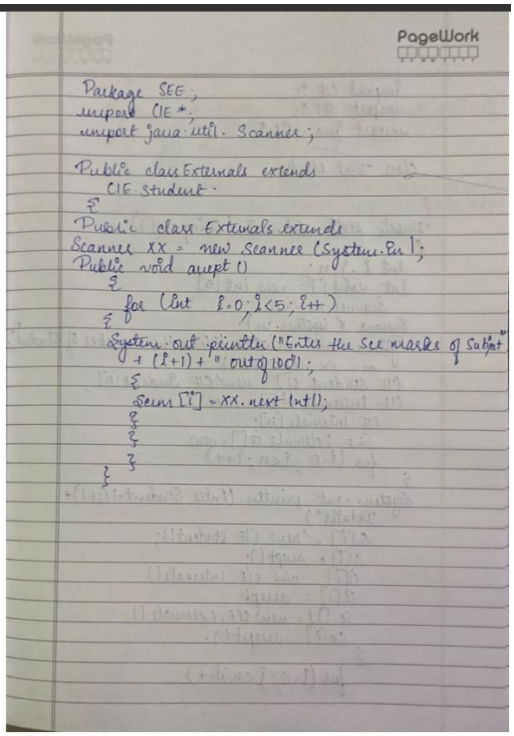
```
import CIE.*;
import SEE.*;
import java.util.*;

class Total Marks

{
Public static void main (String sss[])
{
Int i, j, n;
Int total[] = new int[5]
  Scanner xx = new
Scanner s (System.in);
System.out.println ("Enter the number of Stud
  n = xx.next Int();
CIE.Student S[] = new CIE.Student[n];
CIE.Externals ci[] = new
  CIE Internals [n];
  SEE.Externals se[] = new
  for (i=0; i<n; i++)
{
System.out.println ("Enter Student "+(i+1)+
  Details")
  S[i] = new CIE.Student();
  S[i].accept();
  ci[i] = nao CIE Internals()
  ci[i] = accept
  se[i] = new SEE.Externals();
  se[i] accept();
  }
  for (i=0; i<n; i++)
```



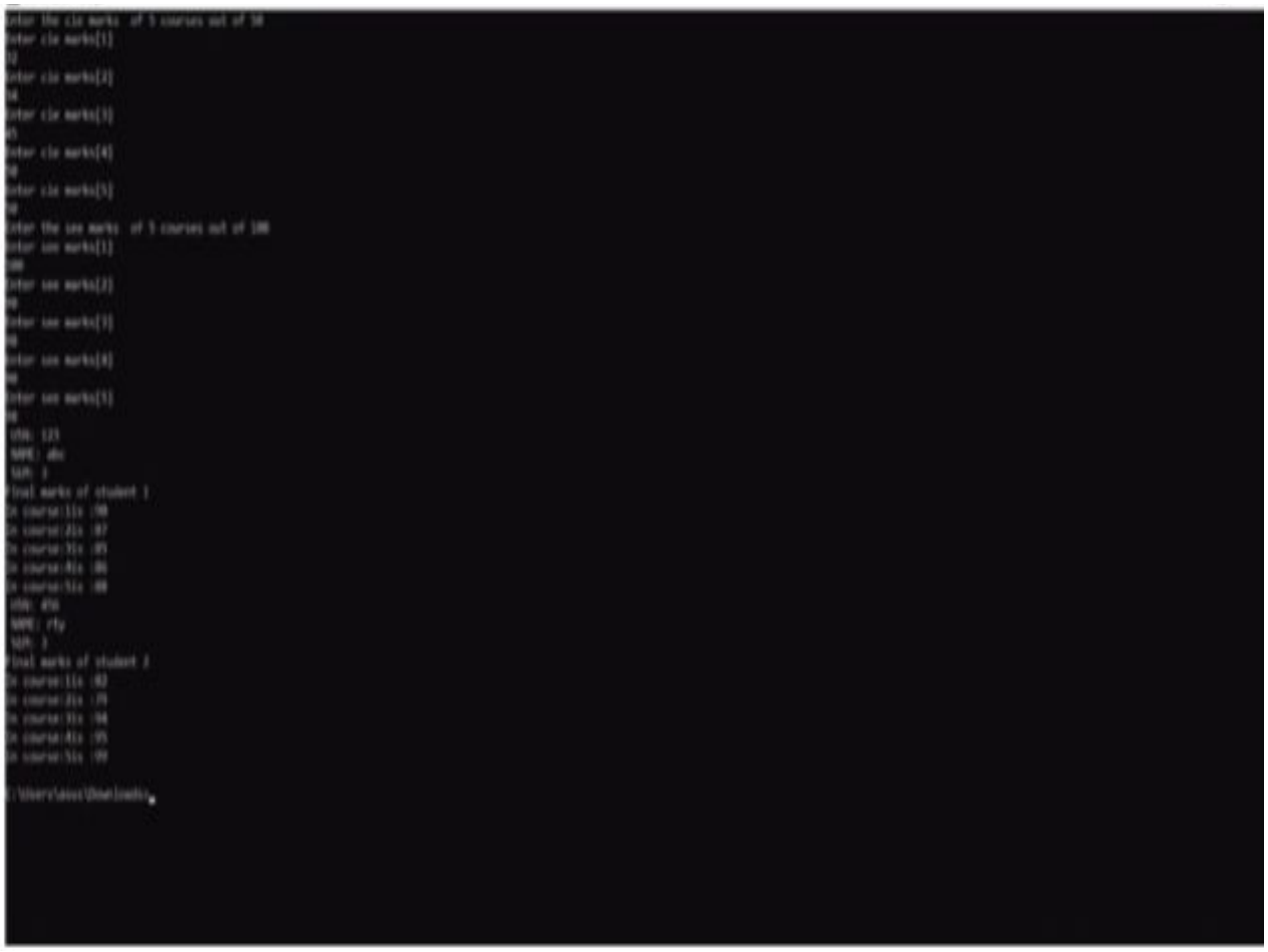
```
{
System.out.println ("Details of Student "+(i+1)
  s[i].display();
  for (j=0; j<5; j++)
  {
  total[i] = ci[i].cins[j] + (se[i].scms[i]
System.out.println ("Total marks in Subject "
  (j+1+"is" +total[i]);
  }
}
}
}
```



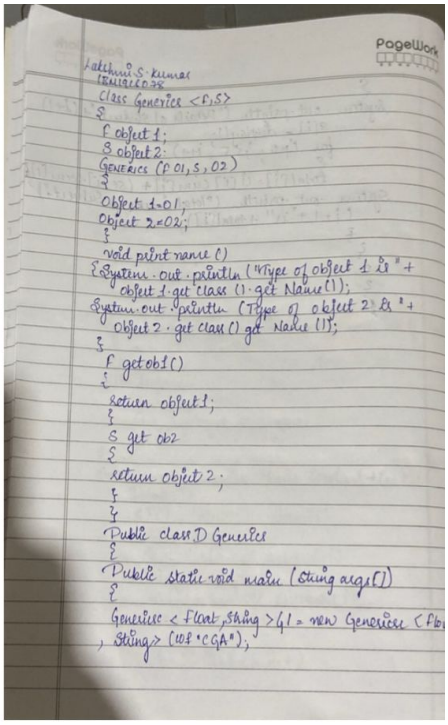
```
Package CIE
import java.util.Scanner
Public class Internals extends
CIE.Student
{
Public Int cins[] = new Int[5]
Scanner xx = new Scanner (System.in);
Public void accept ()
{
for (int i=0; i<5; i++)
{
System.out.println ("Enter the CIE marks
of subject "+(i+1)+" out of 50");
  {
  cins[i] = xx.next Int();
  }
  }
}
```



```
Package SEE;
import CIE.*;
import java.util.Scanner;

Public class Externals extends
  CIE.Student
{
