

## CS 230 Lab 2 – Resize Lab

Due: 9/9/09

Points 20

### Purpose

The purpose of the lab is to learn how to:

- Create a window in Java
- Add simple controls to the window
- Handle the resize event

We will create a new project and add two classes to it. One class acts as a driver class and the other class will represent a window.

### Create the Project

Create a new project. Add a lab2package to the project. Add a driver class to the project. Next, add a class called Lab2 which is derived from **JFrame**. Create an instance of Lab2 from the driver class.

Create an interface that appears similar to the following:



The user interface consists of four JLabels and one JButton. As the user resizes the window the height and width values will change. In the example above, a JLabel is used to display 220 and another is used to display 164. It is possible to use fewer than four JLabels to create the interface. Use the ComponentListener interface to change the value of the labels as explained below.

When the Exit button or the cancel button on the caption of the window are pressed the application will terminate. Use the ActionListener interface for the JButton.

## ***Add the ComponentListener Interface***

Modify the Lab2 class definition to implement the ComponentListener interface. The ComponentListener interface has four methods:

- public void *componentHidden*(ComponentEvent e)
- public void *componentShown*(ComponentEvent e)
- public void *componentMoved*(ComponentEvent e)
- public void *componentResized*(ComponentEvent e)

These methods will be invoked when the corresponding event(s) occur. Implement each of these methods in the Lab2 class.

## ***Using the addComponentListener Method***

In order for the application to respond by calling any of these methods, it is necessary to let the application know that we are interested in listening to these events. We do so by using the *addComponentListener* method in our Lab2 constructor:

```
addComponentListener(this);
```

The code sequence:

```
this.getSize().width
```

Will return the width of the window. Use this value (and the height) to change the value of the JLabels in the *componentResized* method. The text displayed in a JLabel can be changed using the *setText* method. This method takes a single String argument.