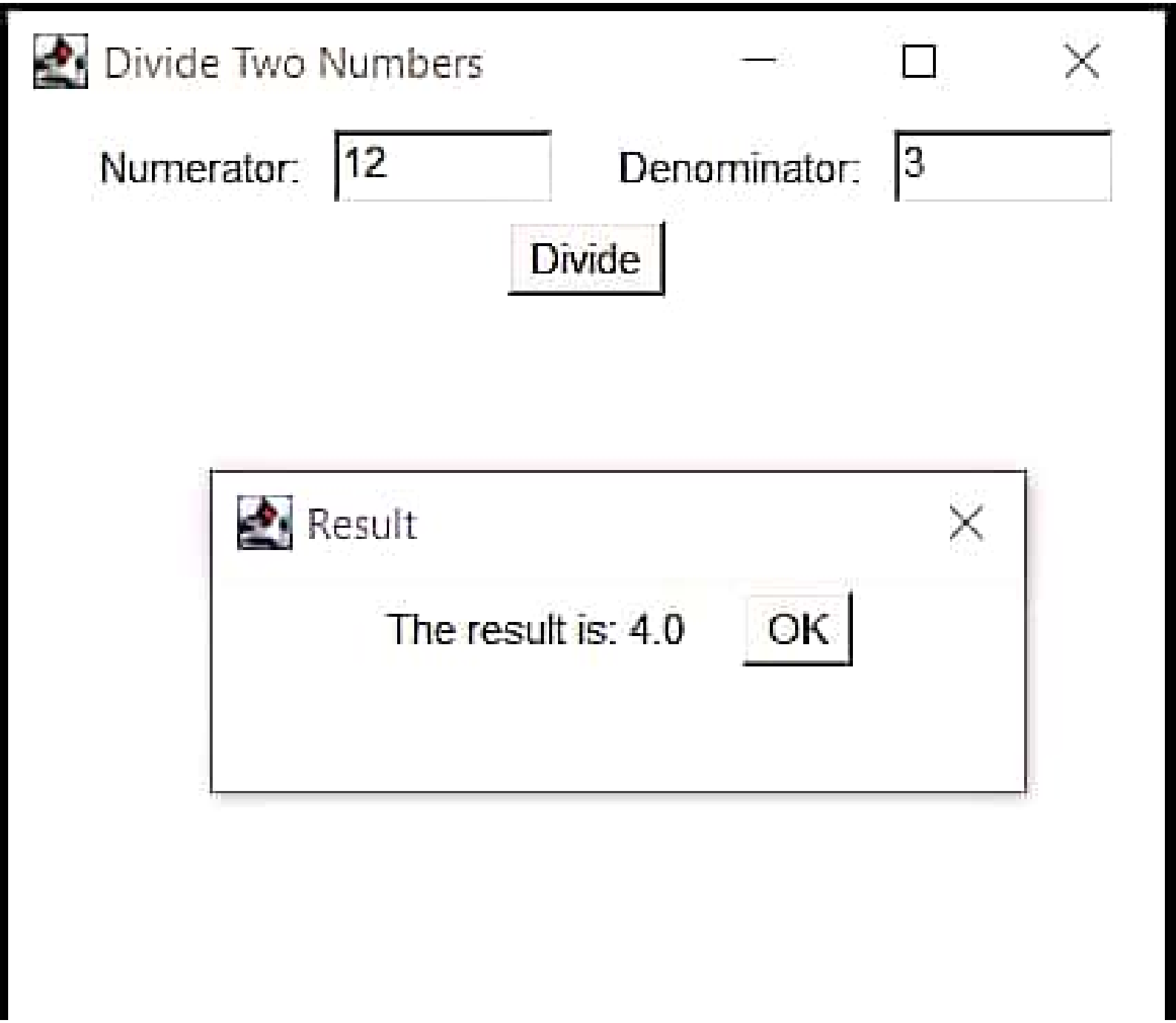
Lab program 10 :- (Week 12)

