

## **Assignment4**

**Assignment4 Project**

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**CSC615**

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## Assignment4

### Overview:

IDE: vim  
Date: May 17<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 757085b9a53876e8f1f7020a76ae0a617c84bff6
Author: Xin <tanxincn@gmail.com>
Date: Thu May 17 10:27:00 2009 -0700

    added assignment4

src/edu/nu/csc615/assignment4/DrugTester.java | 287 +++++
1 files changed, 287 insertions(+), 0 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:
[mkdir] Created dir: /home/tanxin/documents/school/nu/CSC615/project/build
```

## Assignment4

```
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 runa4
Buildfile: build.xml

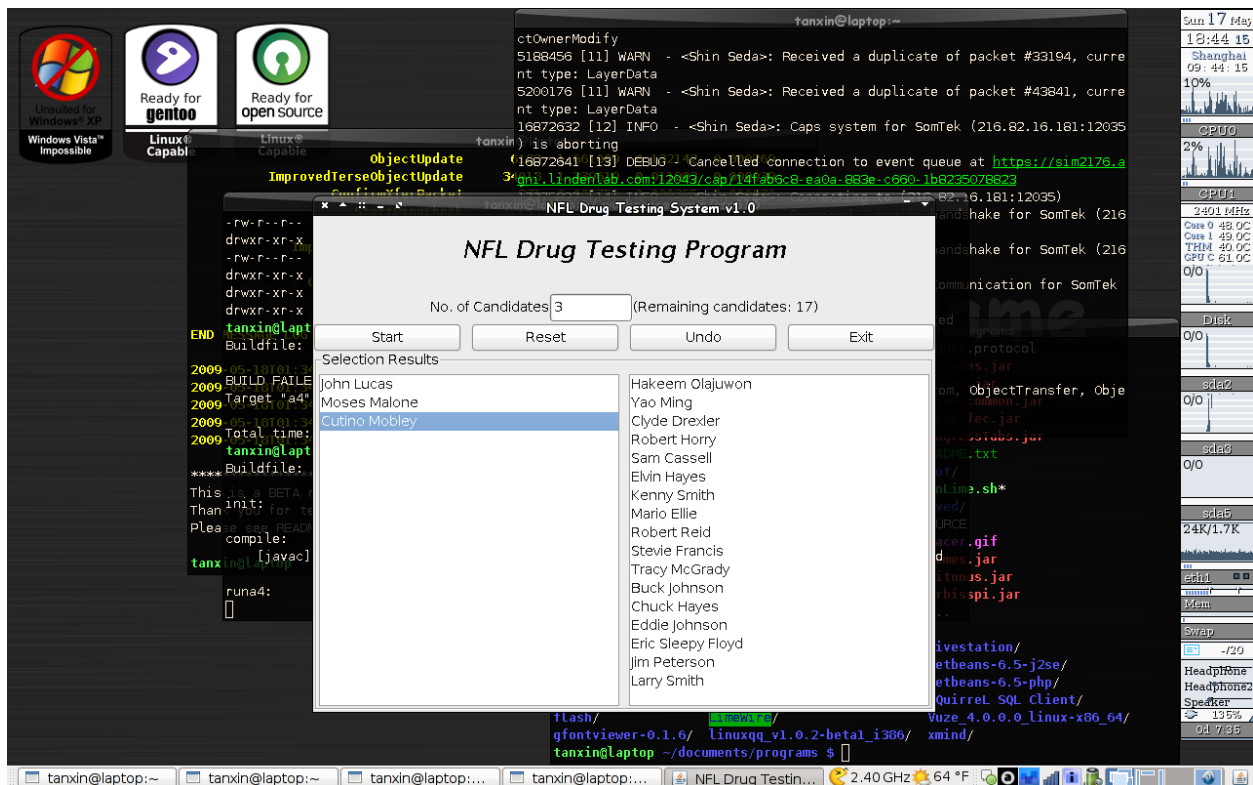
init:

compile:

run:

