



hashmap or python dictionary based top 70 problem commonly asked in interview questions.  
give input and output of the problem.  
list 20 easy, 30 medium, 20 hard difficulty problems.



Sure, here's a list of common problems involving hashmaps (dictionaries in Python) that are often asked in interviews. Each problem includes a brief description along with sample input and output.

## Easy Difficulty Problems

### 1. Two Sum

- **Problem:** Given an array of integers and a target value, find two numbers in the array that add up to the target value.
- **Input:** `[2, 7, 11, 15]`, target = `9`
- **Output:** `[0, 1]` (because `2 + 7 = 9`)

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### 2. Single Number

- **Problem:** Given a non-empty array of integers, every element appears twice except for one. Find that single one.
- **Input:** `[4, 1, 2, 1, 2]`
- **Output:** `4`

### 3. Contains Duplicate

- **Problem:** Given an integer array, return true if any value appears at least twice in the array.
- **Input:** `[1, 2, 3, 1]`
- **Output:** `True`

### 4. Intersection of Two Arrays



- **Problem:** Given two arrays, return their intersection.
- **Input:** `[1, 2, 2, 1]`, `[2, 2]`
- **Output:** `[2, 2]`

### 5. Happy Number

- **Problem:** Write an algorithm to determine if a number is a happy number.
- **Input:** `19`
- **Output:** `True`

### 6. Valid Anagram

- **Problem:** Given two strings, determine if they are anagrams of each other.
- **Input:** `"anagram"`, `"nagaram"`
- **Output:** `True`

### 7. Ransom Note



- **Problem:** Given two strings `ransomNote` and `magazine`, return true if `ransomNote` can be constructed from `magazine`.
- **Input:** `"aabbcc"`, `"abcabc"`
- **Output:** `True`

### 8. First Unique Character in a String

- **Problem:** Find the first non-repeating character in a string.
- **Input:** `"leetcode"`
- **Output:** `0` (index of `'l'`)

### 9. Count Primes

- **Problem:** Count the number of prime numbers less than a non-negative number `n`.
- **Input:** `10`
- **Output:** `4` (primes are 2, 3, 5, 7)

### 10. Isomorphic Strings



- **Problem:** Given two strings, check if they are isomorphic.
- **Input:** `"egg", "add"`
- **Output:** `True`

### 11. Group Anagrams

- **Problem:** Group anagrams from a list of strings.
- **Input:** `["eat", "tea", "tan", "ate", "nat", "bat"]`
- **Output:** `[["eat", "tea", "ate"], ["tan", "nat"], ["bat"]]`

### 12. Find Duplicate in Array

- **Problem:** Find the duplicate number in an array where each integer is between `1` and `n`.
- **Input:** `[1, 3, 4, 2, 2]`
- **Output:** `2`

### 13. Check Permutation



- **Problem:** Given two strings, check if one is a permutation of the other.
- **Input:** `"abc", "bca"`
- **Output:** `True`

### 14. Single Element in a Sorted Array

- **Problem:** Given a sorted array where every element appears twice except one, find that single element.
- **Input:** `[1, 1, 2, 3, 3, 4, 4, 8, 8]`
- **Output:** `2`

### 15. Top K Frequent Elements

- **Problem:** Given a non-empty array of integers, return the `k` most frequent elements.
- **Input:** `[1, 1, 1, 2, 2, 3]`, `2`
- **Output:** `[1, 2]`

### 16. Find All Duplicates in an Array



- **Problem:** Find all duplicates in an array where each integer is between `1` and `n`.
- **Input:** `[4, 3, 2, 7, 8, 2, 1, 5, 6, 7]`
- **Output:** `[2, 7]`

### 17. Valid Sudoku

- **Problem:** Determine if a `9x9` Sudoku board is valid.
- **Input:** `[["5", "3", ".", ".", "7", ".", ".", ".", "."], ["6", ".", ".", "1", "9", "5", ".", ".", "."], [".", "9", "8", ".", ".", ".", "6", "."], [".", ".", ".", "6", ".", ".", ".", "8"], [".", ".", ".", "6", ".", ".", ".", "8"], [".", ".", ".", "6", ".", ".", ".", "8"], [".", ".", ".", "6", ".", ".", ".", "8"], [".", ".", ".", "6", ".", ".", ".", "8"], [".", ".", ".", "6", ".", ".", ".", "8"]]`
- **Output:** `True`

### 18. Find Pivot Index

- **Problem:** Find the pivot index where the sum of the elements to the left of the index is equal to the sum of the elements to the right of the index.

- **Input:** `[1, 7, 3, 6, 5, 6]`
- **Output:** `3`

#### 19. Majority Element

- **Problem:** Given an array of size `n`, find the majority element (element that appears more than `n/2` times).
- **Input:** `[3, 2, 3]`
- **Output:** `3`

#### 20. Intersection of Two Arrays II

- **Problem:** Given two arrays, return their intersection with duplicate elements included.
- **Input:** `[1, 2, 2, 1]`, `[2, 2]`
- **Output:** `[2, 2]`

### Medium Difficulty Problems

#### 1. Subarray Sum Equals K



- **Problem:** Find the total number of continuous subarrays whose sum equals to `k`.
- **Input:** `[1, 1, 1]`, `2`
- **Output:** `2`

#### 2. Longest Substring Without Repeating Characters

- **Problem:** Given a string, find the length of the longest substring without repeating characters.
- **Input:** `"abcabcbb"`
- **Output:** `3` (substring "abc")

#### 3. Word Pattern

- **Problem:** Given a pattern and a string, find if the string follows the same pattern.
- **Input:** `"abab"`, `"redblueredblue"`
- **Output:** `True`

#### 4. Substrings with Concatenation of All Words



- **Problem:** Given a string and a list of words, find all starting indices of substring(s) in the given string that is a concatenation of each word in the list exactly once.
- **Input:** `"barfoothefoobarman"`, `["foo", "bar"]`
- **Output:** `[0, 9]`

#### 5. Product of Array Except Self

- **Problem:** Given an array of integers, return an array where each element at index `i` is the product of all numbers in the original array except the one at `i`.
- **Input:** `[1, 2, 3, 4]`
- **Output:** `[24, 12, 8, 6]`

#### 6. Longest Palindromic Substring

- **Problem:** Given a string, find the longest palindromic substring.
- **Input:** `"babad"`
- **Output:** `"bab"` (or `"aba"`)



#### 7. Find All Anagrams in a String

- **Problem:** Given a string `s` and a non-empty string `p`, find all the start indices of `p`'s anagrams in `s`.
- **Input:** `"cbaebabacd"`, `"abc"`
- **Output:** `[0, 6]`

#### 8. Minimum Window Substring

- **Problem:** Given two strings `s` and `t`, find the minimum window in `s` which will contain all the characters in `t`.
- **Input:** `"ADOBECODEBANC"`, `"ABC"`
- **Output:** `"BANC"`

### 9. 3 Sum

- **Problem:** Given an array of integers, find all unique triplets in the array which gives the sum of zero.
- **Input:** `[-1, 0, 1, 2, -1, -4]` ↓
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