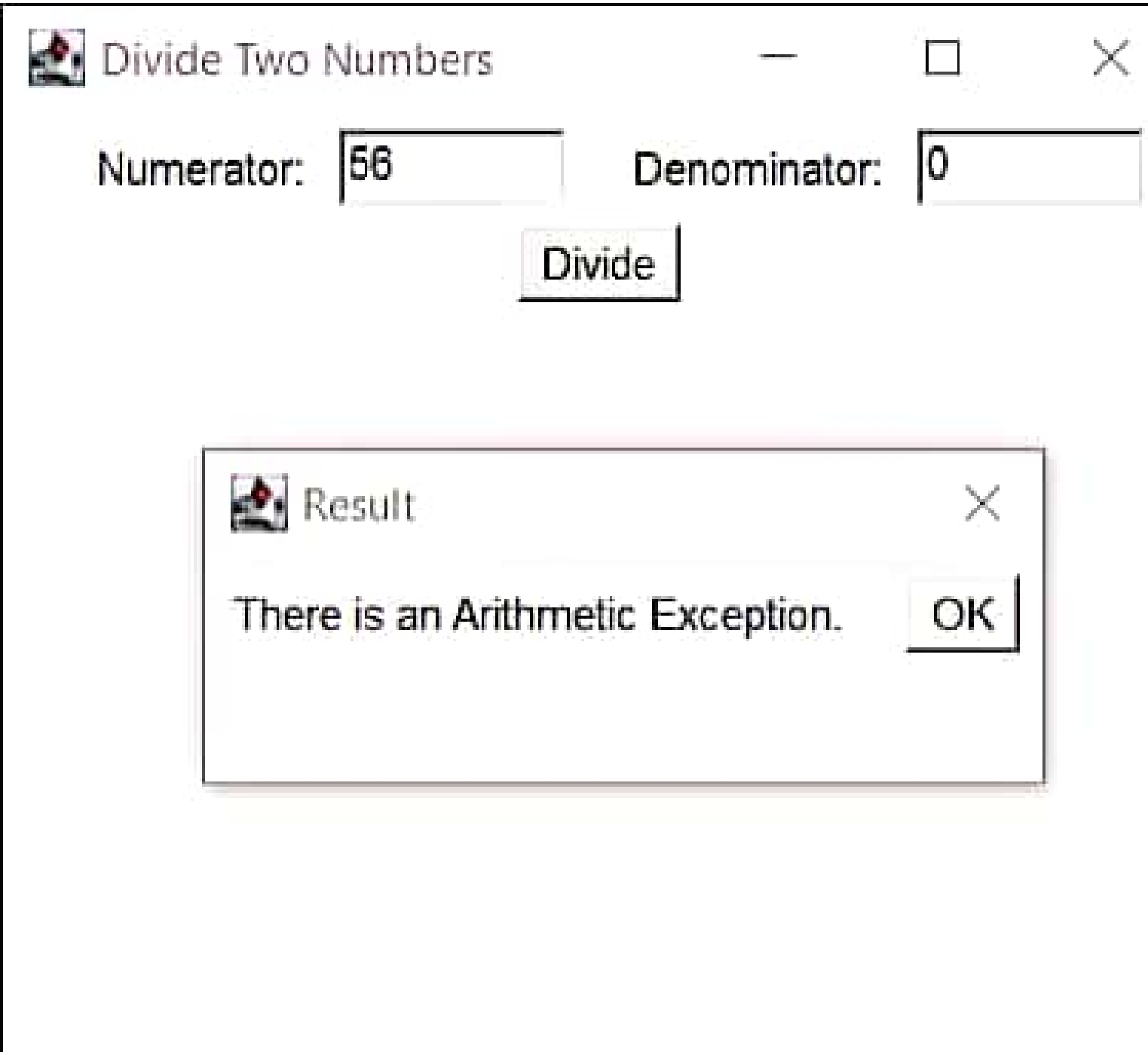
```
import java.awt.*;
import java.awt.event.*;

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 dividenums extends Frame implements ActionListener{
    TextField num1, num2;
    Button div;
    double result;
    String msg="The result is : 0.0";
    public dividenums()
    {
        setLayout (new FlowLayout());
        Label num1n = new Label ("Numerator: ", Label.RIGHT);
        Label num2n = new Label ("Denominator: ", Label.RIGHT);
        Button div = new Button("Divide");
        num1 = new TextField(5);
        num2 = new TextField(5);
        add (num1n);
        add (num1);
        add (num2n);
        add (num2);
        add (div);
```

