Introduction

In lecture you have learned about methods and variable scope, as well as a little bit about graphical containers and components. In this lab you will get to put that knowledge into practice!

In this lab you will create a simple application which reads and displays simple web pages. While there are better ways to display HTML content in Java components, the primary point of this lab is to give you some practice defining and calling methods, as well as interacting with the Swing components.

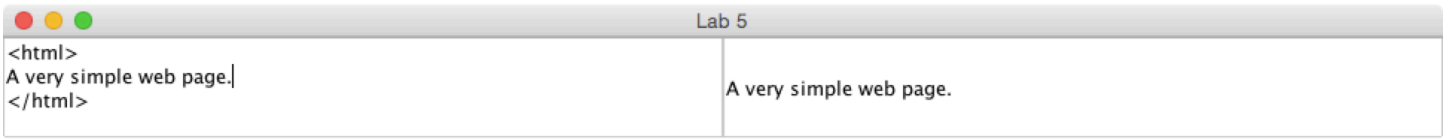
Lab Tasks (100 points)

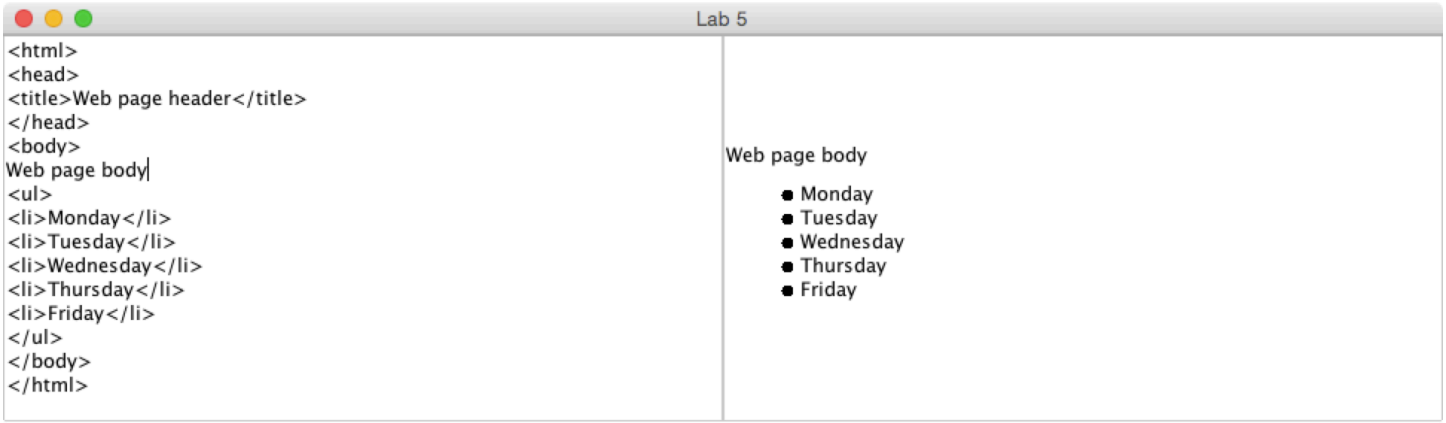
1. Log in, start Eclipse, switch to the CVS Repository Exploring perspective and check out the SP15-CSE115-Lab5 project from the Labs repository. This project has a PageReader class defined. The PageReader class provides some functionality needed to read webpage content from the web. It takes care of some issues you have not yet learned how to deal with on your own.
2. Your main task in this lab is to create a simple graphical user interface with two side-by-side components, one of which will display the raw HTML of a web page and the other which will render the HTML like a web browser would. Keep in mind that to keep things straightforward we are working with a component that is relatively limited in the HTML it can comprehend.
3. Your application will use several classes from the Swing library; you can read about them here:
    a. http://docs.oracle.com/javase/8/docs/api/javax/swing/JFrame.html
    b. http://docs.oracle.com/javase/8/docs/api/javax/swing/JLabel.html
    c. http://docs.oracle.com/javase/8/docs/api/javax/swing/JScrollBar.html
    d. http://docs.oracle.com/javase/8/docs/api/javax/swing/JTextArea.html
    e. http://docs.oracle.com/javase/8/docs/api/java/awt/GridLayout.html
4. Your application class will have composition relationships, one with a JTextArea, one with a JLabel, and one with a JFrame. These are the only composition relationships needed.
5. Set up your JFrame so that it contains a JPanel with a GridLayout of one row and two columns. Into this you will put a JTextArea on the left to hold the raw HTML of a web page, and a JLabel to render the HTML as a web browser would. Examples are shown on the next page.
6. Make sure the JTextArea has a reasonable text width (e.g. 40 characters). Make sure also to wrap each of the JTextArea and the JLabel in a JScrollPane. This adds a scroll bar to each component when the content is too big to fit in the available horizontal or vertical space.
7. Make sure to do all the usual JFrame set-up: after adding all desired components to the JFrame call pack() on it, then set its default close operation to JFrame.EXIT_ON_CLOSE, and finally make the JFrame visible.
8. Define a void method named loadPage with a String parameter. This method must use the supplied PageReader class to read the contents of the web page referenced by the String. The PageReader class has a single method you need: readPage(String) → String. Set the text of both the JTextArea and the JLabel to the returned String value, and then pack the JFrame.
9. Here are some web-sites that have a simple enough page structure that the JLabel can render them:

http://www.cse.buffalo.edu/faculty/alphonce/Courses/Spring2015/cse115/Schedule/Descriptions/Lab5/HTML/page1.shtml
http://www.cse.buffalo.edu/faculty/alphonce/Courses/Spring2015/cse115/Schedule/Descriptions/Lab5/HTML/page2.shtml
http://www.cse.buffalo.edu/faculty/alphonce/Courses/Spring2015/cse115/Schedule/Descriptions/Lab5/HTML/page3.shtml
http://www.cse.buffalo.edu/faculty/alphonce/Courses/Spring2015/cse115/Schedule/Descriptions/Lab5/HTML/page4.shtml
https://news.ycombinator.com

Feel free to experiment with others too.

If you have questions, do ask the TA during the recitation, or visit TA or instructor office hours.





Submitting your project to Web-CAT

Submit your work to Web-CAT. Make sure you submit your work to the correct section; due dates are listed on the course website.

This lab will be graded manually, so it is normal for Web-CAT to report a grade of zero, plus any early submission points you have earned.