

## **Assignment 1**

**Assignment2 Project**

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**CSC615**

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## Assignment 2

### Overview:

IDE: vim

Date: May 4<sup>th</sup> 2009

Compiler: SUN JDK 6.0 Linux 64bit (1.6)

Ant Makefile: build.xml

Project URL: [http://github.com/tanxin/xin\\_csc615](http://github.com/tanxin/xin_csc615)

### Version Control Information:

```
commit 405fae1721fcc41d8e086f59a130549130795359
Author: Xin <tanxincn@gmail.com>
Date:   Sun May 10 12:02:31 2009 -0700

    add lab1 lab2 assignment2

build.xml | 32 ++-
.../exception/InvalidInputException.java | 5 +
src/edu/nu/csc615/assignment2/Assign2.java | 16 ++
src/edu/nu/csc615/assignment2/Calculator.java | 248 +++++
src/edu/nu/csc615/lab1/SimpleCalc.java | 69 +++++
src/edu/nu/csc615/lab2/MainRunner.java | 45 ++++
6 files changed, 401 insertions(+), 14 deletions(-)
```

### Get SourceCode:

From Git (newest version):

```
tanxin@laptop ~/.workspace-java/csc615 $ git clone git://github.com/tanxin/xin_csc615.git
```

From CD-ROM:

```
tanxin@laptop ~/.workspace-java/csc615 $ cp -r /mnt/cdrom/* .
```

### Compile:

```
tanxin@laptop ~/.workspace-java/csc615 $ ant compile
Buildfile: build.xml

init:
```

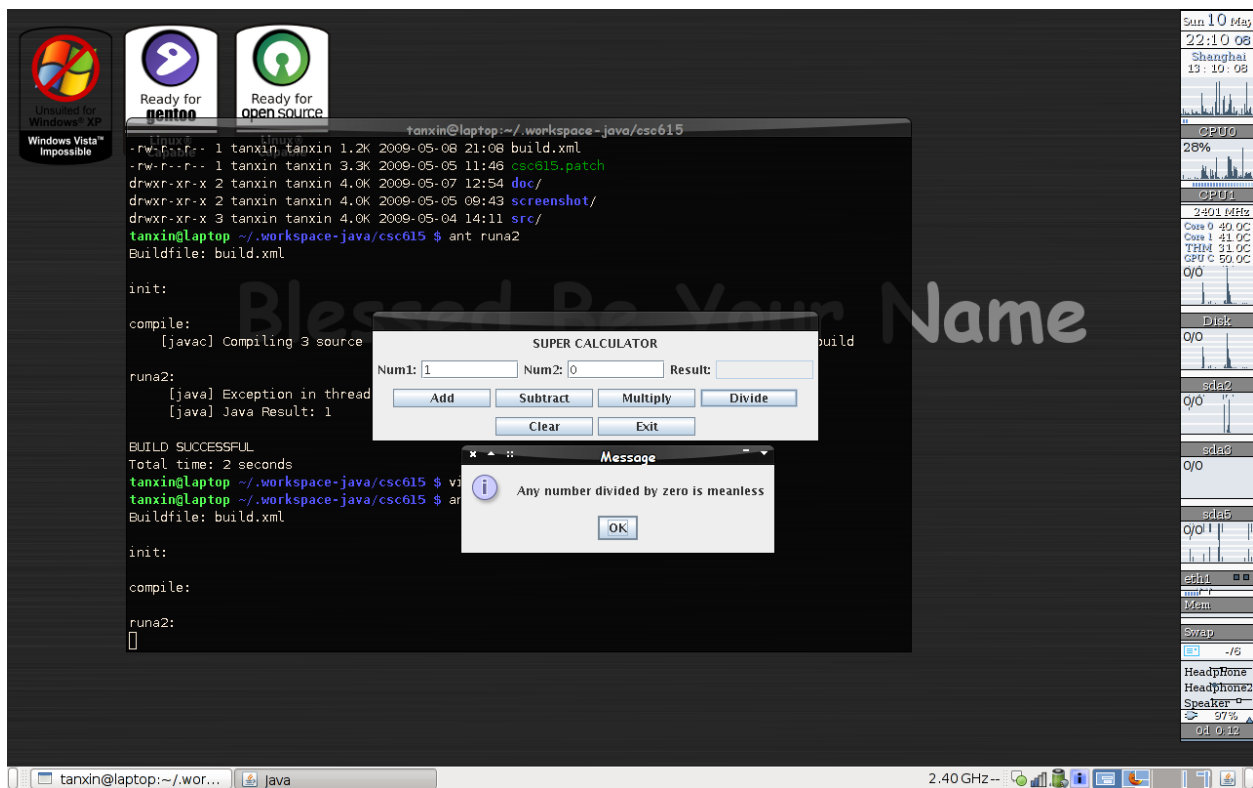
## Assignment 3

```
[mkdir] Created dir: /home/tanxin/documents/school/nu/CSC615/project/build  
  
compile:  
[javac] Compiling 6 source files to /home/tanxin/documents/school/nu/CSC615/project/build  
  
BUILD SUCCESSFUL  
Total time: 1 second
```

