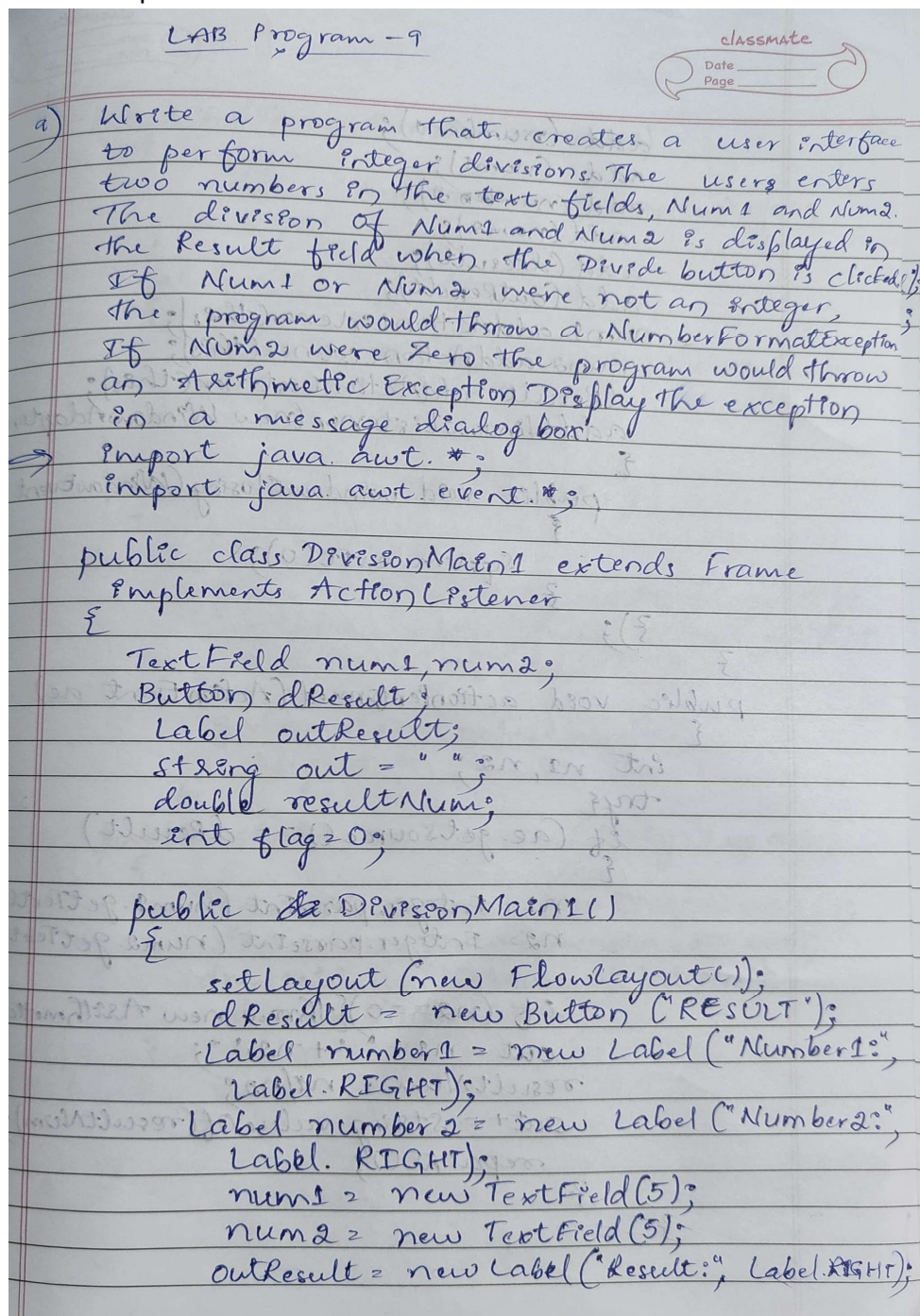PROGRAM 9 :

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 dialogbox.

Observation Writeup:

LAB Program - 9

CLASSMATE
Date _____
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a) Write a program that creates a user interface to perform integer divisions. The users 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.