Public class Externals extends
Scanner xx = new Scanner (System.in);
Public void accept ()
  {
    for (int i=0; i<5; i++)
  {
  System.out.println ("Enter the see marks of Subject"
    + (i+1)+" out of 100");
    {
    scms[i] = xx.next Int();
    }
    }
  }
}
```



7. Write a program to demonstrate generics with multiple object parameters.
8. 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 Wrong Age( ) when the input age=father’s age.



```
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Class Generics <F,S>
{
F object1;
S object2;
Generics (F o1, S, o2)
{
Object1=o1;
Object2=o2;
}
void print name ()
{System.out.println ("Type of object 1 is " +
object1.get class ().get Name());
System.out.println ("Type of object 2 is " +
object2.get class().get Name());
}
F getobj1()
{
return object1;
}
S get ob2
{
return object2;
}
}
Public class D Generics
{
Public static void main (String args[])
{
Generics < Float, String > G1 = new Generics < Flo
, String > (10f, "CGPA");
```
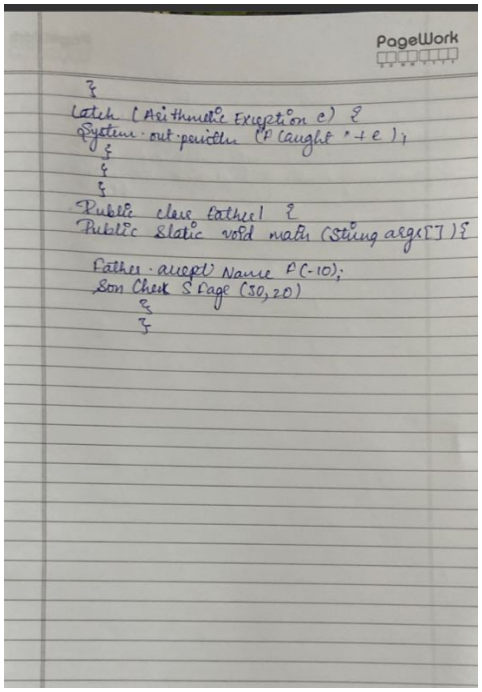
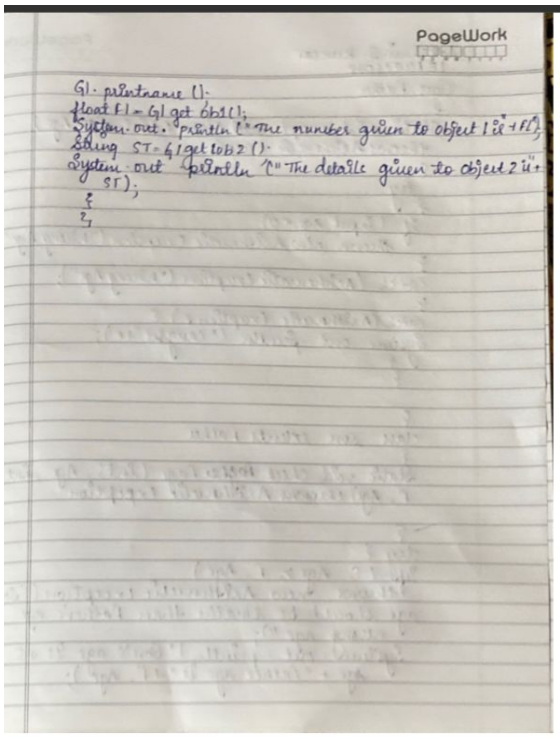
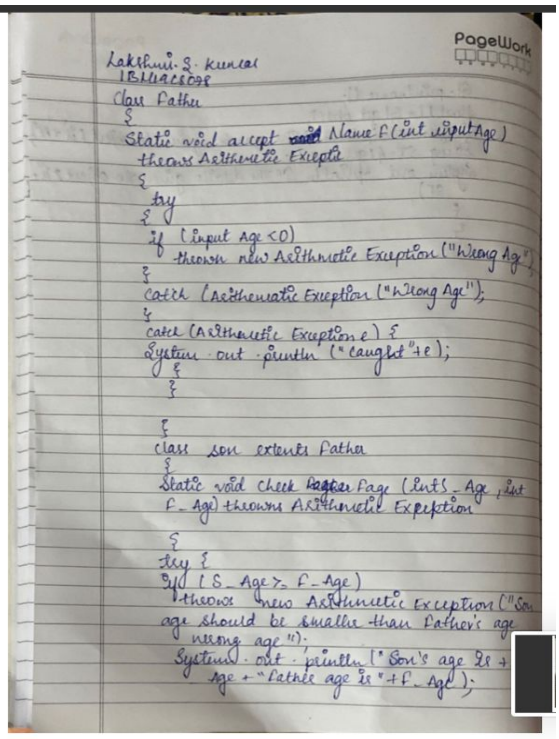



```
}
Catch (Arithmetic Exception e) {
System.out.println ("Caught " + e);
}
}
Public class Father1 {
Public static void main (String args[]) {

Father.accept Name P(-10);
Son Check S Page (30,20)
}
}
```



```
G1.printname ();
float f1 = G1.get obj1();
System.out.println ("The number given to object 1 is" + f1);
