App Academy

Hashing, Maps, Sets

Hash Sets / Maps

- Hash sets and maps are probably the most common data structures you're ever going to use, whether we're talking about interviews or practical use
- Set - a set of unique values
  - Methods
    - new Set()
    - Set.prototype.size()
    - Set.prototype.add()
    - Set.prototype.delete()
    - Set.prototype.has()
  - Unlike an array, does not have indices
  - Useful when we need to keep track of unique pieces of data that should only appear once
    - e.g. coordinates on a matrix
  - Example: {5,7,9,3,30}

Hash Sets / Maps (cont.)

- Maps and Objects
  - store data in key-value pairs
  - There are two ways to represent hash maps in JS
    - ES6 Map
      - accepts any data types for keys
      - can iterate in insertion order
      - methods: new Map(), .get(), .set(), .has(), .delete()
    - Object
      - good for if we only need string based keys
      - non-ordered data structure
      - methods: new Object(), {}, .values(), .keys(), .entries(), delete object.property

Runtime Complexities

Maps, Objects, and Sets

Operations	Big-O Time
Insert value	O(1)
Remove value	O(1)
Search value	O(1)

As we can see, these hash data structures are extremely efficient, which is why it's so commonly used.

Questions?

Demos

- Two Sum
- Matrix Set Zeroes
- Group Anagrams

Let’s practice!

- Review:
  - Valid Sudoku
  - Longest Consecutive Sequence
- Bonus:
  - Design Twitter
  - LRU Cache