Week 9-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.

Week - 9

CIE

Internals

```
package CIE;
import java.util.Scanner;

public class Internals extends Students{
double InternalMarks[] = new double[5];
Scanner sc = new Scanner(System.in);

public void setMarks(){
for(int i=0; i< internalMarks.length; i++){
System.out.println("Enter Internal Marks(40) of
subjects" + (i+1) + " : ");
internal Marks[i] = sc.nextDouble();
}
}
public void getMarks(double quiz marks[]){
System.out.println("Internals Marks(40) of
subjects" + (i+1) + " : ");
InternalMarks[i] = sc.next Double();
}
}
```


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```
public void getMarks (double quiz Marks[]),
System.out.println ("Internals marks
of 50 :");
for (int i=0; i<internalMarks.length; i++);
System.out.println ("Subject" + (i+1) + " >>"
-(internal Marks [i] + quiz Marks [i]));
}
}
public double getMarksbyIndex(int index);
return InternalMarks [index];
}
}
```

```
CIE; Quiz
package CIE;
import java.util.Scanner;
public class Quiz {
public double quiz marks [] = new double
Scanner sc = new Scanner (System.in)
public void setMarks () {
System.out.println(" Enter Quiz marks of
-subjects (out of 10");
```


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```
for (int i=0; i<quizMarks.leng
    quizMarks[i] = sc.nextDouble();
  }
}
public double getMarksByIndex(int index){
return quizMarks[index];
}
}
```

```
Package CIE;
public class student {
public String usn, name;
public int sem;
}
```

*SEE

```
package SEE;
import CIE.student;
import java.util.Scanner;
public class Externals student {
double[] external marks = new double[5];
Scanner sc = new Scanner(System.in);
public void setDetails() {
System.out.println("Enter name :");
name = sc.nextLine();
```


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```
System.out.println("Enter USN:");
usn=sc.nextLine();
system.out.println("Enter sem");
Sem = sc.nextInt();
}
public void setMarks() {
for(int i=0; i<externalMarks.length; i++){
system.out.println("Enter External Marks(100) of
- subject "+(i+1)+" :");
external Marks[i]=sc.nextDouble()/2;
}
}
public void getDetails() {
system.out.println("Name:"+name+"\nUSN:"+
- usn+"\nSemester:"+sem);
}
public void getMarks() {
system.out.println("External Marks out of
50:");
for(int i=0; i<externalMarks.length; i++)
{
system.out.println("subject "+(i+1)+":"
external Marks[i]);
```

```
{
}
public double getMarksByIndex(int index)
                                    {
return external Marks [index];
}
}
```

Main function

```
import java.util.Scanner;
import CIE.Internals;
import CIE.Quiz;
import SEE.External;

