**Sprint #0 Report**

Instructions

**Objectives**

* Make decisions on the SOS software development project.
* Learn unit testing and GUI programming in the language of your choice.

**Deliverables and Grading Policy**

Read the “CS 449 Homework Overview” document **carefully** and make the key decisions for the software development. Use the following template to complete your report.

1. **Key Decisions of the SOS Project (2 points)**

|  |  |
| --- | --- |
| Object-oriented programming language | Java |
| GUI library (strongly encouraged) | Swing |
| IDE (Integrated Development Environment) | NetBeans |
| xUnit framework (e.g., JUnit for Java) | Junit |
| Programming style guide (must read it carefully) | Java |
| Project hosting site | https://github.com/Tim-DeGraffenreid/CS449-Software-Engineering.git |
| Other decisions if applicable |  |

Sample programming style guides:

* Google Java Style Guide: <https://google.github.io/styleguide/javaguide.html>
* Google C++ Style Guide: <https://google.github.io/styleguide/cppguide.html>
* Google Python Style Guide: <https://google.github.io/styleguide/pyguide.html>

1. **Unit testing (4 points)**

Find a tutorial on the unit test framework you have chosen and write at least two xUnit tests of a program you have written or found elsewhere. Attach here (1) the screenshot of your program execution and (2) the source code of your program.

Graphical user interface, text, application, email

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\* Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license

\* Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template

\*/

package com.mycompany.testingcourse;

/\*\*

\*

\* @author Timd

\*/

public class Operator {

public int sum(int a, int b){

return a+b;

}

public int multiplication(int a, int b){

return a\*b;

}

public String helloWorld(){

return "Hello World";

}

}

/\*

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\* Click nbfs://nbhost/SystemFileSystem/Templates/UnitTests/JUnit5TestClass.java to edit this template

\*/

package com.mycompany.testingcourse;

import org.junit.jupiter.api.Test;

import static org.junit.jupiter.api.Assertions.\*;

/\*\*

\*

\* @author Timd

\*/

public class OperatorTest {

public OperatorTest() {

}

/\*\*

\* Test of sum method, of class Operator.

\*/

@org.junit.jupiter.api.Test

public void testSum() {

System.out.println("sum");

int a = 2;

int b = 3;

Operator instance = new Operator();

int expResult = 5;

int result = instance.sum(a, b);

assertEquals(expResult, result);

}

/\*\*

\* Test of multiplication method, of class Operator.

\*/

@org.junit.jupiter.api.Test

public void testMultiplication() {

System.out.println("multiplication");

int a = 5;

int b = 3;

Operator instance = new Operator();

int expResult = 15;

int result = instance.multiplication(a, b);

assertEquals(expResult, result);

// TODO review the generated test code and remove the default call to fail.

}

/\*\*

\* Test of helloWorld method, of class Operator.

@org.junit.jupiter.api.Test

public void testHelloWorld() {

System.out.println("helloWorld");

Operator instance = new Operator();

String expResult = "helloWorld";

String result = instance.helloWorld();

assertEquals(expResult, result);

// TODO review the generated test code and remove the default call to fail.

}

\*/

}

1. **GUI programming (4 points)**

Write a GUI program in the language you have chosen for your SOS project. The GUI of your program must include text, lines, a check box, and radio buttons. While you are recommended to consider the GUI for the SOS game board, it is not required. In this assignment, any GUI program of your own work is acceptable.

Attach here (1) the screenshot of your program execution and (2) the source code of your program.

Table

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\* Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license

\* Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JFrame.java to edit this template

\*/

package sos;

import java.awt.Graphics;

/\*\*

\*

\* @author Timd

\*/

public class GameFrame extends javax.swing.JFrame {

/\*\*

\* Creates new form GameFrame

\*/

public GameFrame() {

initComponents();

}

/\*\*

\* This method is called from within the constructor to initialize the form.

\* WARNING: Do NOT modify this code. The content of this method is always

\* regenerated by the Form Editor.

\*/

@SuppressWarnings("unchecked")

// <editor-fold defaultstate="collapsed" desc="Generated Code">

private void initComponents() {

gameType = new javax.swing.ButtonGroup();

gameLabel = new javax.swing.JLabel();

simpleGameRadioButton = new javax.swing.JRadioButton();

generalGameRadioButton = new javax.swing.JRadioButton();

boardSizeLabel = new javax.swing.JLabel();

boardSizeTextField = new javax.swing.JTextField();

recordGameCheckBox = new javax.swing.JCheckBox();

jPanel1 = new javax.swing.JPanel();

jLabel1 = new javax.swing.JLabel();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

setTitle("SOS Game");

setCursor(new java.awt.Cursor(java.awt.Cursor.DEFAULT\_CURSOR));

gameLabel.setText("SOS");

gameType.add(simpleGameRadioButton);

simpleGameRadioButton.setSelected(true);

simpleGameRadioButton.setText("Simple Game");

gameType.add(generalGameRadioButton);

generalGameRadioButton.setText("General Game");

boardSizeLabel.setText("Board size");

boardSizeTextField.setHorizontalAlignment(javax.swing.JTextField.CENTER);

boardSizeTextField.setText("8");

recordGameCheckBox.setText("Record Game");

jPanel1.setBackground(new java.awt.Color(204, 204, 204));

jPanel1.setMaximumSize(new java.awt.Dimension(350, 350));

jPanel1.setMinimumSize(new java.awt.Dimension(350, 350));

jPanel1.setPreferredSize(new java.awt.Dimension(350, 350));

jPanel1.addContainerListener(new java.awt.event.ContainerAdapter() {

public void componentAdded(java.awt.event.ContainerEvent evt) {

jPanel1ComponentAdded(evt);

