



DATA STRUCTURES & ITS APPLICATIONS

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DATA STRUCTURES & ITS APPLICATIONS

Trie, Suffix Tree

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Trie

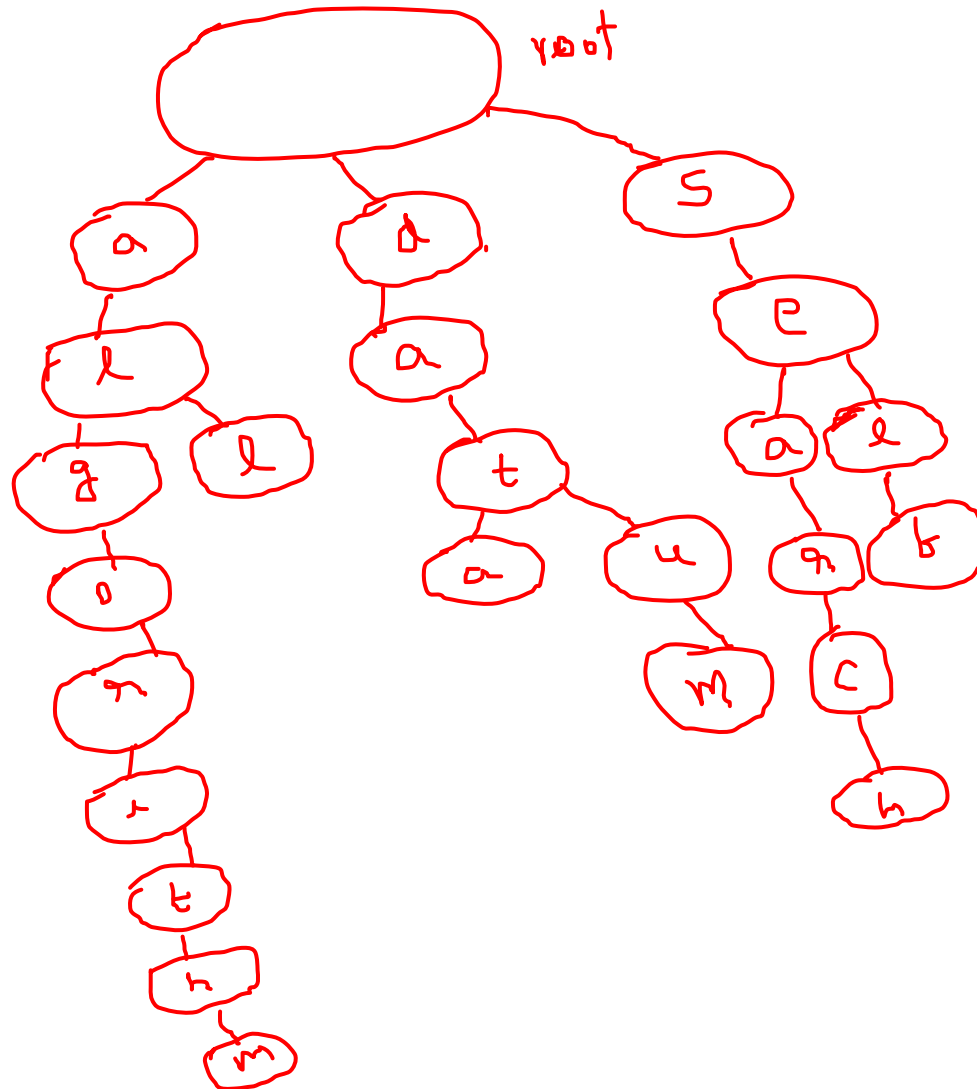


- In computer science, a trie, also called digital tree or prefix tree, is a type of search tree, a tree data structure used for locating specific keys from within a set
- These keys are most often strings, with links between nodes defined not by the entire key, but by individual characters
- Common **applications** of tries include storing a predictive text or autocomplete dictionary and implementing approximate matching algorithms, such as those used in spell checking
- Such applications take advantage of a trie's ability to quickly search for, insert, and delete entries

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Trie

Construct a Trie for the words: algorithm, data, datum, all, self, sea, search



Applications:

- Dictionary
- Auto-complete feature found on Search Engine, Mobile Phone

Advantages:

- Strings can be printed in the alphabetical order easily
- Prefix search can be done (Auto complete)

Disadvantages:

- Need for a lot of memory to store the strings because of storing many node pointers