public class Main {

public static void main String[]args) {
 int n;
Scanner sc = new scanner (system.in);
System.out.println("Enter the number of students:");
n = sc.nextInt();
Internals [] cie = new Internals [n];
External [] see = new External [n];
Quiz [] quiz = new Quiz [n];
for (int i=0; i<see.length;
```


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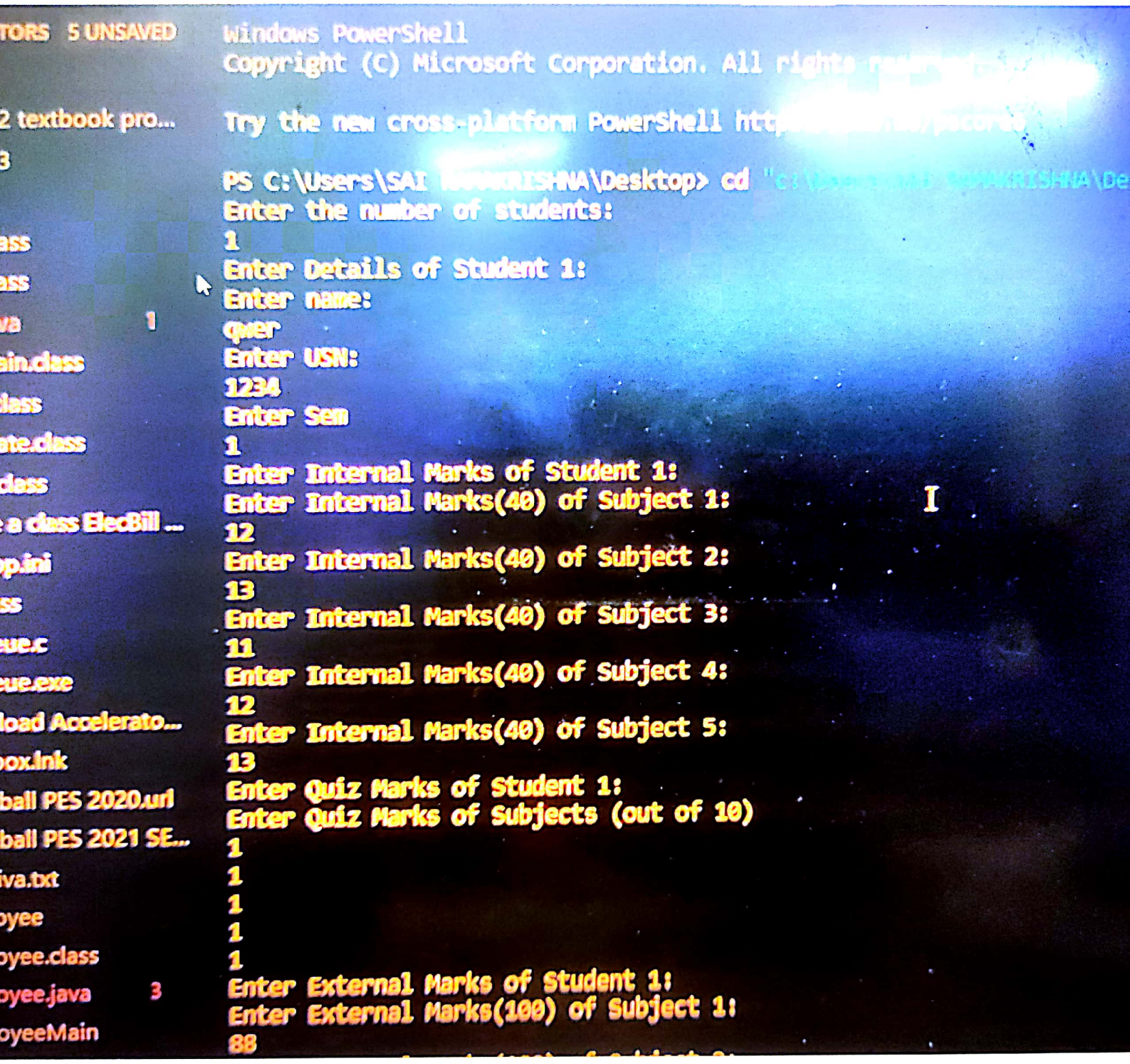

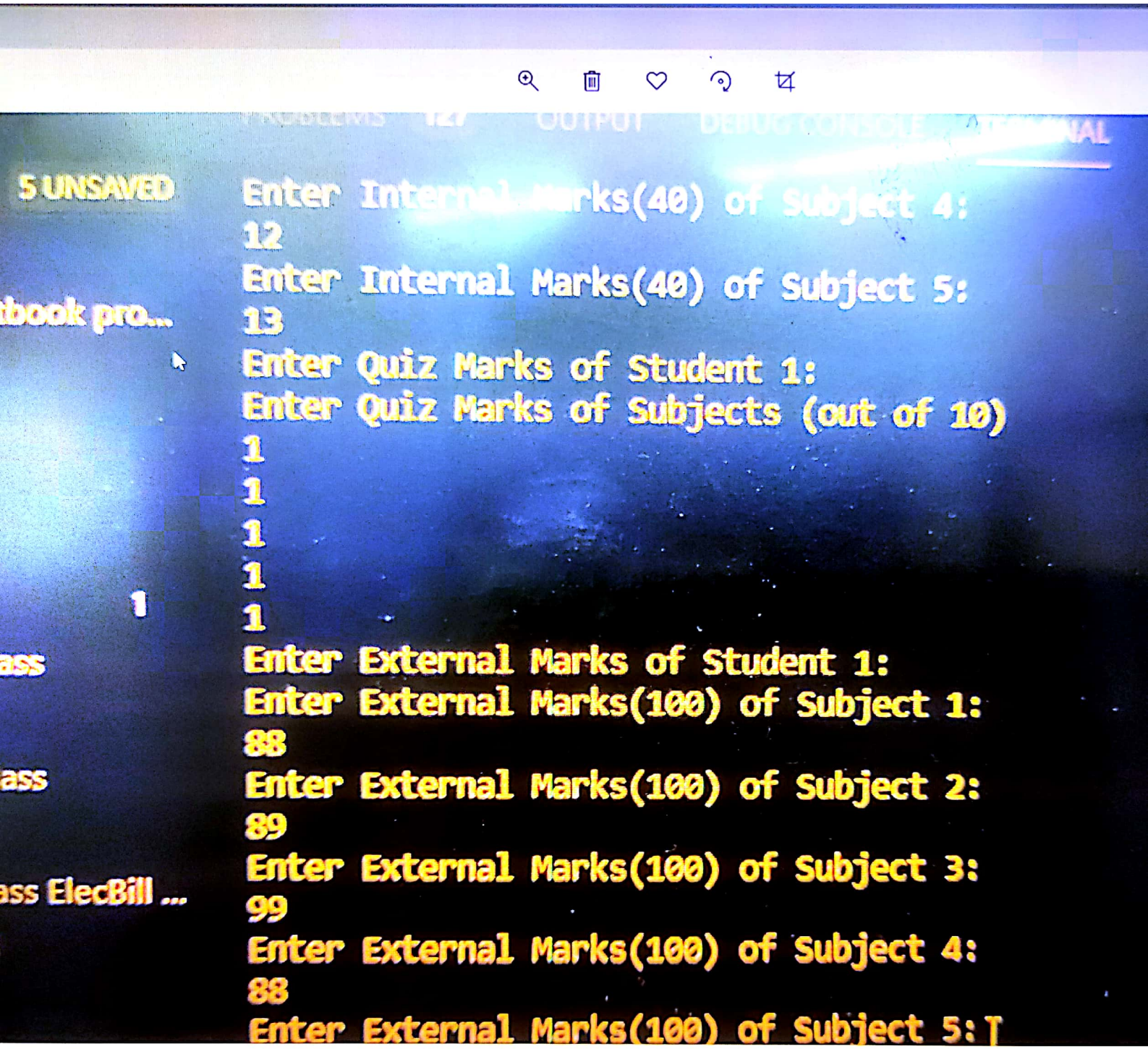

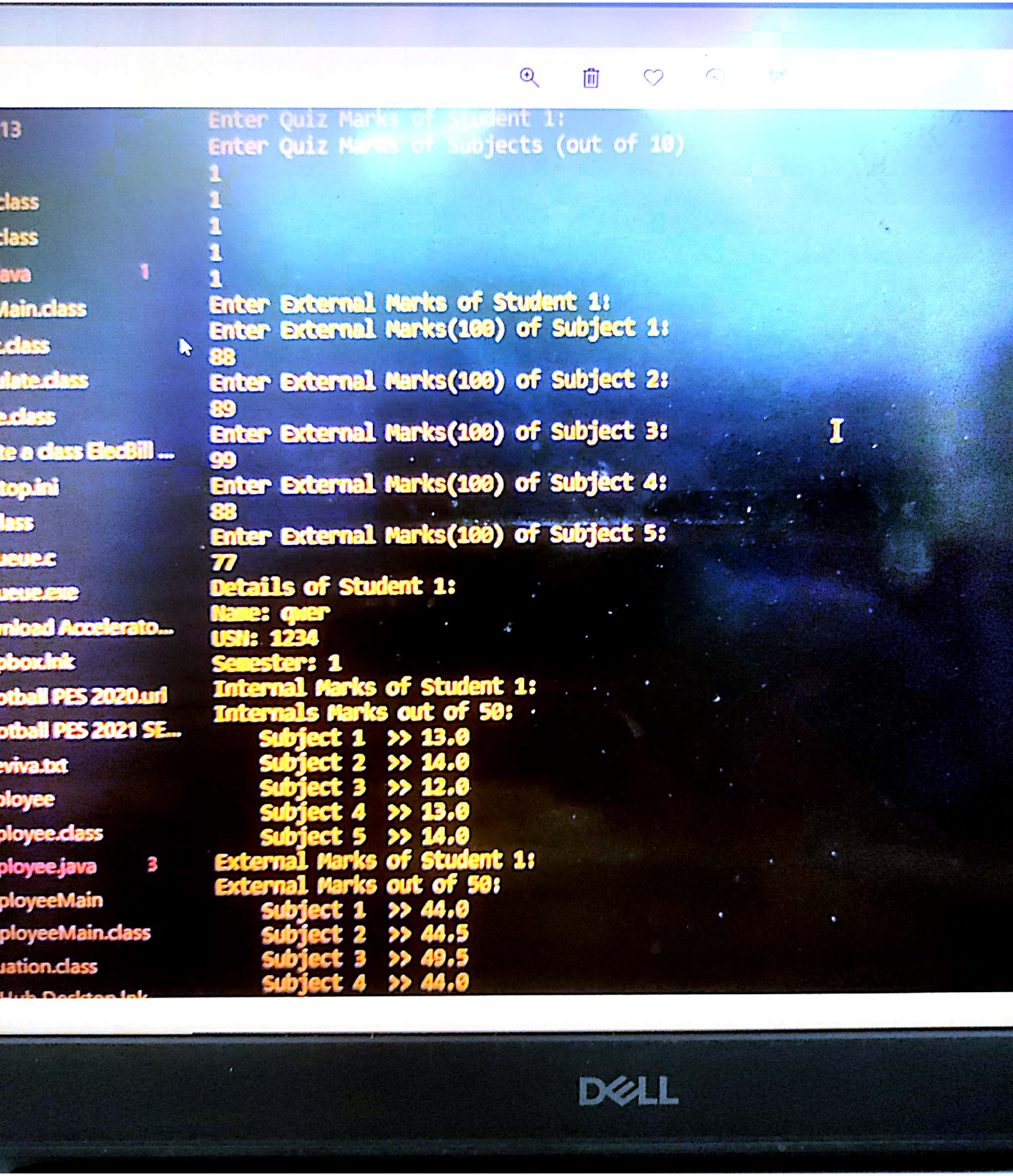

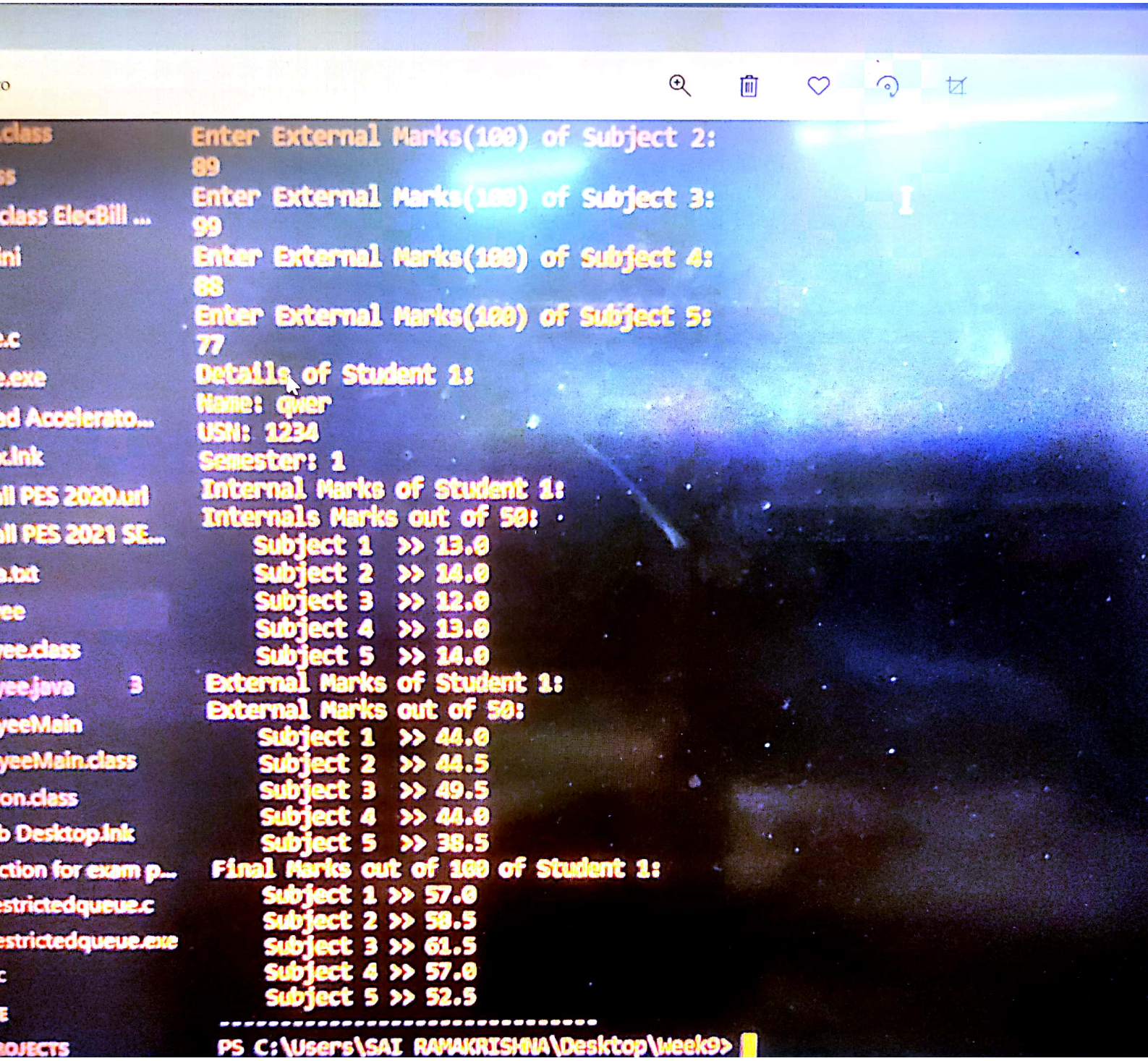

Week 10: Lab Programs-7 and 8:

7. Write a program to demonstrate generics with multiple object parameters.

MODIFIED LAB PROGRAM 8:

Modify your Lab program 8 according to the program given below and then upload in your github link:

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<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.

week - 10 Lab 7

1. Class myname<A, B>