}

});

jPanel1.addMouseListener(new java.awt.event.MouseAdapter() {

public void mouseClicked(java.awt.event.MouseEvent evt) {

jPanel1MouseClicked(evt);

}

});

jPanel1.addComponentListener(new java.awt.event.ComponentAdapter() {

public void componentResized(java.awt.event.ComponentEvent evt) {

jPanel1ComponentResized(evt);

}

public void componentShown(java.awt.event.ComponentEvent evt) {

jPanel1ComponentShown(evt);

}

});

javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);

jPanel1.setLayout(jPanel1Layout);

jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGap(0, 350, Short.MAX\_VALUE)

);

jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGap(0, 350, Short.MAX\_VALUE)

);

jLabel1.setText("Click Board Below To Show Grid");

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());

getContentPane().setLayout(layout);

layout.setHorizontalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addGap(14, 14, 14)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addComponent(recordGameCheckBox)

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addComponent(gameLabel, javax.swing.GroupLayout.PREFERRED\_SIZE, 37, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGroup(layout.createSequentialGroup()

.addGap(43, 43, 43)

.addComponent(simpleGameRadioButton, javax.swing.GroupLayout.PREFERRED\_SIZE, 98, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(18, 18, 18)

.addComponent(generalGameRadioButton, javax.swing.GroupLayout.PREFERRED\_SIZE, 98, javax.swing.GroupLayout.PREFERRED\_SIZE)))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(boardSizeLabel, javax.swing.GroupLayout.PREFERRED\_SIZE, 63, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(boardSizeTextField, javax.swing.GroupLayout.PREFERRED\_SIZE, 40, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(28, 28, 28))))

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addContainerGap(101, Short.MAX\_VALUE)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.CENTER)

.addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED\_SIZE, 185, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(85, 85, 85))

);

layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(simpleGameRadioButton)

.addComponent(generalGameRadioButton)

.addComponent(gameLabel)

.addComponent(boardSizeLabel)

.addComponent(boardSizeTextField, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addComponent(jLabel1)

.addGap(11, 11, 11)

.addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addGap(18, 18, 18)

.addComponent(recordGameCheckBox)

.addContainerGap())

);

pack();

}// </editor-fold>

private void jPanel1ComponentShown(java.awt.event.ComponentEvent evt) {

// TODO add your handling code here:

}

private void jPanel1MouseClicked(java.awt.event.MouseEvent evt) {

// TODO add your handling code here:

Graphics g = jPanel1.getGraphics();

//Board Outline

g.drawLine(0, 0, 349,0 );

g.drawLine(349, 0, 349,349 );

g.drawLine(349, 349, 0,349 );

g.drawLine(0, 349, 0,0 );

//Draw Horizontal Grid lines

g.drawLine(0,44,350,44);

g.drawLine(0,44\*2,350,44\*2);

g.drawLine(0,44\*3,350,44\*3);

g.drawLine(0,44\*4,350,44\*4);

g.drawLine(0,44\*5,350,44\*5);

g.drawLine(0,44\*6,350,44\*6);

g.drawLine(0,44\*7,350,44\*7);

//Draw Vertical Grid Lines

g.drawLine(44,0,44,350);

g.drawLine(44\*2,0,44\*2,350);

g.drawLine(44\*3,0,44\*3,350);

g.drawLine(44\*4,0,44\*4,350);

g.drawLine(44\*5,0,44\*5,350);

g.drawLine(44\*6,0,44\*6,350);

g.drawLine(44\*7,0,44\*7,350);

}

private void jPanel1ComponentAdded(java.awt.event.ContainerEvent evt) {

// TODO add your handling code here:

}

private void jPanel1ComponentResized(java.awt.event.ComponentEvent evt) {

// TODO add your handling code here:

}

/\*\*

\* @param args the command line arguments

\*/

public static void main(String args[]) {

/\* Set the Nimbus look and feel \*/

//<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">

/\* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.

\* For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html

\*/

try {

for (javax.swing.UIManager.LookAndFeelInfo info : javax.swing.UIManager.getInstalledLookAndFeels()) {

if ("Nimbus".equals(info.getName())) {

javax.swing.UIManager.setLookAndFeel(info.getClassName());

break;

}

}

} catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(GameFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(GameFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(GameFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(GameFrame.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

}

//</editor-fold>

/\* Create and display the form \*/

java.awt.EventQueue.invokeLater(new Runnable() {

public void run() {

new GameFrame().setVisible(true);

}

});

}

// Variables declaration - do not modify

private javax.swing.JLabel boardSizeLabel;

private javax.swing.JTextField boardSizeTextField;

private javax.swing.JLabel gameLabel;

private javax.swing.ButtonGroup gameType;

private javax.swing.JRadioButton generalGameRadioButton;

private javax.swing.JLabel jLabel1;

private javax.swing.JPanel jPanel1;

private javax.swing.JCheckBox recordGameCheckBox;

private javax.swing.JRadioButton simpleGameRadioButton;

// End of variables declaration

}