

# **Tries Revisited: Trie Prefix Auto-Complete**

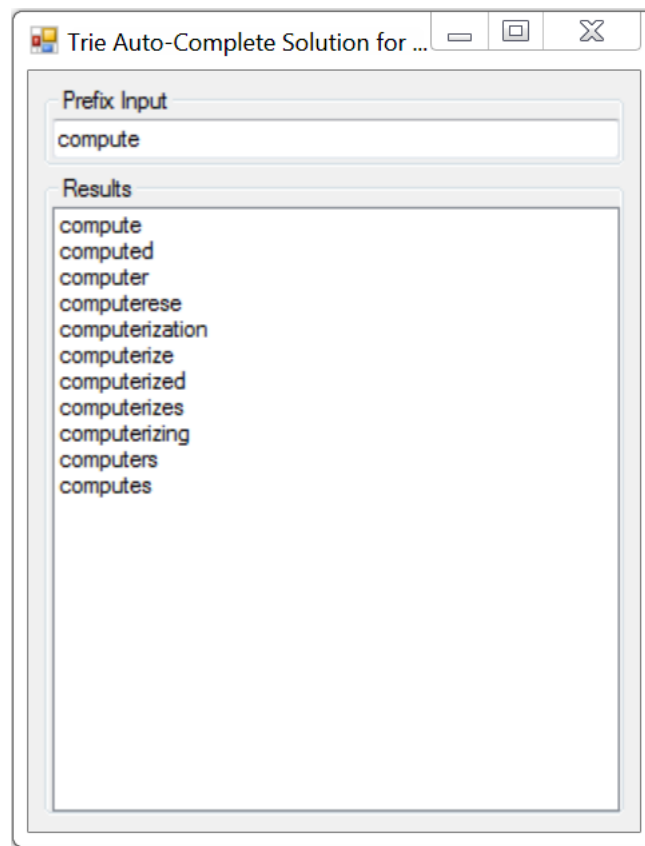
## **Cpt S 321 Homework Assignment**

### **Washington State University**

**Submission Instructions:** (see syllabus)

**Assignment Instructions:**

Build a basic WinForms application that has one text box that allows the user to type in a word. Have a list box below the text box in the interface that lists all words from the supplied dictionary that start with the prefix that the user typed in. The image below shows what your interface might look like.



To achieve this, you will need to build a trie for the array of strings loaded from the dictionary. An “academic word list” text file that was obtained from <http://oald8.oxfordlearnersdictionaries.com/academic/> is included in the .zip file for this assignment. Do not alter this file in any way.

Start by loading the lines from the dictionary file into memory, most likely by using the [File.ReadAllLines](#) function. Then, build the trie by adding all of these words. Remember that you will start back at the root for each new word. If you write an “InsertString” or “AddString” method to add a single string, then you can just call that in a loop to add each word to the trie.

As a simple example, suppose your dictionary has the words: “apply appreciate apprehension application applicable”. The trie for these 5 words looks like this:



If the user types in “app”, then your traversal is represented by the light blue nodes in the image below. The green nodes represent the leaves below that correspond to the ending points of words that start with “app”. So in this case the output should be “appreciate” and “apprehension”.

