Q1. Does assigning a value to a string's indexed character violate Python's string immutability?

***Ans***: Yes, assigning a value to a string's indexed character violates Python's string immutability because strings in Python are immutable.

Q2. Does using the += operator to concatenate strings violate Python's string immutability? Why or why not?

***Ans***:

Using the += operator to concatenate strings does not violate Python's string immutability because it does not modify the original string. Instead, it creates a new string object and assigns it to the same variable.

Q3. In Python, how many different ways are there to index a character?

***Ans***:

In Python, there is only one way to index a character in a string, which is to use square brackets ([]) notation with the index of the desired character. The index starts from 0 for the first character, and it increases by 1 for each subsequent character in the string.

Q4. What is the relationship between indexing and slicing?

***Ans***:

indexing refers to the operation of accessing a single character from a string by specifying its index. Indexing is done using square brackets ([]) notation with the index of the desired character. The index starts from 0 for the first character, and it increases by 1 for each subsequent character in the string.

Slicing, on the other hand, refers to the operation of accessing a substring of a string by specifying a range of indices. Slicing is done using the same square brackets notation, but with two indices separated by a colon (:). The first index specifies the start of the range, and the second index specifies the end of the range (exclusive). If either index is omitted, it defaults to the start or end of the string, respectively.

Q5. What is an indexed character's exact data type? What is the data form of a slicing-generated substring?

***Ans***:

The exact data type of an indexed character depends on the programming language and data structure being used. A slicing-generated substring is typically of the same data type as the original string. In Python, a slice of a string returns a new string object, which has the same data type as the original string.

Q6. What is the relationship between string and character "types" in Python?

***Ans***:

the relationship between strings and characters is that strings are made up of one or more characters, and each character is represented by a single-character string.

Q7. Identify at least two operators and one method that allow you to combine one or more smaller strings to create a larger string.

***Ans***: + operator and \* operator

Q8. What is the benefit of first checking the target string with in or not in before using the index method to find a substring?

***Ans***:

it avoids raising an error when the substring is not found in the target string.

Q9. Which operators and built-in string methods produce simple Boolean (true/false) results?

***Ans***:

1.Operators: ==, !=, <, >

2. Built-in string methods:

startswith ():

endswith ():

isalnum ():

isalpha ():

isdigit ():