CST8221 – Java Application Programming
Hybrid Activity #4
Text Input/Output

Terminology

text (noun)

> 1. Data that consists of characters representing the words and symbols of human speech; usually, characters coded according to the some standard (ASCII, UNICODE), which assigns numeric values to numbers, letters, and certain symbols.
> 2. In word processing and desktop publishing, the main portion of a document, as opposed to headlines, tables, figures, footnotes, and other elements.

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The Nature of Things

Swing text components allow the user to display and edit the text. Programs need text components for tasks ranging from the straightforward (enter a word and press Enter) to the complex (display and edit styled text). Swing provides seven text components (***JTextField, JFormatedTextField, JTextArea, JPasswordField, JEditorPane***, and ***JTextPane***), along with supporting classes and interfaces that meet even the most complex text requirements. In spite of their different uses and capabilities, all Swing text components inherit from the same superclass, ***JTextComponent***, which provides a highly-configurable and powerful foundation for text manipulation.

Two of the most frequently used text components are *JTextField* and *JTextArea*. Both can be used to enter and/or display text. The method *setEditable(boolean b)* determines whether the text component can be used to input and edit text (true) or it can be used only for display purposes (false). They both have two convenient methods *getText()* and *setText()*. The first method can be used to get the text typed by the user; the second one can be used to display text in the text component. Both components support the basic editing operation: insert, delete, backspace, copy (Ctrl-C), cut (Ctrl-X), and paste (Ctrl-V). They both work with plain unformatted text.

The main difference between *JTextField* and *JTextArea* is that *JTextField* can accept only a single line of text (Hello Tweeter). When the *Enter* key is pressed at the end of the line, the component generates an ***ActionEvent***. *JTextArea* can works with multi-line text. Pressing the Enter key does not generate any event – it simply moves the cursor to the next line. To get the text from a text area the user interface must have an additional component (usually a button) that is used to indicate the end of the text entering process.

JavaFX provides similar controls with some enhanced capabilities: ***TextField***, ***TextArea***, ***PasswordField***, and ***HTMLEditor***. For example, both JavaFX ***TextField*** and ***TextArea*** support prompt text and provide a prompt text and right-click pop-up (context) menu for basic editing operations.

References

Textbook 1 – Chapter 12, Textbook 2 – Chapter 14
Java Swing, second edition.
Links:

https://docs.oracle.com/javase/tutorial/uiswing/components/text.html
http://docs.oracle.com/javafx/2/ui_controls/overview.htm#BABJACHC
http://docs.oracle.com/javafx/2/ui_controls/text-field.htm
https://docs.oracle.com/javase/8/javafx/user-interface-tutorial/ui_controls.htm

Code Examples

The code examples demonstrate the workings of *text field* and *text area* components and controls.

You will find the examples in **CST8221_HA04_code_examples.zip**.

Exercise

Download, compile, and run the code examples. Once you see how they work, explore very carefully the code. Pay very special attention to the Swing *TextField* program. Many of the elements of this program will be used in your first assignment.

The JavaFX text field example uses three of the java files provided in Lab 4.

Questions

Q1. Can you prevent typing text in a *JTextField* ?
Q2. Can you enter more than one line in a *JTextField*?
Q3. Can you use basic editing operations when entering text in *JTextField* or *JTextArea*?
Q4. Does JavaFX provide similar text controls?

Submission

No submission is required for this activity.

Marks

No marks are allocated for this activity, but remember that understanding how *JTextField* works is essential for building the GUI of your first assignment.

And do not forget that:

"Handle them carefully, for words have more power than atom bombs."   Pearl Strachan

but also never forget that*:*

"Never miss a good chance to shut up."   Will Rogers