

```
import java.awt.*;  
import java.awt.event.*;  
class NumException extends Exception {  
    public String toString ()  
    {  
        return "There is an Arithmetic Exception.";  
    }  
}
```

```
class FormatException extends Exception {  
    public String toString ()  
    {  
        return "There is an Format Exception.";  
    }  
}
```

```
public class DivideNumbers extends JFrame implements ActionListener
```

```
    TextField num1, num2;
```

```
    JButton div;
```

```
    double result;
```

```
    String msg = "The result is: 0.0";
```

```
    public DivideNumbers ()
```

```
    {  
        setLayout (new FlowLayout (1));
```

```
        Label num1L = new Label ("Numerator:", Label.RIGHT);
```

```
        Label num2L = new Label ("Denominator:", Label.RIGHT);
```

```
        JButton div = new JButton ("Divide");
```

```
        num1 = new TextField (5);
```

```
        num2 = new TextField (5);
```

```
        add (num1L);
```

```
        add (num1);
```

```
        add (num2L);
```

```
add (num 2);  
add (div);
```

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```
num 1. add Action Listener (this);  
num 2. add Action Listener (this);  
div. add Action Listener (this);
```

```
add Window Listener (new Window Adapter ())  
{  
    public void windowClosing (WindowEvent we)  
    {  
        System.exit(0);  
    }  
};
```

```
}  
public boolean isDouble (double num num)  
{  
    double dec;  
    dec = num - (int) num;  
    if (dec == 0.0)  
        return false;  
    else  
        return true;  
}
```

```
public double divide (double a, double b) throws  
    NumException, FormatException  
{  
    if (b == 0.0)  
    {  
        throw new NumException();  
    }  
}
```

else if (is Double (a) || is Double (b))

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```
{  
    throw new FormatException ();  
}
```

```
return (double) a/b;
```

```
}  
public void action Performed (ActionEvent ae)
```

```
{  
    double a, b;
```

```
    a = Double.parseDouble (num1.getText());
```

```
    b = Double.parseDouble (num2.getText());
```

```
    try {
```

```
        result = divide (a, b);
```

```
        msg = ("The result is : " + result);
```

```
    }
```

```
    catch (NumberFormatException ne)
```

```
    {
```

```
        msg = ne.toString ();
```

```
    }
```

```
    catch (FormatException fe)
```

```
    {
```

```
        msg = fe.toString ();
```

```
    }
```

```
    repaint ();
```

```
}  
public void paint (Graphics g)
```

```
{
```

```
    g.drawString (msg, 50, 100);
```

```
}
```

```
public static void main (String args [])
```

```
{
```

```
    JFrame appwin = new JFrame ();
```

```
    appwin.setSize (new Dimension (350, 300));
```

```
    appwin.setTitle ("Divide two numbers");
```

```
}  
appwin.setVisible (true);
```