python_advance_assignment_13

May 31, 2023

Q1. Can you create a programme or function that employs both positive and negative indexing? Is there any repercussion if you do so?

[1]:
```python
my_list = [1,2,3,4,5,6,6,7,8,9,10]
def bi_index(in_list,position):
    return in_list[position]
print('Positive Indexing ->',bi_index(my_list,5))
print('Negative Indexing ->',bi_index(my_list,-1))
```

```
Positive Indexing -> 6
Negative Indexing -> 10
```

Q2. What is the most effective way of starting with 1,000 elements in a Python list? Assume that all elements should be set to the same value.

[2]:
```python
start_list = [1 for x in range(1001)] # Quick Way to Create a List Using List
↪Comprehension
print(start_list)
```

```
[1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
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1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
1, 1, 1]
```

Q3. How do you slice a list to get any other part while missing the rest? (For example, suppose you want to make a new list with the elements first, third, fifth, seventh, and so on.)

[3]:

```python
my_list = [x for x in range(1,15)]
print(f'my_list -> {my_list}')
sliced_list = my_list[::2]
print(f'sliced_list -> {sliced_list}')
```

```
my_list -> [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]
sliced_list -> [1, 3, 5, 7, 9, 11, 13]
```

Q4. Explain the distinctions between indexing and slicing ?

[ ]:

```
=> Indexing is used when we have to work on index level. While slicing are used␣
  ↪over a range of items.
```

[4]:

```python
my_list = [x for x in range(1,15)]
print(f'my_list -> {my_list}')
print(f'Example of indexing -> {my_list[1], my_list[5]}')
print(f'Example of slicing -> {my_list[1:5]}')
```

```
my_list -> [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]
Example of indexing -> (2, 6)
Example of slicing -> [2, 3, 4, 5]
```

Q5. What happens if one of the slicing expression's indexes is out of range?

[ ]:

```
=> If start index is out of range then it will return empty entity.
```

[5]:

```python
my_list = [x for x in range(1,15)]
my_list = [x for x in range(1,15)]
print(f'my_list -> {my_list}')
```

```
print(f'Case #1 -> {my_list[20:]}')
print(f'Case #2 -> {my_list[10:100]}')
```

```
my_list -> [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]
Case #1 -> []
Case #2 -> [11, 12, 13, 14]
```

Q6. If you pass a list to a function, and if you want the function to be able to change the values of the list—so that the list is different after the function returns—what action should you do?

[ ]:
```
=> Always use return statement, if we want the see the changes in the input␣
 ↪list.
```

[6]:
```
my_list = [1,2,3,4,5,6]
def modify_list(in_list):
    in_list.append(200)
    return in_list
print(modify_list(my_list))
```

```
[1, 2, 3, 4, 5, 6, 200]
```

Q7. What is the concept of an unbalanced matrix?

[ ]:
```
=> In Unbalanced Matrix number of rows is not same as number of columns.
```

Q8. Why is it necessary to use either list comprehension or a loop to create arbitrarily large matrices?

[ ]:
```
=> List comprehension or a Loop helps creation of large matrices easy.
it also helps to implemeent and avoid manual errors. it also makes reading code␣
 ↪easy.
Also lot of time for manual feeding is reduced.
```