



Day 16: Python String

Problem 1: Reverse a String

Write a program to reverse a given string.

- **Input:** `"hello"`
 - **Output:** `"olleh"`
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Problem 2: Count Vowels and Consonants

Write a program to count the number of vowels and consonants in a given string.

- **Input:** `"OpenAI"`
 - **Output:** `Vowels: 3, Consonants: 3`
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Problem 3: Check Palindrome

Write a program to check if a given string is a palindrome.

- **Input:** `"madam"`
 - **Output:** `True`
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Problem 4: Title Case a Sentence

Write a program to convert the first character of each word in a sentence to uppercase and the rest to lowercase.

- **Input:** `"python programming is fun"`
 - **Output:** `"Python Programming Is Fun"`
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Problem 5: Remove Duplicates

Write a program to remove duplicate characters from a string while maintaining the original order.

- **Input:** `"success"`
 - **Output:** `"suces"`
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Problem 6: Remove All Occurrences of 'a'

Write a Python program to remove all occurrences of the character 'a' from a given string.

- **Input:** `"banana"`
 - **Output:** `"bnn"`
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Problem 7: Count Names Starting with 'N' or 'n'

You are given an array of names. Count the number of names that start with either 'N' or 'n'.

- **Input:** `names = ["Nathan", "John", "Alice", "Nancy", "Bob"]`
 - **Output:** `2`
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Problem 8: Convert to Uppercase Without Built-in Methods

Convert a given lowercase string to uppercase without using any built-in string methods.

- **Input:** `"hello"`
- **Output:** `"HELLO"`

Problem 9: Find the Longest Word in a Sentence

Write a program to find and return the longest word in a given sentence.

- **Input:** `"Learning Python is very interesting"`
 - **Output:** `"interesting"`
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Problem 10: String Rotation

Check if one string is a rotation of another string.

- **Input:** `("waterbottle", "erbottlewat")`
 - **Output:** `True`
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Problem 11: Anagram Check

Write a program to check if two strings are anagrams.

- **Input:** `("listen", "silent")`
 - **Output:** `True`
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Problem 12: Count Occurrences of a Substring

Write a program to count how many times a given substring appears in a string.

- **Input:** `"banana", "an"`
 - **Output:** `2`
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Problem 13: Remove All Vowels

Write a program to remove all vowels from a string.

- **Input:** `"Python Programming"`
 - **Output:** `"Pythn Prgrmmng"`
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Problem 14: Check if a String Contains Only Digits

Write a program to check if a given string contains only digits.

- **Input:** `"12345"`
 - **Output:** `True`
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Problem 15: Capitalize Even Indexed Letters

Write a program to capitalize letters at even indices in a string.

- **Input:** `"hello"`
 - **Output:** `"HeLlO"`
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Problem 16: Find the Most Frequent Character

Write a program to find the most frequent character in a string.

- **Input:** `"mississippi"`
 - **Output:** `"s"`
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Problem 17: Remove Leading and Trailing Spaces

Write a program to remove leading and trailing spaces from a string.

- **Input:** `" Python is great "`
 - **Output:** `"Python is great"`
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Problem 18: Swap Case of a String

Write a program to swap the case of each letter in a given string (convert uppercase to lowercase and vice versa).

- **Input:** `"PyThON"`
 - **Output:** `"pYtHOn"`
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Problem 19: Count Specific Characters

Write a program to count the occurrences of specific characters in a string.

- **Input:** `"hello world", ['l', 'o']`
 - **Output:** `{'l': 3, 'o': 2}`
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