```
{
    A obj1;
    B obj2;
    myname (A obj1, B obj2) {
    this.obj1 = obj1
    this.obj2 = obj2;
    }
Public void print(){
system.out.println(this.obj2);
system.out.println(this.obj2);
}
}
public class Lab15 {
public static void main (String[] args) {
myname <String, Integer> myobj = new myname<String
, Integer>("ax", 40);
myname <String, Double> myobj2 = new myname<Str
, Double>("weight", 60.00);
myObj.print();
myobj2.print();
}
```

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3.

LAB-PROGRAM - 8

```
import java.util.Scanner;
class wrongage extends Exception{
 public wrongage(String s){
   super(s);
 }
}
class Father{
 int fatherAge;
 Father(int fAge, int sAge) throws WrongAge{
 if(fAge<=sAge){
 throw new wrongAge("Father's Age is equal
to or less than Son's Age");
 }
 else{
this.fatherAge=fAge;
 }
 }
}
class Son extends Father{
int sonAge;
Son(int age, int sage) throws wrongAge{
super(fAge, sAge);
```

```
this.sonAge = sAge;
}
void print() {
System.out.println("Fathers Age:" + fatherAge);
System.out.println("Son's Age: " + sonAge);
}
}
public class Lab17{
 public static void main(String[] args) {
  int fAge, sAge;
Scanner sc = new Scanner(System.in);
 System.out.println("Enter fathers Age");
 fAge = sc.nextInt();
 System.out.println("Enter Sons Age");
 sAge = sc.nextInt()

 try {
 Son son = new Son(fAge, sAge);
 Son.print();
 }
 catch (WrongAgeError) {
System.out.println("Exception" + e);
 }
 }
```


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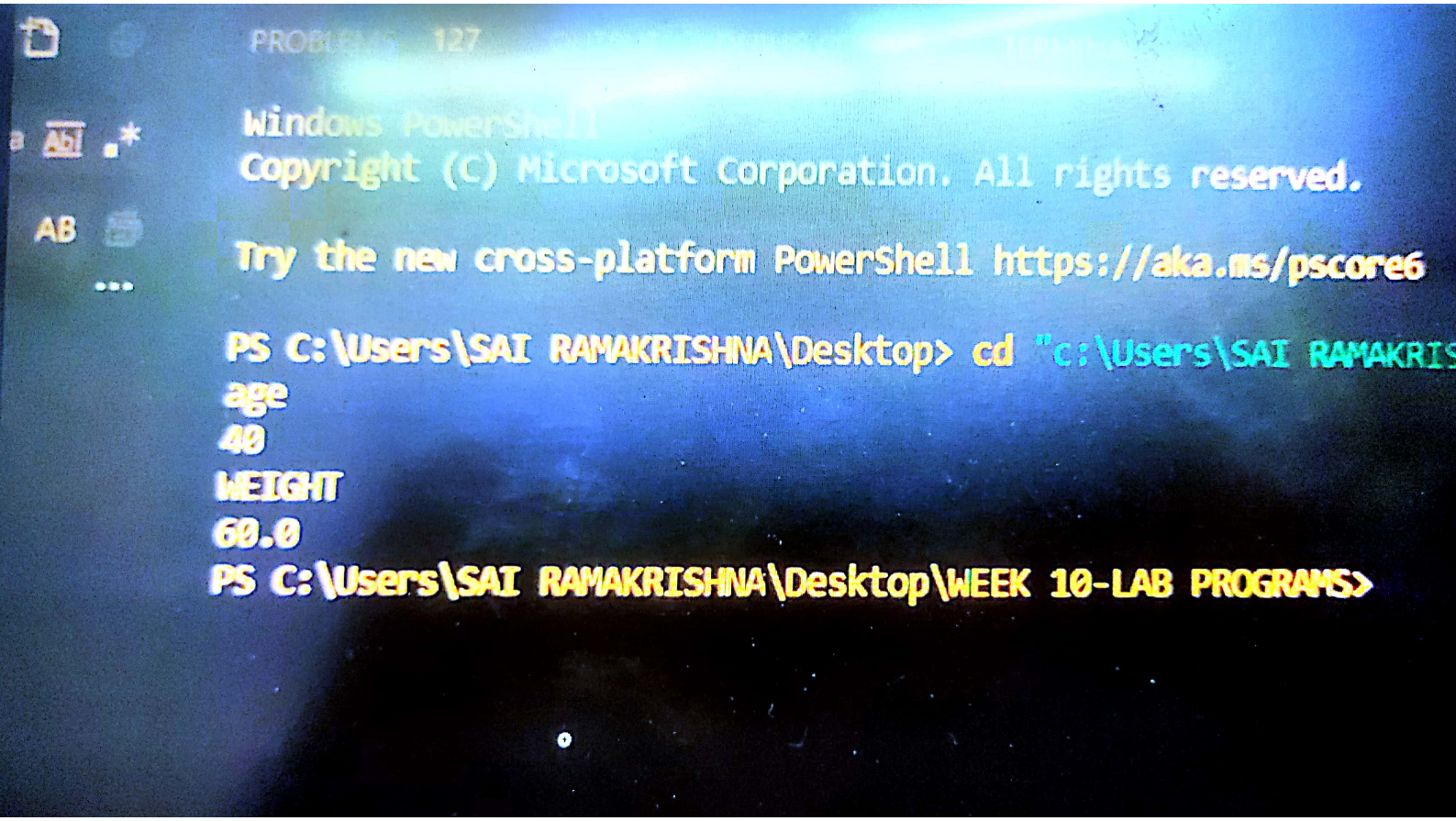

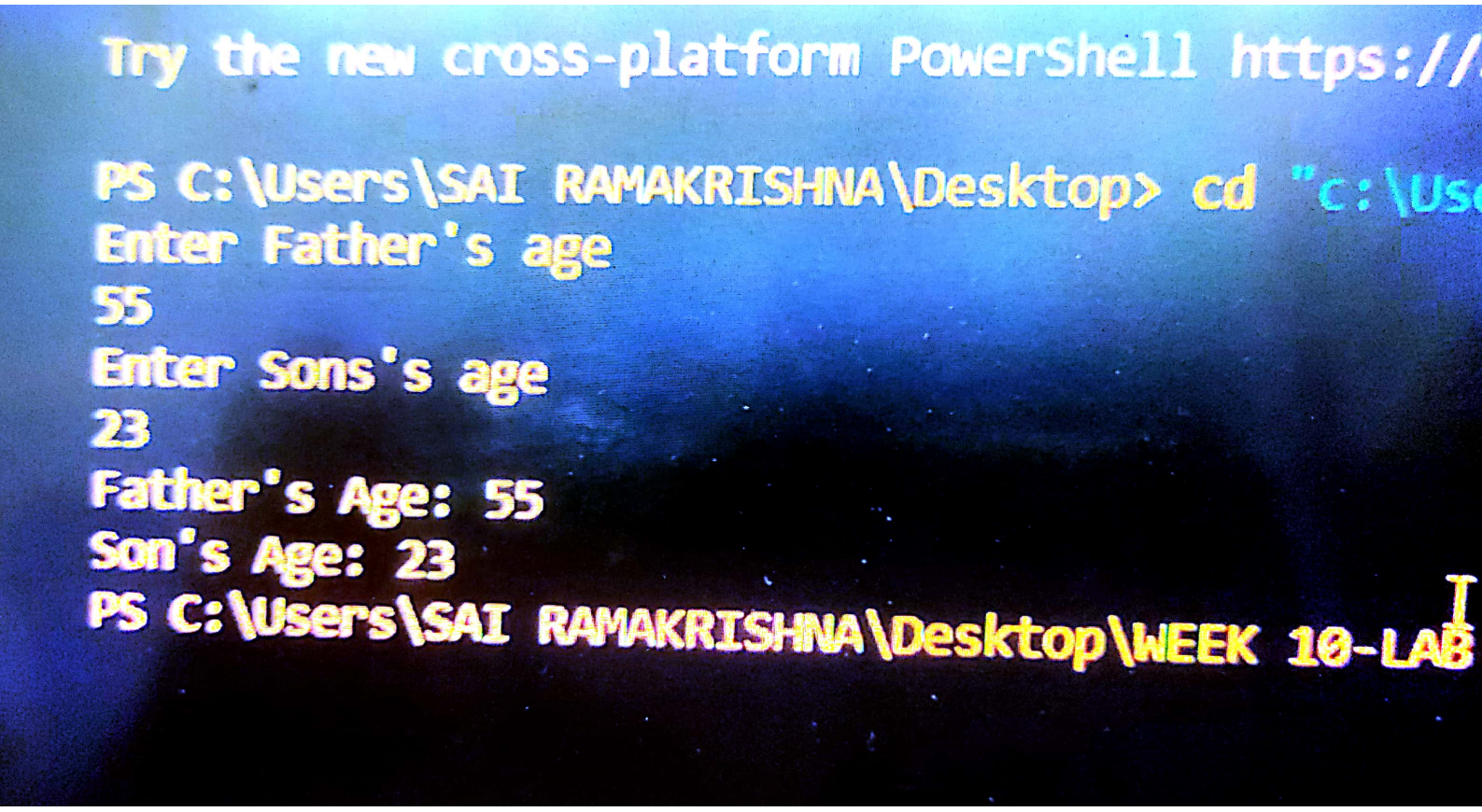

WEEK 11

LAB PROGRAM:

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.

week 11

1. Class one implements Runnable {