String ST = G1.get obj2();
System.out.println ("The details given to object 2 is" +
ST);
}
}
```



```
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Class Father
{
Static void accept Name P(int inputAge)
throws Arithmetic Exception
{
try
{
if (input Age < 0)
throw new Arithmetic Exception ("Wrong Age");
}
Catch (Arithmetic Exception ("Wrong Age");
}
catch (Arithmetic Exception e) {
System.out.println ("caught" + e);
}
}

}
class Son extends Father
{
Static void Check Father Page (int S_Age, int
F_Age) throws Arithmetic Exception

{
try {
if (S_Age >= F_Age)
throw new Arithmetic Exception ("Son
age should be smaller than Father's age
wrong age");
System.out.println ("Son's age is " +
S_Age + "Father age is " + F_Age);
```
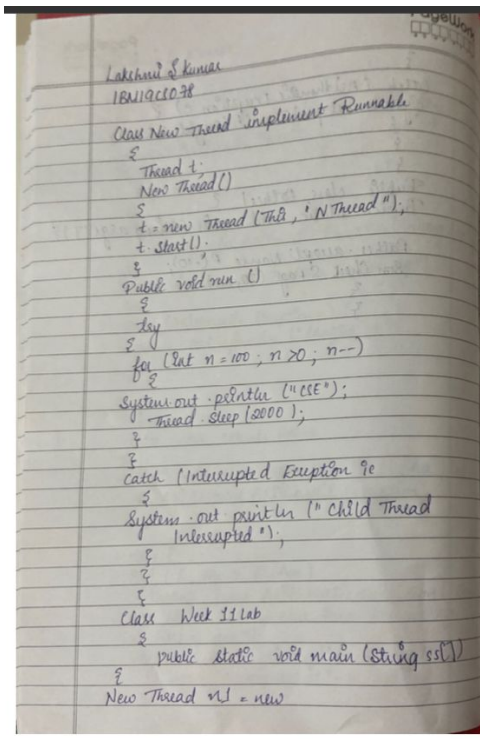

```
C:\Users\asus\Downloads>javac ExceptionHandling.java

C:\Users\asus\Downloads>java ExceptionHandling
Caught java.lang.ArithmeticException: Wrong Age
Caught java.lang.ArithmeticException: Son's age should be smaller than father's age ,wrong age

C:\Users\asus\Downloads>
```

```
C:\Users\asus\Downloads>javac DGenerics.java

C:\Users\asus\Downloads>java DGenerics
Type of  object 1 is java.lang.Float
Type of  object 2 is java.lang.String
The number given  to object 1 is10.0
The detail given  to object 2 isCGPA

C:\Users\asus\Downloads>
```

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.