BUILD SUCCESSFUL
Total time: 11 seconds
```

### Screenshots:



## Assignment4

### 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/assignment4/*.java
tanxin@laptop ~/.workspace-java/csc615 $ java -cp build edu.nu.csc615.assignment4.DrugTester
```

### Code List:

edu.nu.csc615.assignment4.DrugTester.java

```
/**
 * Assignment 4
 *
 * Copyright 2005-2009 Shin Tan <tanxincn@gmail.com>
 *
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
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 *
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 * along with this program; if not, write to the Free Software
 * Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.
 *
 *
 * @author tanxin
 * Editor: vim
 * Compile: sun-jdk-1.6.0.13 64bit
 * Date: May 17th 2009
 * Makefile: build.xml (run4)
 */

package edu.nu.csc615.assignment4;

import java.awt.event.ActionEvent;
import java.util.ArrayList;
import java.util.Random;

import javax.swing.AbstractListModel;
import javax.swing.BorderFactory;
import javax.swing.BoxLayout;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JList;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.JScrollPane;
import javax.swing.JTextField;
import javax.swing.WindowConstants;
```

```

public class DrugTester extends JFrame {

    private JButton startButton;
    private JButton resetButton;
    private JButton undoButton;
    private JButton exitButton;
    private JLabel jLabel1;
    private JLabel jLabel2;
    private JLabel jLabel3;
    private JList jList1;
    private JList jList2;
    private JPanel jPanel1;
    private JPanel jPanel2;
    private JPanel jPanel3;
    private JPanel jPanel4;
    private JScrollPane jScrollPane1;
    private JScrollPane jScrollPane2;
    private JTextField jTextField1;
    private ArrayList<String> selectList;
    private ArrayList<String> candidateList;
    private ArrayList<ArrayList<String>> undoList1;
    private ArrayList<ArrayList<String>> undoList2;

    /** Creates new form NewJFrame1 */
    public DrugTester() {
        resetData();
        initGUI();
    }

    private void resetData() {
        selectList = new ArrayList<String>();
        candidateList = new ArrayList<String>();
        undoList1 = new ArrayList<ArrayList<String>>();
        undoList2 = new ArrayList<ArrayList<String>>();
        candidateList.add("Hakeem Olajuwon");
        candidateList.add("Yao Ming");
        candidateList.add("Clyde Drexler");
        candidateList.add("Moses Malone");
        candidateList.add("Robert Horry");
        candidateList.add("Sam Cassell");
        candidateList.add("Elvin Hayes");
        candidateList.add("Cutino Mobley");
        candidateList.add("John Lucas");
        candidateList.add("Kenny Smith");
        candidateList.add("Mario Ellie");
        candidateList.add("Robert Reid");
        candidateList.add("Stevie Francis");
        candidateList.add("Tracy McGrady");
        candidateList.add("Buck Johnson");
        candidateList.add("Chuck Hayes");
        candidateList.add("Eddie Johnson");
        candidateList.add("Eric Sleepy Floyd");
        candidateList.add("Jim Peterson");
        candidateList.add("Larry Smith");
    }

    private void initGUI() {
        jPanel1 = new JPanel();
        jLabel1 = new JLabel();
        jPanel2 = new JPanel();
        jLabel2 = new JLabel();
        jTextField1 = new JTextField();
        jLabel3 = new JLabel();
        jPanel3 = new JPanel();
        startButton = new JButton();
        resetButton = new JButton();
        undoButton = new JButton();
        exitButton = new JButton();
        jPanel4 = new JPanel();
        jScrollPane1 = new JScrollPane();
        jList1 = new JList();
        jScrollPane2 = new JScrollPane();
    }
}

