Program 9

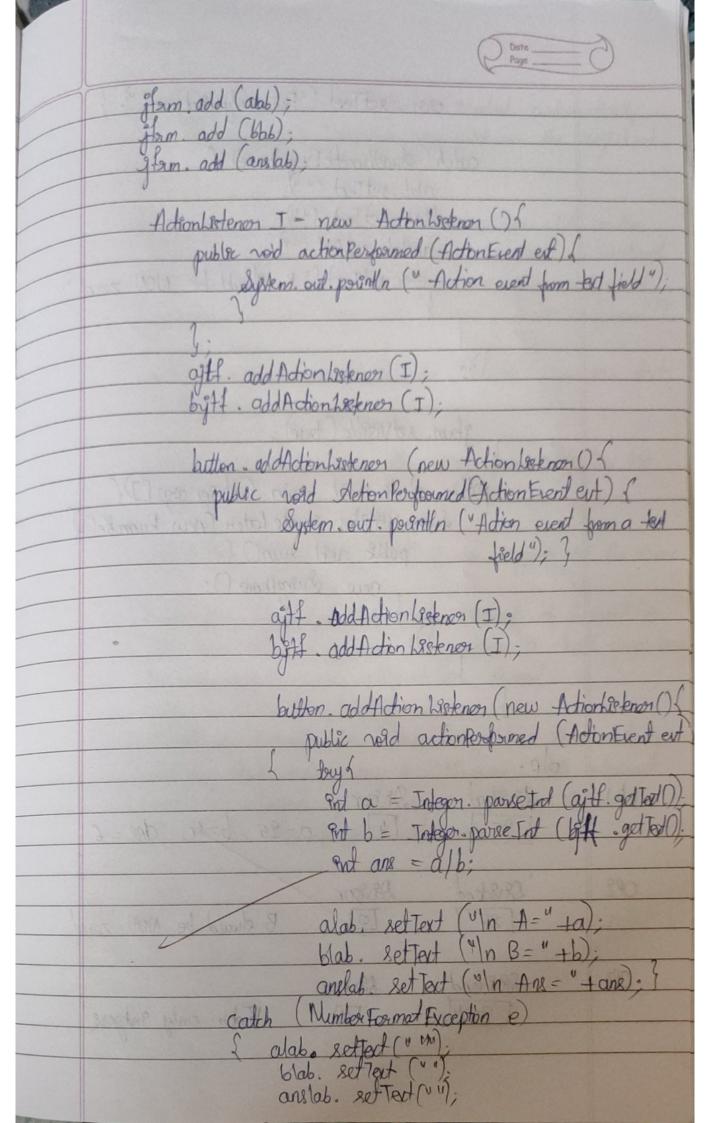Q) Write a program that creates a user interface to perform integer divisions. The user enters two numbers in the text fields, Num1 & Num2. The division of Num1 or Num2 here not an Integer, the program would throw an Arithmetic Exception Display the exception in a message dialog box.

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

class SwingDemo {
    SwingDemo() {
        JFrame jfrm = new JFrame("Divider App");
        jfrm.setSize(275, 150);
        jfrm.setLayout(new FlowLayout());
        jfrm.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        JLabel plab = new JLabel("Enter dividend & divisor:");
        JTextField ajtf = new JTextField(8);
        JTextField bjtf = new JTextField(8);
        JButton button = new JButton("Calculate");

        JLabel err = new JLabel();
        JLabel alab = new JLabel();
        JLabel blab = new JLabel();
        JLabel anslab = new JLabel();

        jfrm.add(err);
        jfrm.add(jlab);
        jfrm.add(ajtf);
        jfrm.add(bjtf);
        jfrm.add(button);
```

```java
jfrm. add (alab);
jfrm. add (blab);
jfrm. add (anslab);

ActionListener I = new ActionListener(){
    public void actionPerformed (ActionEvent evt){
        System. out. println ("Action event from text field");
    }
};

ajtf. addActionListener (I);
bjtf. addActionListener (I);

button. addActionListener (new ActionListener(){
    public void ActionPerformed(ActionEvent evt) {
        System. out. println ("Action event from a text
                            field"); }

ajtf. addActionListener (I);
bjtf. addActionListener (I);

button. addActionListener (new ActionListener(){
    public void actionPerformed (ActionEvent evt
    {    try {
            int a = Integer. parseInt (ajtf. getText());
            int b = Integer. parseInt (bjtf .getText());
            int ans = a/b;

            alab. setText ("\n A=" +a);
            blab. setText ("\n B=" +b);
            anslab. setText ("\n Ans=" +ans); }
        catch (NumberFormatException e)
        {  alab. setText ("");
            blab. setText ("");
            anslab. setText ("");
```

```java
            err. setText ("Enter only integers!"); }

        catch (ArithmeticException e) {
            alab.setText ("");
            blab. setText ("");
            anslab. setText ("");
            err. setText ("B should be NON zero");
        }
    }
    });

    jfrm. setVisible (true);

    public static void main (String args []) {
        SwingUtilities. invokeLater (new Runnable() {
            public void run() {
                new SwingDemo ();
            }
        });
    }
}
```

o/p:

op1   Dividend   Divisor
       [95]   [4]   a=25, b=4, div = 6

op2   Dividend   Divisor
       [25]   [0]   B should be NON zero

op3   Dividend   Divisor
       [25.4]   [4]   Enter only integers!

actionPerformed → This method is invoked automatically whenever you click on the registered component.

ActionListener :- This is notified whenever you click on the button or menu item. It is notified against ActionEvent. ActionListener interface is found in java.awt.event package. It has only one method, actionPerformed().

setText method substitutes the character for the text in text field.

getText method returns the text from single-line text field.

setVisible method makes the frame appear on the screen.

InvokeLater () method is a static method of SwingUtilities class and it can be used to perform a task asynchronously in the AWT Event dispatcher thread.

JLabel is a built-in Java Swing class that lets you display information on a JFrame. This element cannot be changed by the users. However it can be changed by other program statements

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B should ne NON zero! Enter the dividend and divisor: Aakanksha V R,1BM22CS001 `24` `0` Calculate

Enter only Integers! Enter the dividend and divisor: Aakanksha V R,1BM22CS001 24 5 Calculate A=24 B=5 Ans=4

Enter only Integers! Enter the dividend and divisor: Aakanksha V R,1BM22CS001 24.3 5 Calculate