

20/02/2024

## LAB-09

→ 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 are not an integer, the program would throw a `NumberFormatException`. If Num2 were zero, the program would throw an `ArithmeticException`. Display the exception in a message dialog box.

```
⇒ 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 jlab = new JLabel("Enter the  
divisor and dividend:");  
JTextField ajtf = new JTextField(8);  
JTextField bjtf = new JTextField(8);
```

```
JButton button = new JButton("Calculate");
```

```
JLabel crl = new JLabel();  
JLabel alab = new JLabel();  
JLabel blab = new JLabel();  
JLabel anslab = new JLabel();
```

```
jfrm.add(crl);  
jfrm.add(jlab);  
jfrm.add(ajtf);  
jfrm.add(bjtf);  
jfrm.add(button);  
jfrm.add(alab);  
jfrm.add(blab);  
jfrm.add(anslab);
```

```
ActionListener l = 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 (Action  
        -Event evt.)
```

```
{
```

```
    try{
```

```
        int a = Integer.parseInt (ajtf  
            .getText());
```

```
        int b = Integer.parseInt (bjtf  
            .getText());
```

```
        int ans = a/b;
```

```
        alab.setText ("A = " + a);
```

```
        blab.setText ("B = " + b);
```

```
        anlabe.setText ("Ans = " + ans);  
    }
```

```
    catch (NumberFormatException e)
```

```
{
```

```
        alab.setText ("");
```

```
        blab.setText ("");
```

```
        anlabe.setText ("");
```

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

Catch (ArithmeticException c.)  
{

alab.setText("");

blab.setText("");

anslab.setText("");

err.setText("B should be Non Zero!");

}

}

});

ifrm.setVisible(true);

}

public static void main(String args[])

{  
SwingUtilities.invokeLater(new Runnable() {

public void run() {

{

new SwingDemo();

}

});

}

}

O/P

Enter the divider and dividend:

10

2

[calculate]

A=10

B=2

Ans = 5

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o/p:-

B Should be Non Zero!

Enter the divider and dividend  
[ 10 ] [ 0 ]

calculate

## FUNCTIONS

- **JFrame** - The `javax.swing.JFrame` class is a type of container which inherits the `java.awt.Frame` class. **JFrame** works like the main window where components like labels, textfields are added to create a GUI.
- **setSize (int width, int height)** - used to resize a frame using width and height parameters.
- **setLayout ( )** - method allows you to set the layout of the container. The layout manager helps layout the components held by this container.
- **setDefaultCloseOperation ( )** - method is used to specify one of several options for the close button.  
`JFrame.EXIT_ON_CLOSE` - Exit the application

- **JLabel** - The object of JLabel class is a component for placing text in a container. It is used to display a single line of read only text.
- **JTextField** - The object of a JTextField class is a text component that allows the editing of a single line text. It inherits JTextComponent class.
- **add(Frame)** - adds new frame in the existing frame.
- **ActionListener** - The Java ActionListener is notified whenever you click on the button or menu item. It is notified against ActionEvent. This interface is found in java.awt.event package.
- **setText()** - This method substitutes new text for all or part of the text in the text field. This works only with the first line of multi-line text fields.
- **setVisible()** - is a method that has return type boolean.

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