

Homework #7 Introduction to Computing

Due: April 30, 2010 (Friday at 11:59 PM)

Select ONE of the following Chapter 9 Projects:

Project 2, Project 8, Project 9, or Project 10.

The text of the projects are below:

- 2 Write a GUI-based program that allows the user to convert temperature values between degrees Fahrenheit and degrees Celsius. The interface should have labeled entry fields for these two values. These components should be arranged in a grid where the labels occupy the first row and the corresponding fields occupy the second row. At start-up, the Fahrenheit field should contain 32.0 and the Celsius field should contain 0.0. The third row in the window contains two command buttons, labeled >>>> and <<<<. When the user presses the first button, the program should use the data in the Fahrenheit field to compute the Celsius value, which should then be output to the Celsius field. The second button should perform the inverse function.
- 8 Write a GUI-based program that allows the user to open, edit, and save text files. The GUI should include a labeled entry field for the filename and a multi-line text widget for the text of the file. The user should be able to scroll through the text by manipulating a vertical scrollbar. Include command buttons labeled **Open**, **Save**, and **New** that allow the user to open, save, and create new files. The **New** command should then clear the text widget and the entry widget.
- 9 Write a GUI-based program that implements an image browser for your computer's hard disk. At start-up, the program should load a scrolling list box with three types of items:
 - The filenames of the images in the current working directory
 - The names of any subdirectories within the current working directory
 - The string "..."The pathname of the current working directory is also displayed in an entry field. When the user selects an item in the list box and presses the **Go** button, one of three things can happen:
 - If the item is an image filename, the image is loaded and displayed.
 - If the item is a subdirectory, the program attaches to that directory and refreshes the list box with its contents.
 - If the item is the string "...", the program attaches to the parent directory if there is one and refreshes the list box with its contents.In the last two cases, the contents of the entry field are also updated.
- 10 Write a GUI-based program that allows the user to play a game of tic-tac-toe with the computer. The main window should display a 3 by 3 grid of empty buttons. When the user presses an empty button, an **X** should appear. The computer should then respond by checking for a winner, and then placing an **O** on an empty button if there is no winner. The computer should then check for a winner again. A **Reset** button should reset the game and the window to their initial state. Allow the computer to place its mark on a randomly chosen button.