### Run:

```
tanxin@laptop ~/.workspace-java/csc615 $ ant runa2  
Buildfile: build.xml  
  
init:  
  
compile:  
  
run:  
  
BUILD SUCCESSFUL  
Total time: 11 seconds
```

### Screenshots:



## Assignment 4

### Memo:

If the computer has not ant build toolkit, it can be also compiled and run as this way.

```
tanxin@laptop ~/.workspace-java/csc615 $ rm -rf build
tanxin@laptop ~/.workspace-java/csc615 $ mkdir build
tanxin@laptop ~/.workspace-java/csc615 $ javac -cp src -d build src/edu/nu/csc615/assignment2/*.java
tanxin@laptop ~/.workspace-java/csc615 $ java -cp build edu.nu.csc615.assignment2.Assign2
```

### Code List:

#### edu.nu.csc615.assignment2.Assign2.java

```
package edu.nu.csc615.assignment2;

import java.awt.EventQueue;

public class Assign2 {

    /* entrance point */
    public static void main(String[] args) {
        EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Calculator().setVisible(true);
            }
        });
    }
}
```

#### edu.nu.csc615.assignment2.Calculator.java

```
package edu.nu.csc615.assignment2;

import java.awt.Container;
import java.awt.Dimension;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

import javax.swing.BoxLayout;
import javax.swing.JButton;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.JTextField;
import javax.swing.WindowConstants;

import edu.nu.csc615.assignment1.exception.InvalidInputException;

public class Calculator extends javax.swing.JFrame {

    private JButton addButton;
    private JButton clearButton;
    private JButton divideButton;
    private JButton multiplyButton;
    private JLabel numLabel3;
    private JLabel numLabel1;
    private JLabel numLabel2;
    private JTextField numText1;
```

## Assignment 5

```
private JTextField numText2;
private JTextField numText3;
private JButton subtractButton;
private JLabel titleLabel;
private JButton exitButton;
private JPanel titlePane;
private JPanel inputPane;
private JPanel buttonPane;
private JPanel systemPane;

/* constructure */
public Calculator() {

    /* initialize object */
    titleLabel = new JLabel();
    numLabel1 = new JLabel();
    numText1 = new JTextField();
    numLabel2 = new JLabel();
    numText2 = new JTextField();
    numLabel3 = new JLabel();
    numText3 = new JTextField();
    addButton = new JButton();
    subtractButton = new JButton();
    multiplyButton = new JButton();
    divideButton = new JButton();
    clearButton = new JButton();
    exitButton = new JButton();
    titlePane = new JPanel();
    inputPane = new JPanel();
    buttonPane = new JPanel();
    systemPane = new JPanel();

    /* create uniform dimension for objects */
    Dimension dimension = new Dimension(100, 19);

    /* close button can exit */
    setDefaultCloseOperation(WindowConstants.EXIT_ON_CLOSE);

    /* labels initialization */
    titleLabel.setText("SUPER CALCULATOR");
    numLabel1.setText("Num1:");
    numText1.setPreferredSize(dimension);
    numLabel2.setText("Num2:");
    numText2.setPreferredSize(dimension);
    numLabel3.setText("Result:");
    numText3.setEditable(false);
    numText3.setPreferredSize(dimension);

    /* buttons initialization */
    addButton.setText("Add");
    addButton.setPreferredSize(dimension);
    addButton.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
            AddButtonActionPerformed(evt);
        }
    });

    subtractButton.setText("Subtract");
    subtractButton.setPreferredSize(dimension);
    subtractButton.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
            SubtractButtonActionPerformed(evt);
        }
    });

    multiplyButton.setText("Multiply");
    multiplyButton.setPreferredSize(dimension);
    multiplyButton.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent evt) {
            MultiplyButtonActionPerformed(evt);
        }
    });

    divideButton.setText("Divide");
```