```

```
jList2 = new JList();

setDefaultCloseOperation(WindowConstants.EXIT_ON_CLOSE);
setTitle("NFL Drug Testing System v1.0");
setMinimumSize(new java.awt.Dimension(640, 480));
getContentPane().setLayout(new BorderLayout(getContentPane(), BorderLayout.Y_AXIS));

jPanel1.setLayout(new BorderLayout(jPanel1, BorderLayout.LINE_AXIS));
jPanel1.setBorder(BorderFactory.createEmptyBorder(20, 0, 20, 0));

jLabel1.setFont(new java.awt.Font("Dialog", 3, 24)); // NOI18N
jLabel1.setText("NFL Drug Testing Program");
jPanel1.add(jLabel1);

getContentPane().add(jPanel1);

jPanel2.setBorder(BorderFactory.createEmptyBorder(10, 120, 1, 120));
jPanel2.setLayout(new BorderLayout(jPanel2, BorderLayout.X_AXIS));

jLabel2.setText("No. of Candidates");
jPanel2.add(jLabel2);

jTextField1.setText("0");
jTextField1.setPreferredSize(new java.awt.Dimension(10, 30));
jTextField1.setSize(new java.awt.Dimension(10, 30));
jPanel2.add(jTextField1);

jPanel2.add(jLabel3);

getContentPane().add(jPanel2);

jPanel3.setLayout(new java.awt.GridLayout(1, 0, 10, 0));

startButton.setText("Start");
startButton.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        startButtonActionPerformed(evt);
    }
});
jPanel3.add(startButton);

resetButton.setText("Reset");
resetButton.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        resetButtonActionPerformed(evt);
    }
});
jPanel3.add(resetButton);

undoButton.setText("Undo");
undoButton.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        undoButtonActionPerformed(evt);
    }
});
jPanel3.add(undoButton);

exitButton.setText("Exit");
exitButton.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        exitButtonActionPerformed(evt);
    }
});
jPanel3.add(exitButton);

getContentPane().add(jPanel3);

jPanel4.setBorder(BorderFactory.createTitledBorder("Selection Results"));
jPanel4.setLayout(new java.awt.GridLayout(1, 0, 10, 0));

jScrollPane1.setViewportView(jList1);
```

```
jPanel4.add(jScrollPane1);

jScrollPane2.setViewportView(jList2);
jScrollPane2.setPreferredSize(new java.awt.Dimension(110, 340));

jPanel4.add(jScrollPane2);

getContentPane().add(jPanel4);

pack();

myrefresh();
}

public static void main(String args[]) {
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new DrugTester().setVisible(true);
        }
    });
}

private void startButtonActionPerformed(ActionEvent evt) {
    int num;
    try{
        num = Integer.parseInt(jTextField1.getText());
    }catch (NumberFormatException e) {
        JOptionPane.showMessageDialog(this, "Please enter the number in textbox");
        return;
    }

    int i;
    String tmp;
    ArrayList<String> undo = new ArrayList<String>();

    if(candidateList.size()<num)
        num = candidateList.size();
    if(num<1) return;

    undoList1.add(new ArrayList<String>(selectList));
    selectList.clear();

    Random random = new Random();
    for(int j=0;j<num;j++){
        i = random.nextInt(candidateList.size());
        tmp = candidateList.remove(i);
        undo.add(tmp);
        selectList.add(tmp);
    }
    undoList2.add(undo);
    myrefresh();
}

private void myrefresh() {
    jList1.setModel(new AbstractListModel() {
        public int getSize() { return selectList.size(); }
        public Object getElementAt(int i) { return selectList.get(i); }
    });

    jList2.setModel(new AbstractListModel() {
        public int getSize() { return candidateList.size(); }
        public Object getElementAt(int i) { return candidateList.get(i); }
    });
    jLabel3.setText("(Remaining candidates: " + candidateList.size() + ")");
    if(undoList1.size()>0)
        undoButton.setEnabled(true);
    else
        undoButton.setEnabled(false);
}

private void exitButtonActionPerformed(ActionEvent evt) {
    System.exit(0);
}
```

## Assignment4

```
    }  
    private void resetButtonActionPerformed(ActionEvent evt) {  
        resetData();  
        myrefresh();  
    }  
    private void undoButtonActionPerformed(ActionEvent evt) {  
        if(undoList1.size()>0 && undoList2.size()>0){  
            selectList= undoList1.remove(undoList1.size()-1);  
            candidateList.addAll(undoList2.remove(undoList2.size()-1));  
        }  
        myrefresh();  
    }  
}
```