```
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Class New Thread implement Runnable
{
  Thread t;
  New Thread()
  {
  t = new Thread (this, "N Thread");
  t.start();
  }
  Public void run ()
  {
  try
  {
  for (int n = 100; n >0; n--)
  {
  System.out.println ("CSE");
    Thread.Sleep (2000);
  }
  }
  catch (Interrupted Exception ie
  {
  System.out.println ("Child Thread
      Interrupted");
  }
  }
  Class Week 11 Lab
  {
    public static void main (String ss[])
  {
  New Thread n1 = new
```

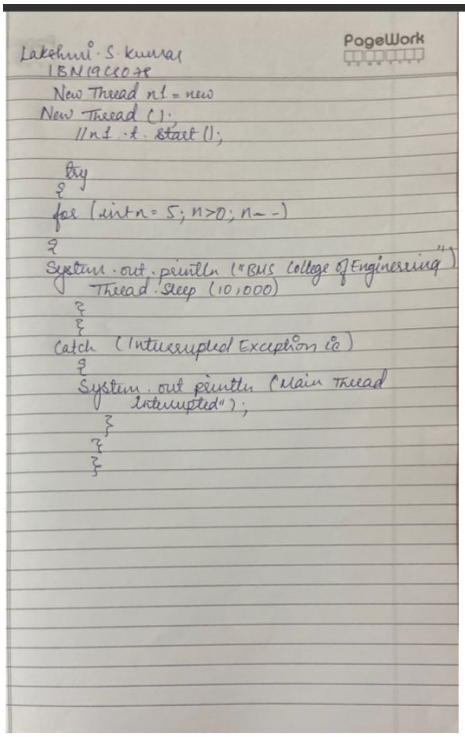

```