```
Thread t1;
String message;
long time;
one (String message, long time) {
this.message = message;
this.time = time;
t1 = new Thread (this, "Thread");
system.out.println("one starts" + t1);
t1.start();
}
public void run() {
try {
for (int i = 5; i > 0; i--)
{
System.out.println(message);
t1.sleep (this.time);
}
}
catch (Interrupted Exception ie) {
System.out.println("one Interrupted");
}
System.out.println("one Done");
```


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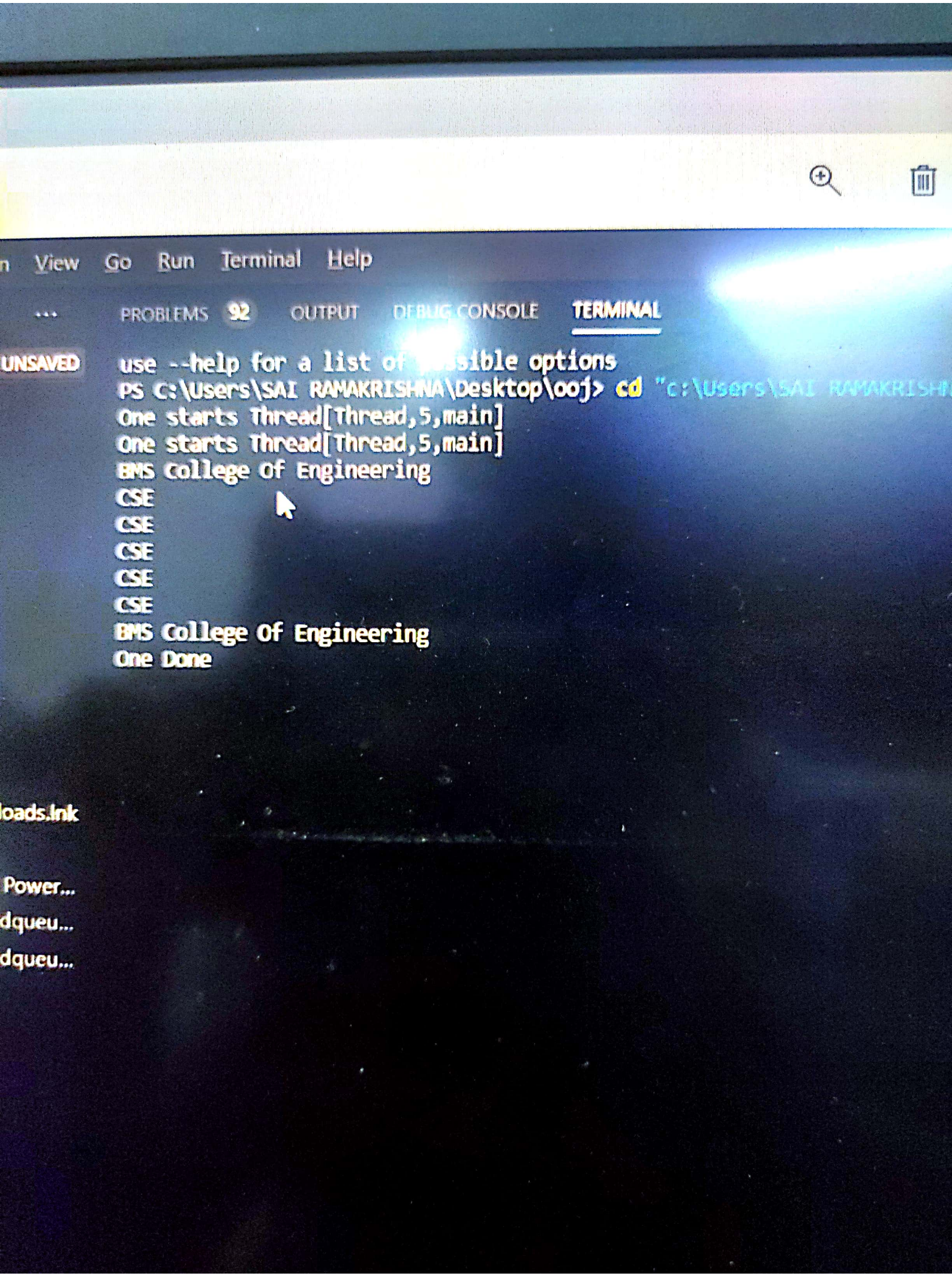
```
public class thpro {
  public static void main (String [] args)
  one o = new one ("BMS college of Engineering",
  one t = new one ("CSE", 2000);
  }
}
```



Week 12 Programs:

Extra Programs:

Upload the ButtonList and TextFieldDemo Programs demonstrated in the lab session.

Lab Program:

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.

(Submission by 17/12/2020 -Thursday Evening – 8 pm)

week -12 Lab program

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

public class Prog1 extends frame implements ActionListener
{
TextField Num1, Num2;
Button divi2 = new Button("Divide");
float res = 0;
String error = " ";
public Prog1()
{
setlayout(new flowlayout());
Num1 = new TextField(1);
Num2 = new TextField(1);

Label & Num1L = new Label("Num 1: "Label.RIGHT);
LabelNum2L = newLabel("Num2: ", Label.RIGHT);

add(Num1L);
add(Num1);
add(Num2L);
add(Num2);
add(divide);
divide.addActionlistener(this);
```

```
addWindowListener(new WinAdapter(1));
}
public void actionPerformed(ActionEvent e){
if(e.getSource() == divide){
try{
int n1 = Integer.parseInt(Num1.getText());
int n2 = Integer.parseInt(Num2.getText());
if (n2 == 0)
throw new ArithmeticException("Error");
res = (float) n1/n2;
}
catch (NumberFormatException exception){
res = 0;
error = "Entered number is not an
Integer.";
}
catch(ArithmeticException exception){
res = 0;
error = "You tried to divide by
zero.";
}
```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```
repaint();
}
}
public void paint(Graphics g) {
g.drawString("Result :" + String.valueOf(rs), 20, 100);
g.drawString("Error :" + error, 20, 150);
}
public static void main(String[] args) {
prog1 p = new prog1();
p.setSize(new Dimension(400, 250));
p.setTitle("Divide");
p.setVisible(true);
}
}

