Lab 5
Due: at the end of class

1 Exercises

Write out solutions to the exercises below. Please include the names of everyone in your group.

All questions assume that a language $\mathfrak{L}$ consists of the following four characters; a, r, s, t.

1. Draw a memory diagram of a single node from a trie that holds words in $\mathfrak{L}$. Label each necessary field in the node, as you might include in a Java class.

2. Draw a trie that represents the following dictionary: {art, arts, ars, ra, rar, tar, tars, tart}. Make sure that all the nodes are labeled with all relevant information.

3. When looking throughout a trie for suggested words, we are allowed a specific number of character substitutions. What is a shortcut that we can employ to avoid looking at every single node in the trie?

4. If we allow a single substitution in a string, **what suggestions** would our dictionary make for the word 'aar'? **Mark every node** in your trie drawing that we need to visit during our traversal, using a '*' or '☆'. Don't mark the nodes that you can skip because of shortcuts.

5. If we have traversed our trie during `getSuggestions()` and find a particular node that represents the end of a word, how can we figure out what that suggested word is? (Assume that we did not store our path from the root.) Give some short pseudocode or a description of what we can change in order to find that information.