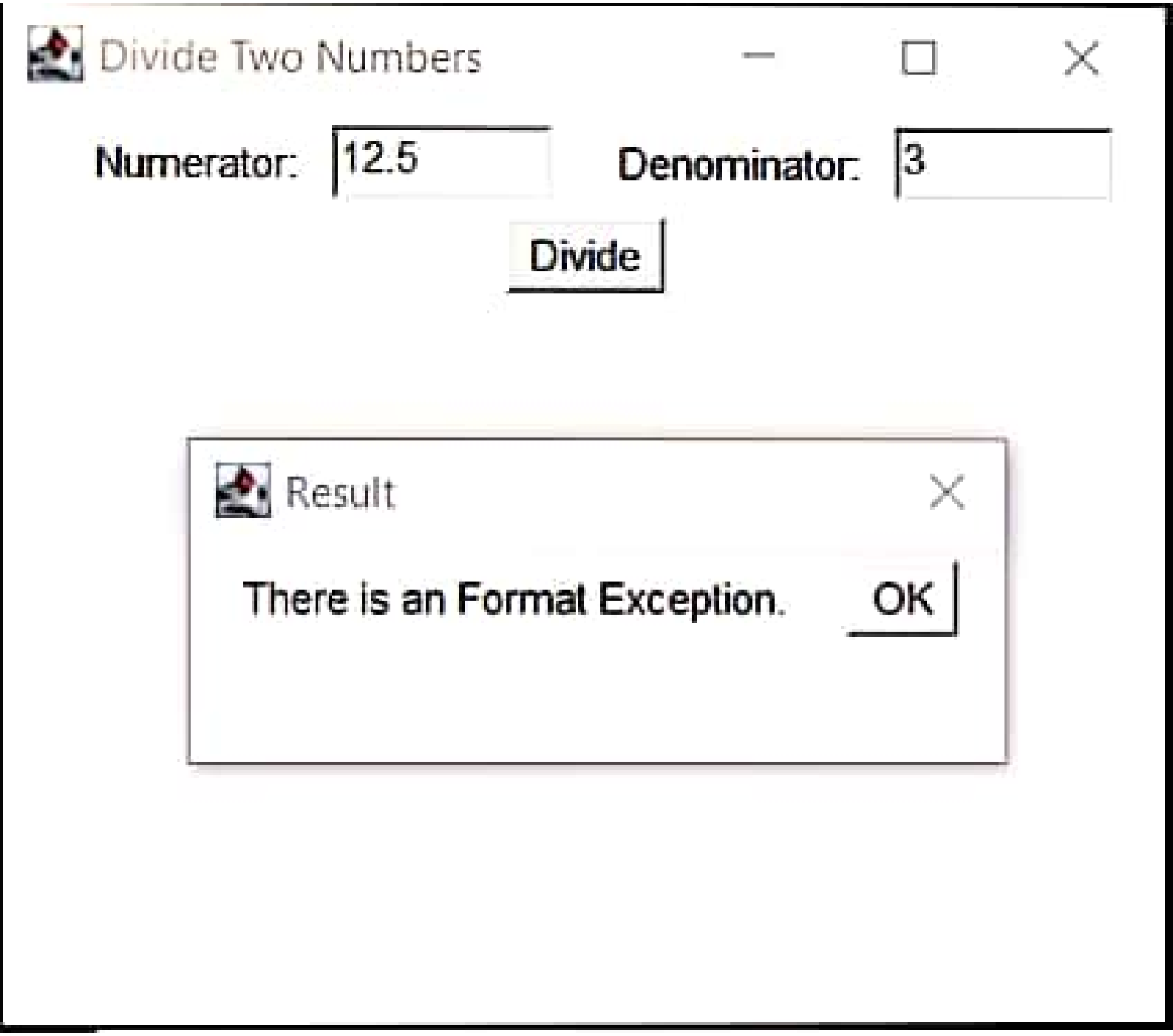
```
num1.addActionListener(this);
num2.addActionListener(this);
div.addActionListener(this);

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

public boolean isDouble(double 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(isDouble(a) || isDouble(b))
  {
    throw new FormatException();
  }
  return (double) a/b;
}
```

```
public void actionPerformed (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 (NumberException ne)
    {
      msg=ne.toString();
    }
    catch (FormatException fe)
    {
      msg=fe.toString();
    }
    repaint();
}

public void paint (Graphics g)
{ ResultDialog d=new ResultDialog (this,"Result");
  d.setVisible(true);
}

public static void main (String args[])
{
  dividenums appwin= new dividenums();
  appwin.setSize (new Dimensions(350,300));
  appwin.setTitle ("Divide Two Numbers");
  appwin.setVisible (true);
}
```

```
class ResultDialog extends Dialog implements ActionListener {
divide nums pt;
ResultDialog (Frame parent, String title)
{
    super (parent, title, false);
    pt = (dividenums) parent;
    setLayout (new FlowLayout());
    setSize (250,100);
    Button b = new Button("OK");
    add(new Label(pt.nyg));
    b.addActionListener(this);
    add(b);
    addWindowListener (new WindowAdapter(){
        public void windowClosing (WindowEvent we) {
            dispose();
        }
    });
}

public void actionPerformed (ActionEvent ae)
{
    dispose();
}
}
```


Divide Two Numbers
Numerator:
12
Denominator:
3
Divide
Result
The result is: 4.0
OK


Divide Two Numbers
Numerator:
56
Denominator:
0
Divide
Result
There is an Arithmetic Exception.
OK


Divide Two Numbers
Numerator:
12.5
Denominator:
3
Divide
Result
There is an Format Exception.
OK