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New Thread n1 = new
New Thread ();
  //n1.t.start();

  try
  {
  for (int n = 5; n>0; n--)
  {
  System.out.println ("BMS College of Engineering")
    Thread.Sleep (10,000)
  }
  }
  catch (InterruptedException ie)
  {
  System.out.println (Main Thread
      Interrupted");
  }
  }
  }
```

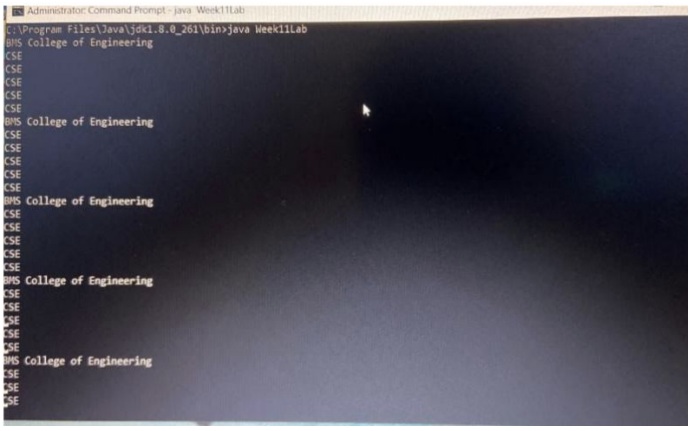

```
Administrator: Command Prompt - java Week11Lab
C:\Program Files\Java\jdk1.8.0_261\bin>java Week11Lab
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
CSE
CSE
CSE
CSE
BMS College of Engineering
CSE
