Teaser question

List 2 real-world problems that are solved with trie

Research Topics

1) Trie Data Structure
2) K-ary tree
3) Search tree

Key Words

1) Tree Data Structures
2) Key (in trie & in hash table)
3) Associative Data Structure
4) String searching (algorithm)
5) Long common subsequance (algorithm)
6) Prefix / Common Prefix
7) Prefix Searching
8) Completion tree
9) DFS & BFS (algorithms)
10) Auto Complete System
11) Radix Tree
12) Radix Sort
13) Patricia Tree
14) Suffix Tree

Questions

1) What is a prefix tree? When and where do we use prefix search?
2) What are common prefixes used for?
3) Give examples of auto complete systems.
4) What is the difference between hash table and trie and when use each
5) What are the different ways to represent a trie? what are the advantages and disadvantages of each?
6) How can Tries be optimized for memory usage?

Exercise

1) Write the following API for a Trie :
   Create
   Destroy
   Insert
   Remove
   Search
   StartsWith
   IsEmpty
   Size

*Write Each Function's Complexity (Time & Space)

2) Implement the API

3) Create a function that takes a string and return all the conitinious availabe words that it can produe