Lab program 10:- (Week 12)

```java
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 ActionListeners {
    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("Denomenator: ", 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);
```

```java
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;
}
```

```java
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 (NumExcep ception ne)
    {
        msg =ne. toString ();
    }
    catch (FormatException fe)
    {
        msg= fe. toString ();
    }
    repaint();
}
public void paint (Graphics g)
{
    g. drawString (msg, 50,150);
}
public static void main (String args[])
{
    dividenums appwin= new dividenums ();
    appwin.setSize (new Dimensions (350, 300));
    appwin. setTitle ( " Divide Two Numbers ");
    appwin. set Visible (true);
}
}
```

Divide Two Numbers — □ ✕

Numerator: 12   Denominator: 5

Divide

The result is: 2.4

Divide Two Numbers — □ ✕

Numerator: `12.6`   Denominator: `5`

Divide

There is an Format Exception.

Divide Two Numbers — □ ✕

Numerator: `20`   Denominator: `0`

Divide

There is an Arithmetic Exception.