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BMS College of Engineering
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CSE
BMS College of Engineering
CSE
CSE
CSE
```
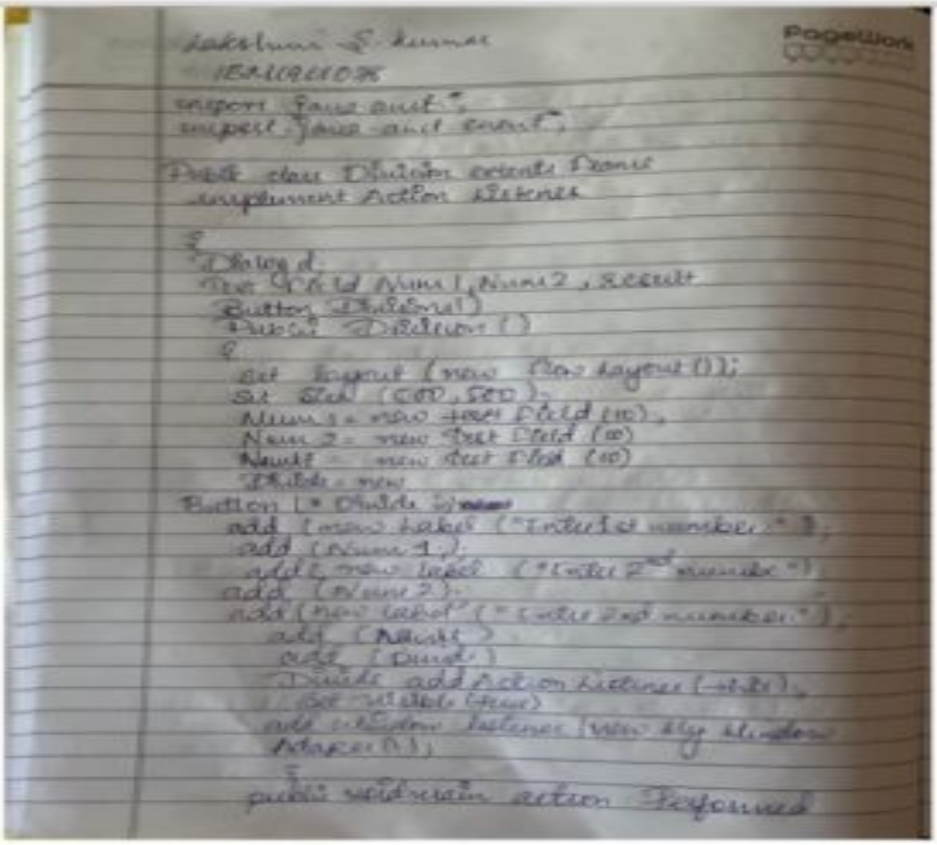

Write a program that creates a user interface to perform integer divisions. The user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num2 is displayed in theResult field when the Divide button is clicked. If Num1 or Num2 were not an integer, the program would throw a NumberFormatException.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



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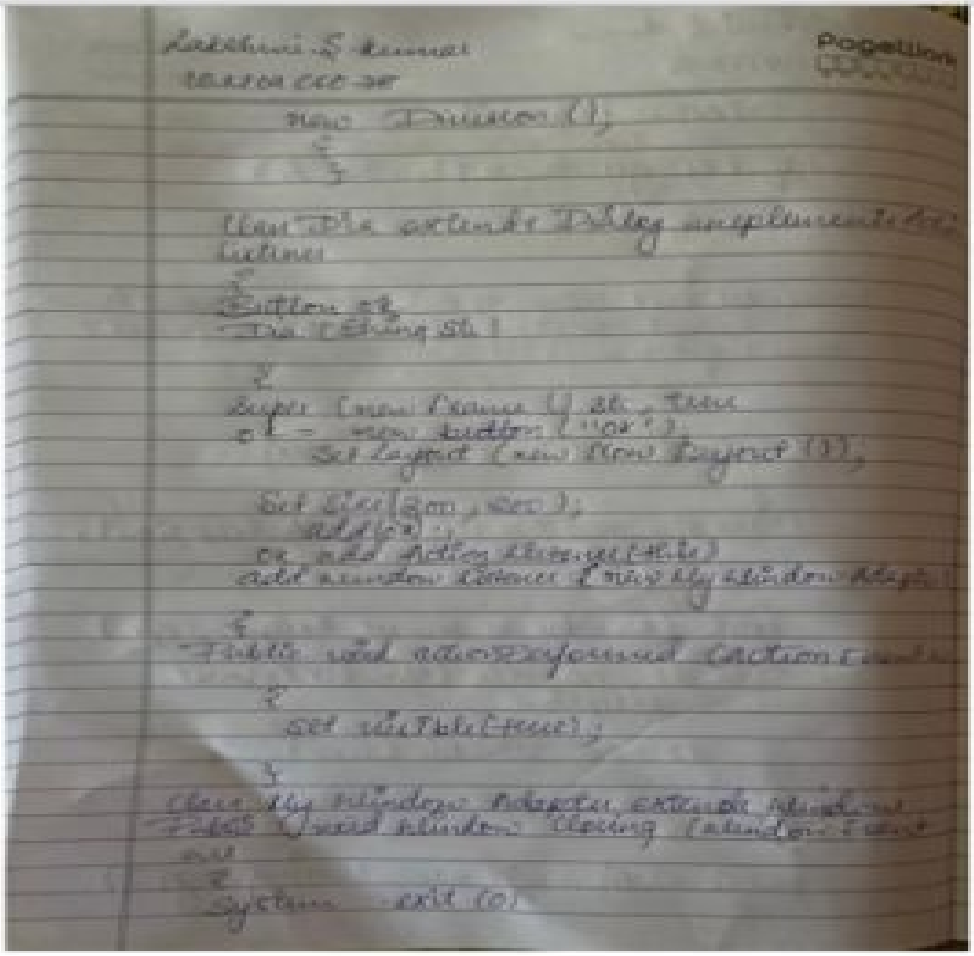
