Announcements

- Try to get some help from me and tutors
- Reading assignment for this slide set: Chapter 16

JavaFX UI Controls and Multimedia

JavaFX UI controls

- JavaFX provides many UI controls for developing a comprehensive user interface
- In this lecture we will explore some of the controls that we have not seen yet

Label and Labeled

- We have used the Label class to insert textual labels
- Label is a subclass of Labeled, which has many properties for working with text labels such as the text itself, alignment, spacing, graphics, text color, text wrapping, etc.
- See LabelWithGraphic.java
Button

- The Button class is also descendant class of Labeled
- We can think of a button as a label we can click on
- The ButtonBase class (superclass of Button) contains the event handler
- See ButtonDemo.java

CheckBox

- A CheckBox is used for the user to make a selection
- Like Button, CheckBox inherits all the properties such as onAction, text, graphic, alignment, graphicTextGap, textFill, contentDisplay from ButtonBase and Labeled
- See CheckBoxDemo.java

RadioButton

- Radio buttons, aka option buttons, enable the user to choose a single item from a group of choices
- RadioButton is a subclass of ToggleButton. The difference between a radio button and a toggle button is that a radio button displays a circle, but a toggle button is rendered similar to a regular button
- See RadioButtonDemo.java

TextField

- A text field can be used to enter or display a string
- TextField is a subclass of TextInputControl
- See TextFieldDemo.java
Text Area

- A `TextArea` enables the user to enter multiple lines of text
- See `DescriptionPane.java`
- See `TextAreaDemo.java`

ComboBox

- A `ComboBox`, aka a choice list or drop-down list, contains a list items from which the user choose
- `ComboBox` is defined as a generic class. The generic type `T` specifies the element type for the elements stored in a combo box
- When the user selects an item, the `String` corresponding to that item can be retrieved with the `ComboBox.getValue()` method
- See `ComboBoxDemo.java`

ScrollBar

- `ScrollBar` is a control that enables the user to select from a range of values
- Scroll bars can be horizontal or vertical
- See `ScrollBarDemo.java`

Slider

- `Slider` is similar to `ScrollBar`, but `Slider` has more features such as major and minor tick marks
- Using a slider is similar to using a scroll bar
- See `SliderDemo.java`
Example: Tic Tac Toe game

- The design is very object-oriented – each square is implemented as a Cell, which is a subclass of Pane
- Each Cell takes care of displaying itself and handling mouse clicks on itself

- See TicTacToe.java

Video and Audio

- You can use the Media class to obtain the source of the media, the MediaPlayer class to play and control the media, and the MediaView class to display the video
- Currently JavaFX supports MP3, AIFF, WAV, and MPEG-4 audio formats and FLV and MPEG-4 formats

- See MediaDemo.java

Case study: National Flags and Anthems

This case study presents a program that displays a nation’s flag and plays its anthem.

- See FlagAnthem.java