

26.4 Summary

The *search problem* is to store a collection of objects such that they can be rapidly retrieved (i.e. how do we implement a Map or Set). In particular, we are interested in searching by letter or digit.

Terminology

- Length of string key usually represented by L .
- Alphabet size usually represented by R .

Tries

Know how to insert and search for an item in a Trie. Know that Trie nodes typically do not contain letters, and that instead letters are stored implicitly on edge links. Know that there are many ways of storing these links, and that the fastest but most memory hungry way is with an array of size R . We call such tries R -way tries.

Advantages of Tries. Tries have very fast lookup times, as we only ever look at as many characters as they are in the data we're trying to retrieve. However, their chief advantage is the ability to efficiently support various operations not supported by other map/set implementations including:

- `longestPrefixOf`
- `prefixMatches`
- spell checking

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26.5 Exercises

Last updated 1 year ago