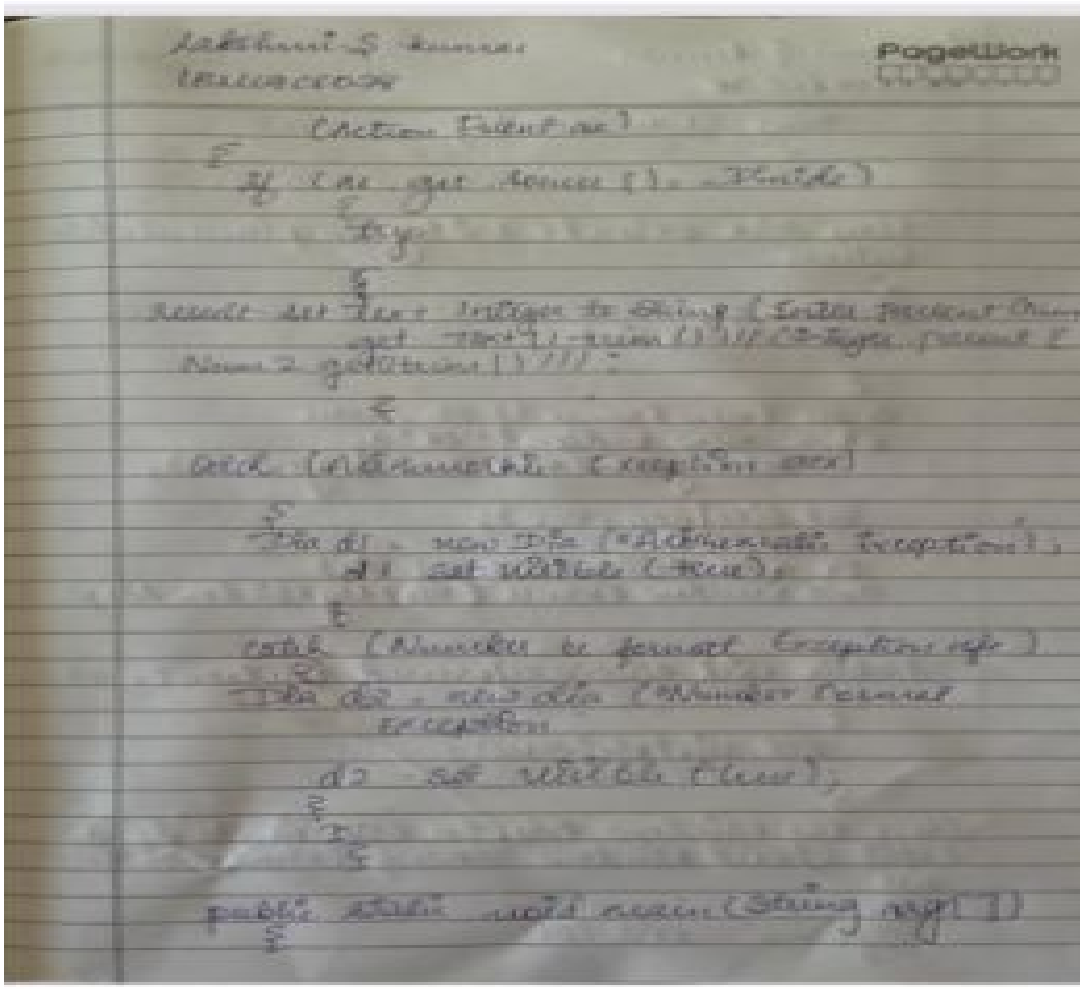
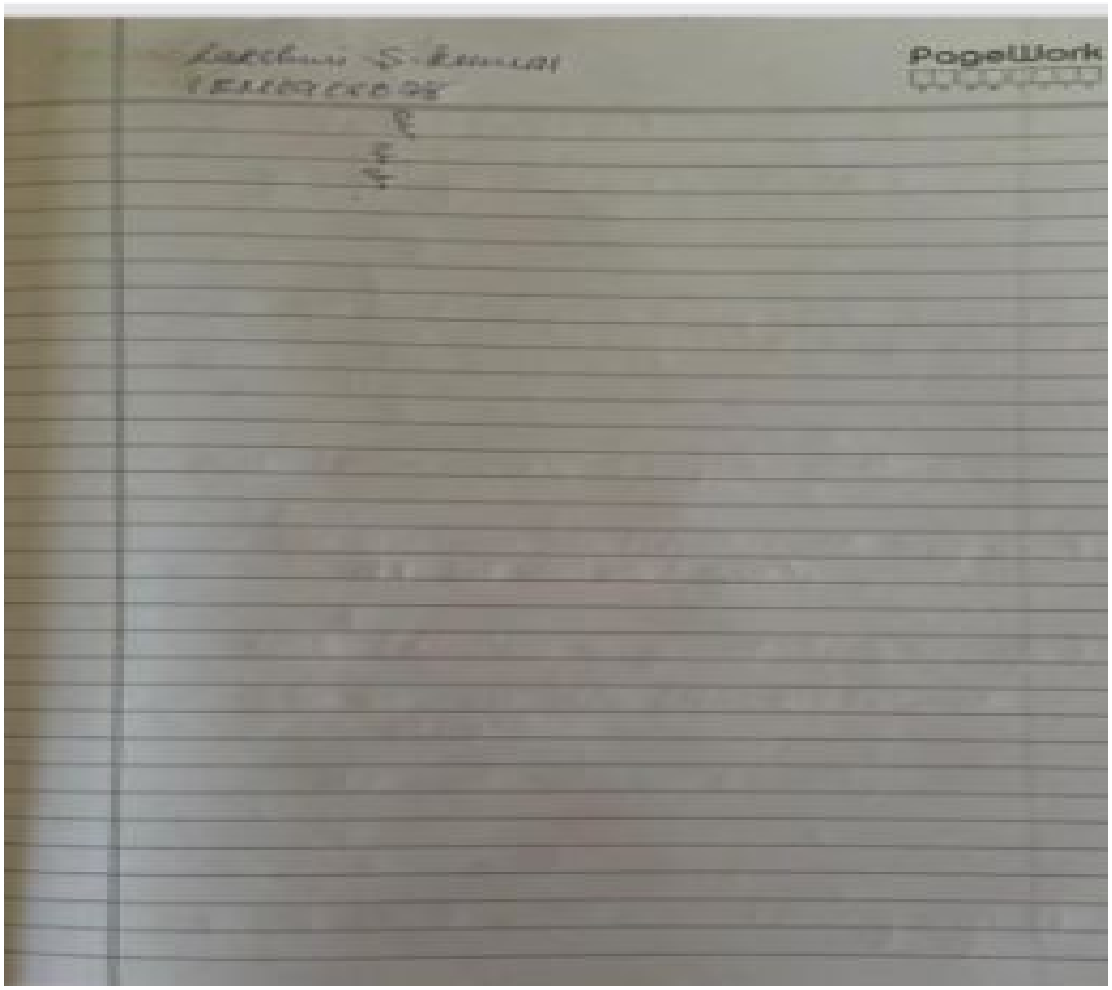
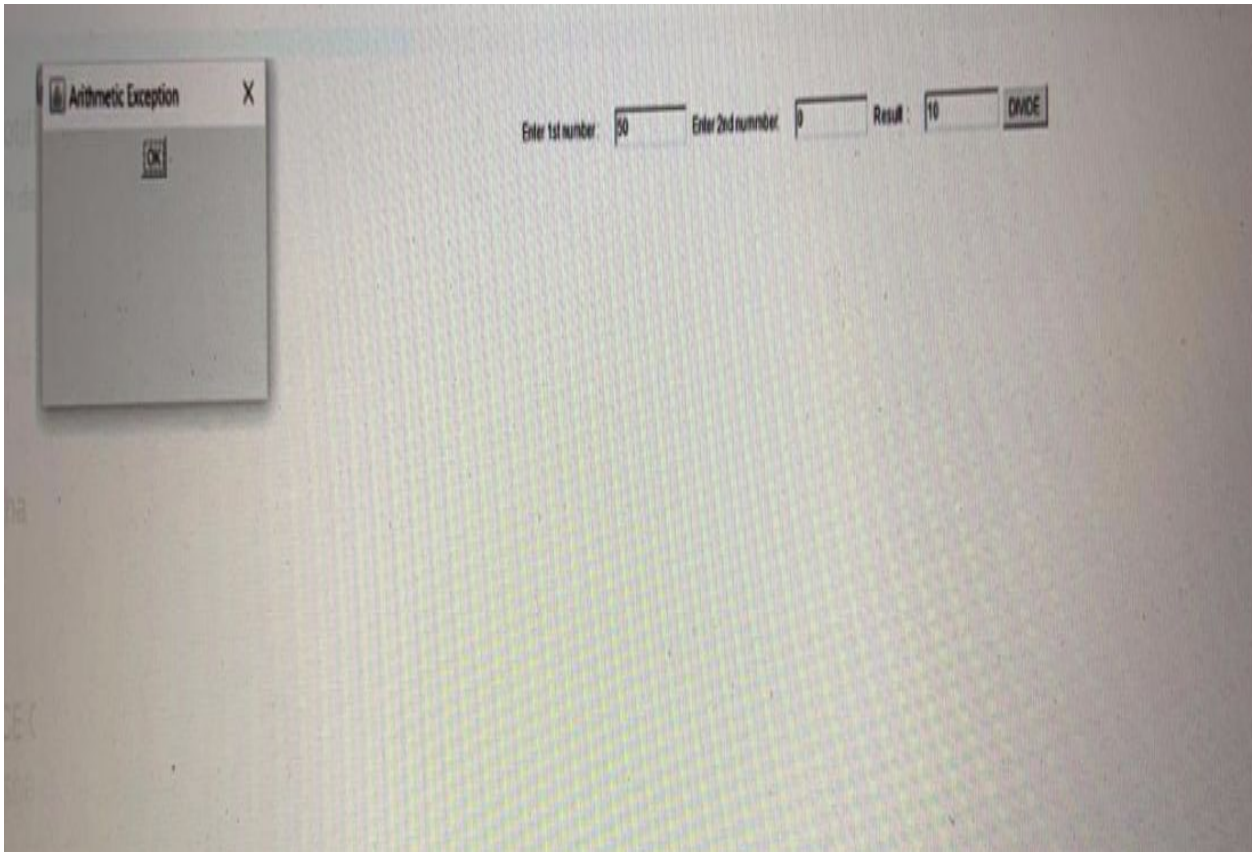
```
import java.awt.*;
import java.awt.event.*;

Public class Division extends Frame
implement ActionListener

{
 Dialog d;
 Text Field Num1, Num2, Result
 Button Division;
 Public Division()
 {
   Set Layout (new Flow Layout());
   Set Size (600, 500);
   Num1 = new Text Field (10);
   Num2 = new Text Field (10)
   Result = new Text Field (10)
   Division = new
Button (" Divide ");
   add (new Label ("Enter 1st number:"));