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

public class DivisionMain1 extends Frame
    implements ActionListener
{
    TextField num1, num2;
    Button dResult;
    Label outResult;
    String out = " ";
    double resultNum;
    int flag = 0;

    public DivisionMain1()
    {
        setLayout (new FlowLayout());
        dResult = new Button ("RESULT");
        Label number1 = new Label ("Number1:",
            Label.RIGHT);
        Label number2 = new Label ("Number2:",
            Label. RIGHT);
        num1 = new TextField (5);
        num2 = new TextField (5);
        outResult = new Label ("Result:", Label.RIGHT);
```

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```java
        add (number1);
        add (num1);
        add (number2);
        add (num2);
        add (dResult);
        add (outResult);
        num1.addActionListener(this);
        num2.addActionListener(this);
        dResult.addActionListener(this);
        addWindowListener (new WindowAdapter()
        {
            public void windowClosing (WindowEvent we)
            {
                System.exit(0);
            }
        });
    }
    public void actionPerformed (ActionEvent ae)
    {
        int n1, n2;
        try{
            if (ae.getSource() == dResult)
            {
                n1 = Integer.parseInt (num1.getText());
                n2 = Integer.parseInt (num2.getText());

                if (n2==0){throw new ArithmeticException();}
                out = n1 + "/" + n2 +" ";
                resultNum = n1/n2;
                out+= String.value0f(resultNum);
                repaint();
            }
        }
```

```java
catch (NumberFormat Exception e1)
{    flag = 1;
     out = " Number Format Exception !" + e1;
     repaint();
}
catch (Arifhmetic Exception e2)
{    flag = 1;
     out = " Divide by 0 Exeption !" + e2;
     repaint();
}
}
public void paint (Graphics g)
{
     if (flag == 0)
          g. drawstring (out, outResult. getX() +
          outResult.getWidth(), outResul. get Y() +
          outResult. getHeight() - 8);

     g. drawstring (out, 100, 200);
     flag = 0;
}
public static void main (String[] args)
{
     DivisionMain1 dm = new DivisionMain1 ();
     dm. setSize (new Dimension (800, 400));
     dm. setTitle ("Division Of Integers");
     dm. setVisible (true);
}
}
```

Soft copy of the program :

```java
import java.awt.*;
import java.awt.event.*;
public class DivisionMain1 extends Frame implements ActionListener
{
    TextField num1, num2;
    Button dResult;
    Label outResult;
    String out = "";
    double resultNum;
    int flag = 0;

    public DivisionMain1()
    {
        setLayout(new FlowLayout());

        dResult = new Button("RESULT");
        Label number1 = new Label("Number 1:", Label.RIGHT);
        Label number2 = new Label("Number 2:", Label.RIGHT);
        num1 = new TextField(5);
        num2 = new TextField(5);
        outResult = new Label("Result:", Label.RIGHT);

        add(number1);
        add(num1);
        add(number2);
        add(num2);
        add(dResult);
        add(outResult);

        num1.addActionListener(this);
        num2.addActionListener(this);
        dResult.addActionListener(this);

        addWindowListener(new WindowAdapter()
        {
            public void windowClosing(WindowEvent we)
            {
                System.exit(0);
            }
        });

        setTitle("Division Calculator");
        setSize(300, 200);
        setVisible(true);
    }

    public void actionPerformed(ActionEvent ae)
```

```java
    {
        int n1, n2;
        try
        {
            if (ae.getSource() == dResult)
            {
                n1 = Integer.parseInt(num1.getText());
                n2 = Integer.parseInt(num2.getText());

                if (n2 == 0)
                {
                    throw new ArithmeticException("Cannot divide by zero!");
                }

                out = n1 + " / " + n2 + " = ";
                resultNum = (double) n1 / n2;
                out += String.valueOf(resultNum);
                repaint();
            }
        }
        catch(NumberFormatException e1)
        {
            flag = 1;
            out = "Number Format Exception! " + e1;
            repaint();
        }
        catch(ArithmeticException e2)
        {
            flag = 1;
            out = "Divide by 0 Exception! " + e2;
            repaint();
        }
    }

    public void paint(Graphics g)
    {
        if(flag == 0)
        {
            g.drawString(out, outResult.getX() + outResult.getWidth(),
outResult.getY() + outResult.getHeight() - 8);
        }
        else
        {
            g.drawString(out, 100, 200);
            flag = 0;
        }
    }
```

```java
    public static void main(String[] args)
    {
        DivisionMain1 dm=new DivisionMain1();
        dm.setSize(new Dimension(800,400));
        dm.setTitle("DivisionOfIntegers");
        dm.setVisible(true);
    }
}
```

Output: