

# Programming Structures and Abstractions (CS 2334)

## Lab 6: Menus, Toolbars and Dialogs

October 21, 2009

Due: Friday, October 23, 2009, 11:29am

### Objectives

The objectives of this lab are to:

1. analyze and extend the functionality of a java program,
2. create and manipulate basic graphical user interface components, including JMenu, JToolBar, JColorChooser and confirmation dialog boxes, and
3. add behavior to menus and tool bars by creating ActionListeners.

### Problem Context

For this lab, we will be extending our work in lab 5. In particular, we will add a menu and a tool bar to our JFrame. Both will give the user the ability to quit from the program and to select nose colors using a “color chooser.”

The sample code provides a basic skeleton for creating a window that can display all of the sensor values and manipulate the nose color using slider bars. Specifically, you will:

- write a method that will create a dialog box to confirm that the user wishes to quit from the program,
- write a method that will create a dialog box that will allow the user to select a color,
- add a menu that will enable the user to quit or select a nose color, and
- add a tool bar that will allow the user to quit or select a nose color.

## Milestones

### Milestone 1: Exit Dialog Box

Provide an implementation for the following method in class FinchDisplay:

```
private void exitChooser()
```

Specifically, this method will:

1. open a **confirmation dialog box**, and
2. if the user has clicked on “Yes”, this method will initiate a shutdown of the program by calling **closeFinch()**.

### Milestone 2: Color Chooser Dialog Box

Provide an implementation for the following method in class FinchDisplay:

```
private void colorChooser()
```

Specifically, this method will:

1. open a **JColorChooser** dialog box with the default color set to be equal to the current nose color, and
2. if a color has been specified, update the nose color and the RGB slider states.

### **Milestone 3: Add a Menu**

Add the necessary code in the `FinchDisplay()` constructor to create a menu. This menu should have two menu items:

- Set Nose Color
- Exit

The `ActionListener` for each menu item should call the methods that you have implemented above.

### **Milestone 4: Add a Tool Bar**

Add the necessary code in the `FinchDisplay()` constructor to create a tool bar at the bottom of the frame (icon files are provided as part of the zip file). This tool bar should provide two buttons:

- Set Nose Color
- Exit

The `ActionListener` for each button should call the methods that you have implemented above.

## **What to Hand In**

All materials are due: Friday, October 22, 2009, 11:29am

Hand in the following:

- an electronic copy of your modified code (to D2L), and
- include a note at time of hand-in as to which group members participated in the lab.

**NOTE: ONLY HAND IN ONE COPY PER GROUP.**

In addition to handing in a copy of the code, you must do a short demonstration of your working code for the TA or the instructor. Ideally you will do this before the end of the lab period. Otherwise, please make an appointment before the deadline. All group members should be in attendance during the demonstration.