

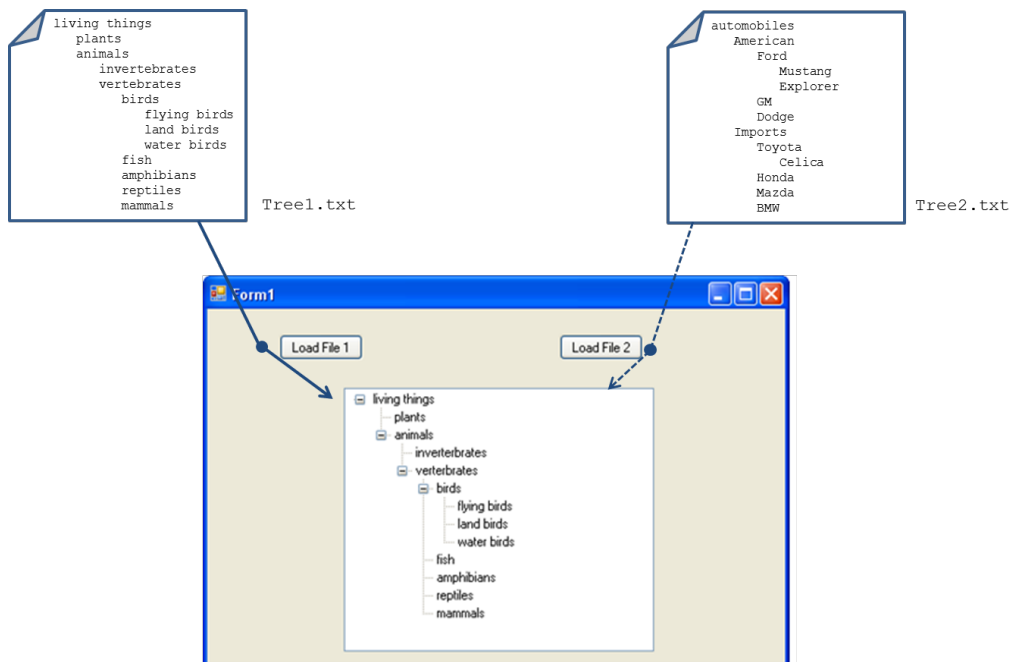
“How Would You” Assessment WEB DEVELOPER

Web Development is not for the faint of heart! Building complicated solutions while being interrupted every 20 minutes for some other high-priority “OMG, people will die if we don’t get this website updated right now!!!” emails from clients while they are boarding a ship for a 14-day Caribbean cruise with a Jimmy Buffett impersonator is a challenge. So here’s a hypothetical issue that will demonstrate your ability to code to creatively solve a problem, help us to align a fair wage, and just maybe, help a hypothetical client waste away in Margaritaville.

Overview

There are two text files with different data included in this package. Write an application to read in and parse a text file representing a tree structure and display it in a text file in a tree fashion on a web-based GUI. The GUI should have two buttons, with each button performing the function of loading and displaying the results of your code.

You can use the illustration below as a functional sample. Style of the GUI is not important. The purpose of this exercise is to test for problem-solving ability, efficiency and creativity in code.



Timing & Scoring

You have three hours. The point is not to write the program quickly, but to do it well. Correctness and style count much more than speed. Speed is a very distant third but other factors being equal, it will be a consideration. On a 100 point scale, the grading will be weighted as follows.

- Program works correctly: 60 points
- Internal style and program structure/organization: 35 points
- Time to complete: 5 points

Language / Tools

This test was developed for the PHP programmer and assumes the use of the following tools:

PHP

- a) Eclipse as your IDE
- b) PHP as the language
- c) Web application
- d) GUI: If you know of a PHP based Tree control, feel free to use it. You may also use browser-based JQuery/Javascript if you'd like.

NOTE: This test can be administered for other languages such as Java or .NET with the following noted differences. We have flexibility in how you demonstrate your programming capabilities in either .NET or Java. Unless you are specifically applying for a Java or .NET only role, you will be expected to learn the PHP framework.

