20.7 Program 3b AuthoringAssistantPlus

Objectives

* Extend a base class to a derived class
* Code in an IDE and upload to grading program (from now on, this will be implied in all programs if not stated)
* Use documentation and code structure according to class guidelines

Background material

ZyBooks Chapter 7, 8  
Program 2b

Program

Previously, we wrote AuthoringAssistant.java as a **concrete** class (a class that can be instantiated). Now we want a class that does all of that plus more. This scenario is precisely a use case for extending the functionality of a class through inheritance.

You will need to retrieve your solutions to Program 2b to get started.

Task 1

Create a new Java program AuthoringAssistantPlus.java that extends AuthoringAssistant.java. This new subclass will have two new methods.

* findAndReplace(String toFind, String replaceWith) which replaces the every occurrence of the word toFind with replaceWith in the member variable usrString stored in the object, then returns the updated usrString.
* indent(int spaces) which puts the number of spaces at the start of the member variable usrString stored in the object, then returns the updated usrString.

Task 2

Update AuthDriver.java to instantiate your new class.

AuthoringAssistantPlus auth = new AuthoringAssistantPlus();

All previous methods should still work (and will be retested here). Test your new methods thoroughly in your IDE.

Task 3

AuthoringAssistant.java modifications

* Verify that usrStr access is protected or the default mode (not public and not private).
* Add menu options x and i such that:

MENU

c - Number of non-whitespace characters

w - Number of words

f - Find text

r - Replace all !'s

s - Shorten spaces

i - Indent

x = Find and replace words

q - Quit

Submit

* Upload all three files and submit to run tests.