

Week 11 Preparation

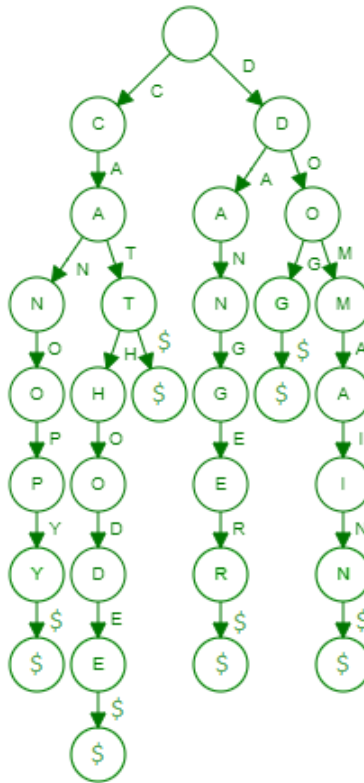
(Solutions)

Useful advice: The following solutions pertain to the preparation problems. You are strongly advised to attempt the problems thoroughly before looking at these solutions. Simply reading the solutions without thinking about the problems will rob you of the practice required to be able to solve complicated problems on your own. You will perform poorly on the exam if you simply attempt to memorise solutions to these problems. Thinking about a problem, even if you do not solve it will greatly increase your understanding of the underlying concepts.

Problems

Problem 1. Draw a prefix trie containing the strings cat, cathode, canopy, dog, danger, domain. Terminate each string with a \$ character to indicate the ends of words.

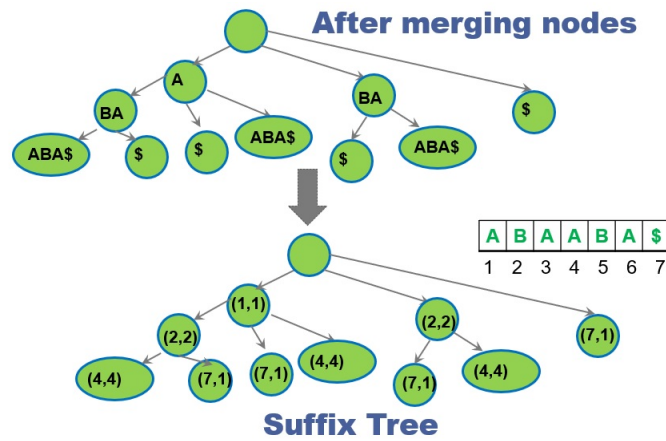
Solution



Source: <https://www.cs.usfca.edu/~galles/visualization/Trie.html>

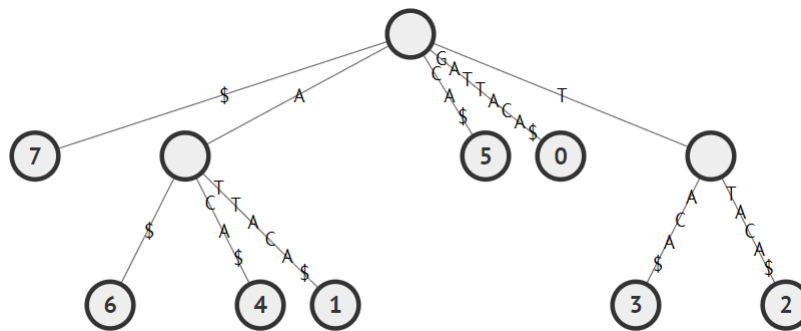
Problem 2. Draw a suffix tree for the string ABAABA\$.

Solution



Problem 3. Draw a suffix tree for the string GATTACA\$.

Solution



Source: <https://visualgo.net/en/suffixtree>

The numbers at the leaf nodes are the suffix IDs (assuming first suffix has ID 0). This visualisation merges the nodes that form a chain but do not show tuple representation of the branch. Write the tuple representation yourself. In exams, you must write the nodes in tuple (x,y) representation.