.NET

- a) Visual Studio as your IDE
- b) VB or C#. Your choice. We use both languages at BlueWave.
- c) Desktop or Web application. Your choice.
- d) GUI: Use the ASP.NET Tree Control to display the tree in a collapsible/expandable graphical tree on the User Interface. (See example Windows Desktop screen)

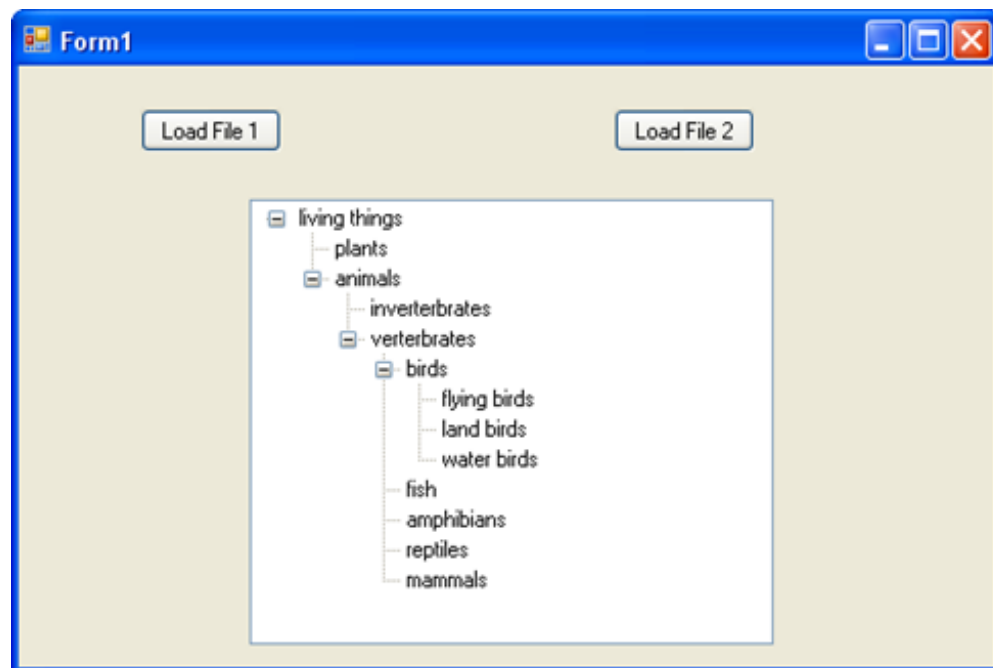
Java

- a) Eclipse as your IDE
- e) Java as the language
- b) Desktop application or Web applet/app. Your choice.
- c) GUI: Since there is no native Tree GUI control, then simply dump the tree structure into a window. You must use a GUI and not a console based solution. It is assumed you will use 'swing' but you are not forced to.

Core Requirements

User Interface

- a) Single Window
- b) Tree Control: Initially an empty control with no contents.
- c) Button One: Specifically loads tree1.txt and populates the tree control
- d) Button Two: Specifically loads tree2.txt and populates the tree control
- e) If you press Button Two after Button One, the contents of the Tree Control is “cleaned” before loading tree2.txt
- f) You may press Button One and Button Two as many times as you like in any sequence and the program should not error.
- g) Collapsing and expanding the tree is ‘build-in’ to the Tree Control. You do not have to develop any logic to create the collapse/expand capabilities.
- h) Sample output



File format

- a) The file format is a simple text file.
- b) Each line of the text file represents a single node of the tree.
- c) The nodes are presented in depth-first order, that is, each branch of the tree is fully expanded before moving to the next branch.
- d) Tab characters are used to indicate the level of the node relative to its parent.
- e) Error Checking: You may assume the file is correctly formatted. No error checking is required for this exercise.

The following is an example of the file format.

Text View	Physical View of same file
Colors Light Colors Pink Yellow White Dark Colors Black Brown Purple	<pre> Colors<cr><lf> <tab>Light Colors<cr><lf> <tab><tab>Pink<cr><lf> <tab><tab>Yellow<cr><lf> <tab><tab>White<cr><lf> <tab>Dark Colors<cr><lf> <tab><tab>Black<cr><lf> <tab><tab>Brown<cr><lf> <tab><tab>Purple<cr><lf> </pre>

Extra Credit

Let us know when you've finished the Core Requirements. If you want to extend the program and have time, we'd like to see as much of the following as you'd care to complete:

- Resizing the window resizes the tree control
- Instead of buttons with hard coded file names, allow the user to select a test file using the file picker dialog box.
 - Do a simple check and issue an error message if the file is not in the expected format.
 - and/or—
 - Limit the file picker to only select *.txt files
- Allow the user to insert, modify, and delete nodes on the tree

Explaining Your Work

When you are finished, you will walk through your code structure with the testing administrator. This way, you can explain your logic, how you approached the problem and how you came up with your solution. You can discuss any obstacles and how you overcame them. I.e., "I first went down this path, but then changed approaches once I discovered...". We want to see how you approached the problem.

If you've made it this far and still possess a desire to save the world one website at a time, please shoot an email with your solution to hr@yourdesignonline.com. We're looking forward to seeing it!

Start Time: _____ End Time: _____
 End Time: _____ (with extra credit, if done)