Data Structures

Worksheet 9

BITL2

2 December 2021

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1. **Warm up:** Answer the following questions.

   (a) Give a regular expression that matches the strings `bard` and `hard` and `beard` but not `heard`.

   (b) If two strings of length n only share a single common character (not necessarily in the same spot), what is the shortest and longest regular expression (in terms of characters) that matches both?

   (c) True or false: the suffix tries for `aaaak` and `kaaaa` have the same number of edges.

   (d) What sorts of strings have binary trees as suffix tries?

2. Consider the strings `referee` and `sleeveless`.

   (a) Construct the suffix trie, suffix tree, and suffix array for both strings.

   (b) In terms of the number of edges, how will the suffix trie of `referee` change if the third character `f` is changed to something else?

   (c) Combine the suffix trees of the two strings together and indicate where the longest common substring is.

3. *Tasks from Kalvis's Sample Assignment 15*