HSC CRACKERS

Assignment on Strings

Problem 1: Awesh's Phonetic Analyzer

Awesh is developing a phonetic analyzer to determine the ratio of vowels to consonants in English text. He wants to analyze a string and count the number of vowels and consonants to understand the phonetic structure of a given text. Your task is to help him by creating a function that takes a string and returns the counts of vowels and consonants.

Problem Statement

Given a string, write a function that counts the number of vowels and consonants. Consider vowels as 'a', 'e', 'i', 'o', 'u' (both uppercase and lowercase), and consonants as any other alphabetic characters. Return the counts of vowels and consonants as a tuple.

Input

A single string text.

Output

A tuple (vowels, consonants), where vowels is the count of vowels and consonants is the count of consonants in the given text

Input	Output
"Hello, World!"	(3, 7)
"Vowel Consonant Finder"	(6,13)
“Python Programming”	(3,13)
“Counting vowels and consonants"	(8, 17)

Problem 2: Awesh's Anagram Challenge

Awesh is playing a word game that involves creating anagrams. An anagram is a rearrangement of the letters of a word to form another word or phrase, typically using all the original letters exactly once. Awesh wants to know if two given strings are anagrams of each other.

Problem Statement

Given two strings, determine if they are anagrams of each other. Two strings are anagrams if they contain the same characters with the same frequency, regardless of the order.

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Input	Output
"listen", "silent"	True
"triangle", "integral"	True
"hello", "world"	FALSE
"cinema", "iceman"	True

Problem 3: Awesh's Email Validator

Awesh is working on a contact management system, and he needs a way to validate email addresses. An email address is considered valid if it has exactly one '@' symbol, a domain with at least one '.', and contains no spaces. Awesh asks you to write a

function that checks if a given email address is valid based on these criteria.

Problem Statement

Given a string representing an email address, write a function to determine if it is valid. A valid email address must:

1) Contain exactly one '@' symbol.

2) Have a domain with at least one '.' following the '@'.

3) Contain no spaces.

Input	Output
john.doe@example.com	TRUE
example@com	FALSE
invalid@ example.com	FALSE
user@example@domain.com	FALSE

Problem 4: Awesh's Secret Message Decryption

Awesh has received an encrypted message from his friend, but he doesn't know the shift used for encryption. The message needs to be decrypted to understand its content. He asks you to create a function that can decrypt an encrypted message that was encrypted using the Caesar cipher.

Problem Statement

Given an encrypted message cipher_text, write a function to decrypt the message using a Caesar cipher. The function should determine the shift used for encryption and decrypt the message.

The decrypted message should be in its original form before encryption.

Input	Output
Fuxlwbwlrq Vxffhvvixo	Find Yourself
Lqrfn ph li brx vroyhg wklv zlwk vroxwlrq	Find Yourself
Iluvwb Vrpyhu zloo uhfhlyh d sulch	Find Yourself
Kdssb frglqj	Find Yourself