## Assignment 6

```
divideButton.setPreferredSize(dimension);
divideButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent evt) {
        DivideButtonActionPerformed(evt);
    }
});

clearButton.setText("Clear");
clearButton.setPreferredSize(dimension);
clearButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent evt) {
        ClearButtonActionPerformed(evt);
    }
});

exitButton.setText("Exit");
exitButton.setPreferredSize(dimension);
exitButton.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent evt) {
        exitButtonActionPerformed(evt);
    }
});

/* layout definition */
Container contentPane = getContentPane();
contentPane.setLayout(new BoxLayout(contentPane, BoxLayout.Y_AXIS));

contentPane.add(titlePane);
contentPane.add(inputPane);
contentPane.add(buttonPane);
contentPane.add(systemPane);

titlePane.add(titleLabel);
inputPane.add(numLabel1);
inputPane.add(numText1);
inputPane.add(numLabel2);
inputPane.add(numText2);
inputPane.add(numLabel3);
inputPane.add(numText3);
buttonPane.add(addButton);
buttonPane.add(subtractButton);
buttonPane.add(multiplyButton);
buttonPane.add(divideButton);
systemPane.add(clearButton);
systemPane.add(exitButton);

/* apply layout */
pack();
}

/* clearButton Action */
private void ClearButtonActionPerformed(ActionEvent evt) {
    numText1.setText("");
    numText2.setText("");
    numText3.setText("");
}

/* exitButton Action */
private void exitButtonActionPerformed(ActionEvent evt) {
    System.exit(0);
}

/* addButton Action */
private void AddButtonActionPerformed(ActionEvent evt) {
    try {
        Double result = parseDouble(numText1) + parseDouble(numText2);
        numText3.setText(result.toString());
    } catch (InvalidInputException e) {
        JOptionPane.showMessageDialog(this, "Please enter the number in textbox");
    }
}

/* subtractButton Action */
private void SubtractButtonActionPerformed(ActionEvent evt) {
```

## Assignment 7

```
        try{
            Double result = parseDouble(numText1) - parseDouble(numText2);
            numText3.setText(result.toString());
        } catch (InvalidInputException e) {
            JOptionPane.showMessageDialog(this, "Please enter the number in textbox");
        }
    }

    /* multiplyButton Action */
    private void MultiplyButtonActionPerformed(ActionEvent evt) {
        try{
            Double result = parseDouble(numText1) * parseDouble(numText2);
            numText3.setText(result.toString());
        } catch (InvalidInputException e) {
            JOptionPane.showMessageDialog(this, "Please enter the number in textbox");
        }
    }

    /* divideButton Action */
    private void DivideButtonActionPerformed(ActionEvent evt) {
        if(Double.parseDouble(numText2.getText()) == 0){
            JOptionPane.showMessageDialog(this, "Any number divided by zero is meaningless");
            return;
        }

        try{
            Double result = parseDouble(numText1) / parseDouble(numText2);
            String resultString = result.toString();
            numText3.setText((resultString.length()>12 ? resultString.substring(0,12):resultString));
        } catch (InvalidInputException e) {
            JOptionPane.showMessageDialog(this, "Please enter the number in textbox");
        }
    }

    /* function to correct textfield */
    public Double parseDouble(JTextField text) throws InvalidInputException{
        try{
            return Double.parseDouble(text.getText());
        }catch (NumberFormatException e) {
            throw new InvalidInputException("Divide by Zero");
        }
    }
}
```