class winadapter extends WindowAdapter {
public void windowClosing(WindowEvent we) {
System.exit(0);
}
}
```


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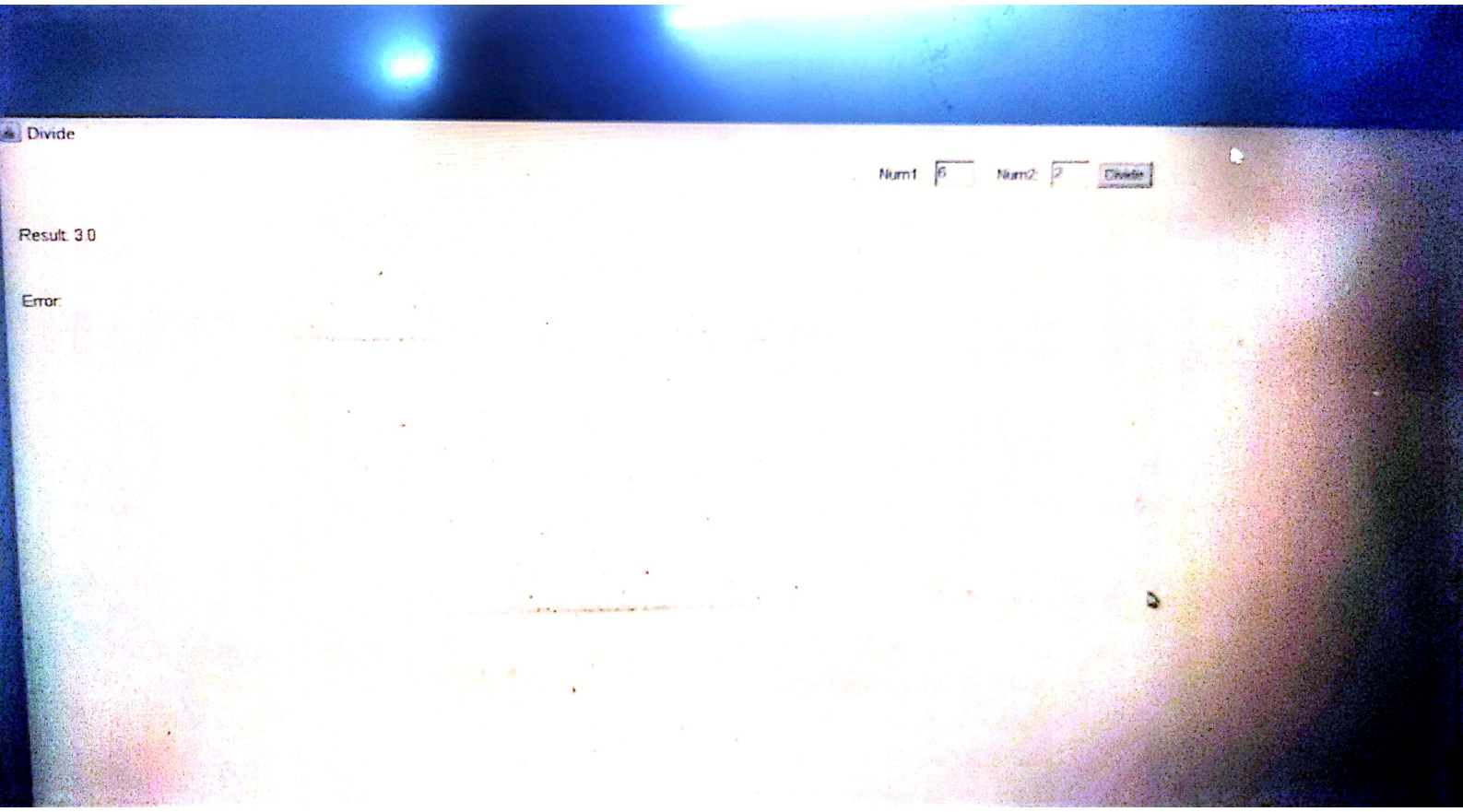

Lab Program:

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.

Extra Programs:

1. Create a GUI based program with the following specification: put two text field components and one button. Label the button as "paste". When some text is typed in the first text field and paste button is pressed, then the text must gets copied into the second textfield.

2. Develop a Java program that displays 4(Four) text fields, two of which accepts integer inputs

Week-13 Lab Program

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

public class Prog1 extends Frame implements ActionListener;
                                                    ev {

TextField Num1, Num2;
Button divide = new Button ("Divide");
Float res = 0;
String error = " ";
public Prog1 () {
setLayout (new FlowLayout (1));
Num1 = new TextField (1);
Num2 = new TextField (1);

Label & Num1L = new Label ("Num 1: "Label.
                                    RIGHT);
LabelNum2L = newLabel ("Num 2: ", Label. RIGHT);

add (Num1L);
add (Num1);
add (Num2L);
add (Num2);
add (divide);
divide. add Action listener (this);
```

```
addWindowListener(new WinAdapter());
}
public void actionPerformed(ActionEvent
if(ae.getSource() == divide){
try{
int n1 = Integer.parseInt(Num1.getTex
int n2 = Integer.parseInt(Num2.getText(
if(n2 <= 0)
throw new ArithmeticException("Error");
res = (float) n1/n2;
}
Catch(NumberFormationException excepti
{
res = 0;
error = "Entered number is not an
Integer.";
}
catch(ArithmeticException exception){
res = 0;
error = "You tried to divide by
zero!";
}
```

```
addWindowListener(new WinAdapter());
}
public void actionPerformed(ActionEvent
if (ae.getSource() == divide) {
try {
int n1 = Integer.parseInt(Num1.getTe
int n2 = Integer.parseInt(Num2.getText(
if (n2 <= 0)
throw new ArithmeticException("Error");
res = (float) n1/n2;
}
Catch (NumberFormatException excepti
{
res = 0;
error = "Entered number is not an
integer.";
}
catch(ArithmeticException exception){
res = 0;
error = "You tried to divide by
zero!";
}
```


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```
repaint();
}
}
public void paint(Graphics g) {
g.drawString("Result :" + String.valueOf(rs), 20,100);
g.drawString("Error :" + error, 20, 150);
}
public static void main(String[] args) {
proj1 p = new proj1();
p.setSize(new Dimension(400, 250));
p.setTitle("Divide");
p.setVisible(true);
}
}
class WinAdapter extends WindowAdapter {
public void windowClosing(WindowEvent we){
System.exit(0);
}
}
```


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