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Suffix Tree

Suffix Trie: A trie containing all the suffixes of the given data

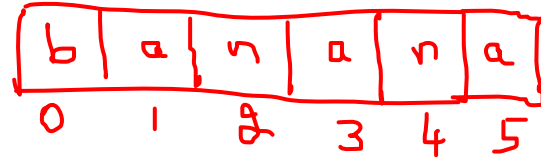
Suffix Tree: A compressed suffix Trie



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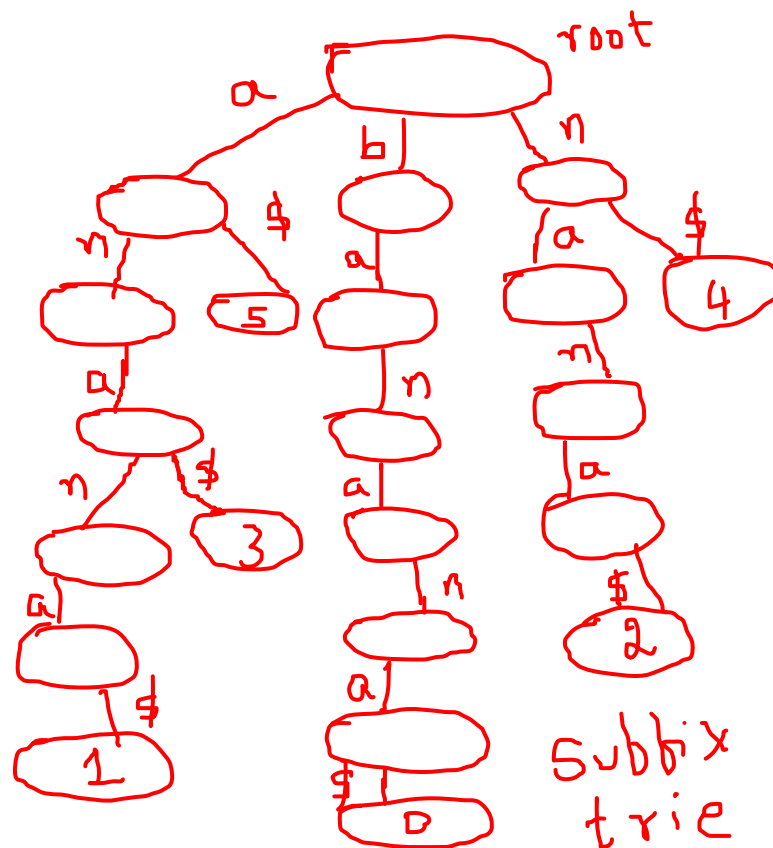
Suffix Tree

Construct a suffix trie for the word banana and show its suffix tree.

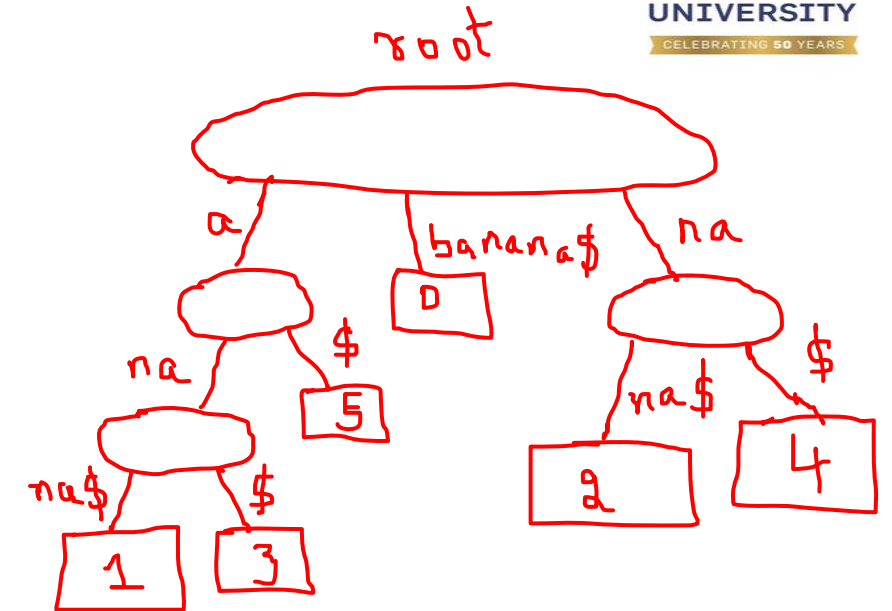


Subfixes are:

a\$
na\$
ana\$
nana\$
anana\$
banana\$



Subfix
Tree



Subfix Tree
for the word banana



THANK YOU

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