**Assignment**

Python coding Questions

Strings :

1. Reverse a String:

Write a Python program that takes a string as input and returns the reverse of that string.

Example Input: `"hello"`

Example Output: `"olleh"`

2. Count Vowels:

Create a Python program that counts the number of vowels (a, e, i, o, u) in a given string.

Example Input: `"programming is fun"`

Example Output: `5` (There are five vowels in the input string.)

3. Palindrome Check:

Write a Python program that checks if a given string is a palindrome (reads the same forwards and backwards). Ignore spaces, punctuation, and capitalization.

Example Input: `"A man, a plan, a canal, Panama"`

Example Output: `True`

4. Anagrams Check:

Implement a Python program that checks if two strings are anagrams of each other. Anagrams are words or phrases formed by rearranging the letters of another.

Example Input: `"listen"` and `"silent"`

Example Output: `True` (These two strings are anagrams of each other.)

5. Longest Substring Without Repeating Characters:

Write a Python function that finds the length of the longest substring without repeating characters in a given string.

Example Input: `"abcabcbb"`

Example Output: `3` (The longest substring without repeating characters is `"abc"`.)