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

Yes, it gives error too.

greeting = "Hello, world!"

greeting[0] = 'J' # ERROR!

print(greeting)

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

The in-place operator += can also be used. The string on the right is concatenated after the string variable on the left.

s1 += s2

print(s1)

# aaabbb

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

We can access characters in a String in Two ways :

Accessing Characters by Positive Index Number

Accessing Characters by Negative Index Number

Q4. What is the relationship between indexing and slicing?

Indexing

You can access a single item of a Python sequence (such as string, tuple, or list) with the corresponding integer indices. Indices in Python are zero-based. This means the index 0 corresponds to the first (leftmost) item of a sequence, 1 to the second item, and so on.

Slicing

Slicing in Python is similar to indexing but returns a sequence of items instead of a single item. The indices used for slicing are also zero-based.

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

For indexing it is string but for slicing it can be list, string, tuple etc

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

In Python, Strings are arrays of bytes representing Unicode characters. However, Python does not have a character data type, a single character is simply a 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.

Using +,\* operator. Using join method

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?

If any element which is not present is searched,

it returns a ValueError

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

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| --- | --- |
| str.isalnum() | String consists of only alphanumeric characters (no symbols) |
| str.isalpha() | String consists of only alphabetic characters (no symbols) |
| str.islower() | String’s alphabetic characters are all lower case |
| str.isnumeric() | String consists of only numeric characters |
| str.isspace() | String consists of only whitespace characters |
| str.istitle() | String is in title case |
| str.isupper() | String’s alphabetic characters are all upper case |