   add (Num1);
   add (new Label ("Enter 2nd number"))
   add (Num2);
   add (new Label ("Enter 2nd number:"));
     add (Result)
     add (Divide)
    Divide add Action Listener (this);
    Set Visible (true)
    add Window Listener (new My Window
    Adapter());
  }
  public void action Performed
```

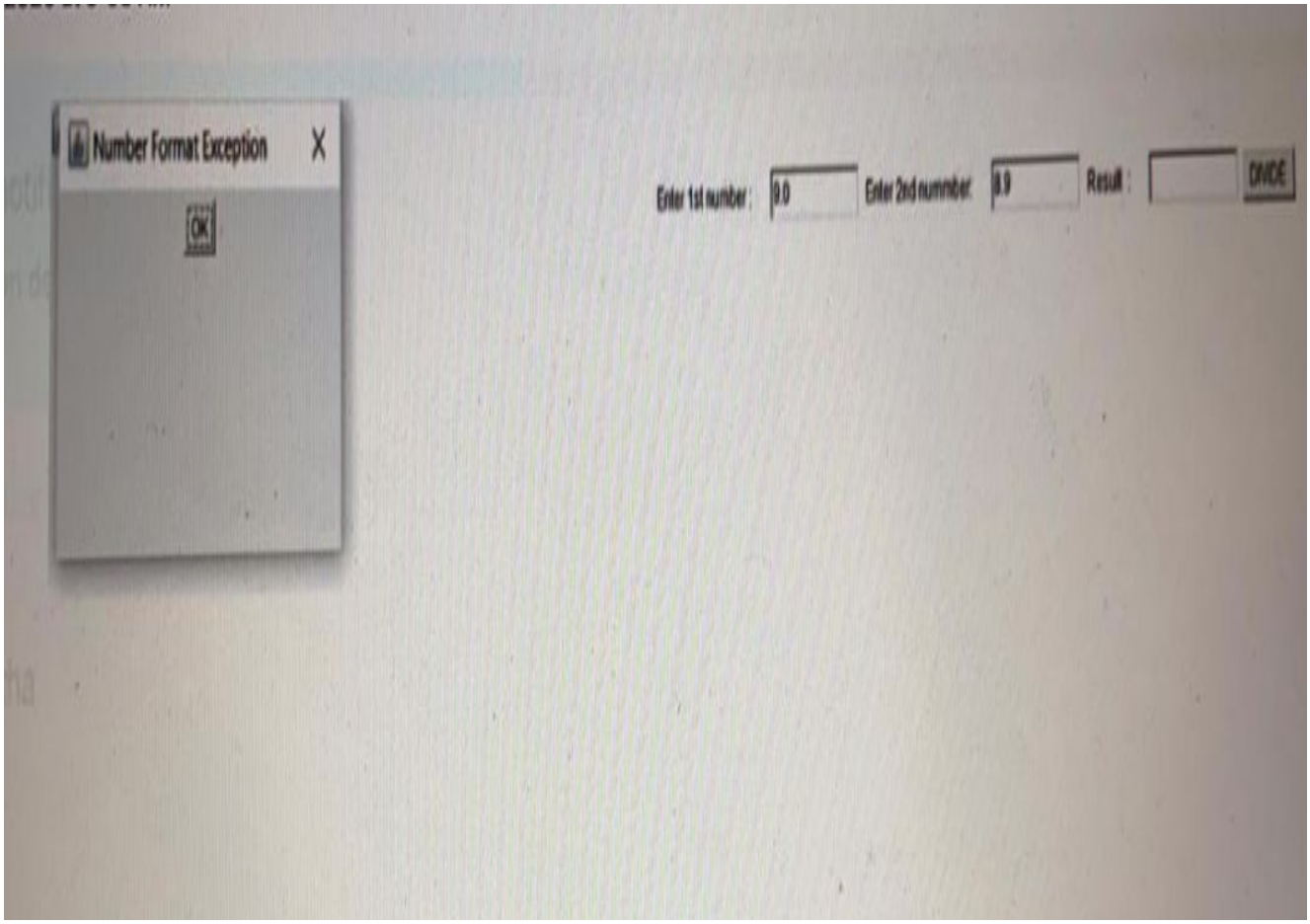







Enter 1st number :
50
Enter 2nd nummber :
5
Result :
10
DIVIDE


Arithmetic Exception
X
OK
Enter 1st number
50
Enter 2nd nummber
0
Result :
10
DIVIDE


Number Format Exception
OK
Enter 1st number :
0.0
Enter 2nd nummber
0.9
Result :
DIVIDE