

Programming Structures and Abstractions (CS 2334)

Lab 7: Menus, Toolbars and Dialogs

November 3, 2010

Due: Friday, November 5, 2010, 11:29am

Problem Context

For this lab, we will be extending our work in lab 6 by adding a menu and a tool bar to our GUI. Both will give the user the ability to quit from the program and to select nose colors using a *color chooser*.

Download and unzip **lab7.zip**. This file contains the classes **FinchDisplayAbstract** and **lab7Driver**. Create a new class, **FinchDisplay** that extends **FinchDisplayAbstract** and provides the missing implementation. Specifically, you will provide the abstracted methods, and you will include a constructor that configures the menu and tool bar. **DO NOT MODIFY THE PROVIDED CLASSES.**

Objectives

The objectives of this lab are to:

1. create and manipulate basic graphical user interface components, including JMenu, JToolBar, JColorChooser and confirmation dialog boxes, and
2. add behavior to menus and tool bars by creating ActionListeners.

Milestones

Milestone 1: Exit Dialog Box

Provide an implementation for `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 `colorChooser()`. Specifically, this method will:

1. open a **JColorChooser** dialog box with the default color set to be equal to the current nose color (as indicated by the LED instance variable), 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.

Note: useful menu-oriented instance variables have been defined already in **FinchDisplayAbstract**.

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.

Note: useful tool bar-oriented instance variables have been defined already in **FinchDisplayAbstract**.

What to Hand In

All materials are due: Friday, November 5, 2010, 11:29am

Hand in an electronic copy of your modified code as lab7.zip. **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.