Python_advance_assignment_12

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

In [ ]:

```
Ans: 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 ?

In [ ]:

```
Ans: += 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.
```

In [1]:

```
str_1 = 'a'
print(id(str_1))
str_1 += 'b'
print(id(str_1)) # Does not Modify existing string, Creates a New String Object
```

```
2316691677168
2316770083440
```

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

In [ ]:

```
Ans: 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 [2]:

```
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
```

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```

Q4. What is the relationship between indexing and slicing?

In [ ]:

```
Ans: 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 [3]:

```
in_string = "iNeuron Full Stack Data Science"
print(in_string[1],in_string[3],in_string[5]) # Indexing
print(in_string[1:15]) # Slicing
```

```
N u o
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```

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

In [ ]:

```
Ans: Indexed characters and sliced substrings have datatype String.
```

In [4]:

```
in_string = "iNeuron Full Stack Data Science"
print(type(in_string[3])) # Indexing -> str
print(type(in_string[1:10])) # Indexing -> str
```

```
<class 'str'>
<class 'str'>
```

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

In [ ]:

```
Ans: Object that contains sequence of character datatypes are called String.
```

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

In [ ]:

```
Ans: +, += 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 [5]:

```
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
```

```
iNeuron Full Stack Data Science FSDS
FSDS FSDS FSDS
I N E U R O N
i n e u r o n
```

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 ?

In [ ]:

```
Ans: 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?

In [ ]:

```
Ans: 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()
```