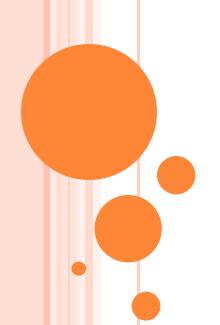




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Intro to Tries

- An efficient data structure for dictionary (which uses strings as keys)
 - English dictionary (from a given word to its definition)
 - Yellow page (from a given name to his/her phone number)
- Why you need to learn tries
 - An alternative solution to <map> and <unordered_map>
 - For job interviews
 - For homework of IR

ANIMATION OF TRIES

Quiz!

- Construction
 - key = the, a, there, answer, any, by, bye, their
- Search
 - any
 - these



Code Examples

o Examples

- trie00.cpp → C-flavored
- trie01.cpp → C++



Complexity

- Assuming we have n keys, each with m characters
- Tries
 - Time complexity

Quiz!

- o Construction: O(m*n)
- Search: O(m)
- Space complexity: O(m*n)
- Binary search
 - Time complexity
 - o Construction: O(m*n*log(n))
 - Search: O(m*log(n))
 - Space complexity: O(m*n)



References

References to tries

- Video
 - o HackerRank
 - o Trie data structure (with detailed example)
 - o CS50: Kevin Schmid, Details
- Trie: Insert and search (with code)
- Programming tutorials by SourceTrick (with code)
- CS50: slides