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

String’s indexed character cannot to be assigned a New value , as Strings are immutable.

Example:

name = "Reinforcement"

print(id(name)) #73472

name[0] = "V" # Raises TypeError

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

+= operator is used to concatenate strings, it does not violate Python’s string immutability Property. Because doing so new creates a new association with data and variable. E.g. str\_1="a" and str\_1+="b. effect of this statements to create string ab and reassign it to variable str\_1, any string data is not actually modified.

str\_1 = 'a'

print(id(str\_1))

str\_1 += 'b'

print(id(str\_1)) # Does not Modify existing string, Creates a New String Object

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

A Character in string can be indexed using string name followed by index number of character in square bracket. Positive Indexing i.e. first index is 0 an so on, or Negative Indexing i.e. last letter is -1 and so on can be used to index a character.

in\_string = "iNeuron Full Stack Data Science"

print(in\_string[9],in\_string[10],in\_string[2]) # Positive Indexing

print(in\_string[-1],in\_string[-5],in\_string[-2]) # Negative Indexing

**Q4. What is the relationship between indexing and slicing?**

We can access elements of sequence datatypes by using slicing and indexing. Indexing is used to obtaining individual element while slicing for sequence of elements.

in\_string = "iNeuron Full Stack Data Science"

print(in\_string[1],in\_string[3],in\_string[5]) # Indexing

print(in\_string[1:15]) # Slicing

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

Indexed characters and sliced substrings have datatype String.

in\_string = "iNeuron Full Stack Data Science"

print(type(in\_string[3])) # Indexing -> str

print(type(in\_string[1:10])) # Indexing -> str

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

Object that contains sequence of character datatypes are called 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.**

+, += and \* allow to combine one or more smaller strings to create a larger string. <string>.join(<sep>) method joins element of iterable type like list and tuple to get a combined string.

in\_string = 'iNeuron '

in\_string += 'Full Stack Data Science'

print(in\_string + ' FSDS')

print('FSDS '\*3)

print(" ".join(['I','N','E','U','R','O','N'])) # List Iterable

print(" ".join(('I','N','E','U','R','O','N')).lower()) # Tuple Iterable

**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?**

Checking the target string with in or not Operators before using the index method to find a substring just helps confirming availability of substring and thus avoid raising of ValueError.

Example:

in\_string = "ineuron"

in\_string.index('x') # Raises ValueError

in\_string.index('u') # 3

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

The String Operators and built-in methods to Produce Simple Boolean (True/False) Results are:

* in
* not
* <string>.isalpha()
* <string>.isalnum()
* <string>.isdecimal()
* <string>.isdigit()
* <string>.islower()
* <string>.isnumeric()
* <string>.isprintable()
* <string>.isspace()
* <string>.istitle()