Day 2

Date 7 June 2024

Daily Report:-

Today's training was based on Introduction of Python programming language. As Python language is important aspect for Machine learning and Artificial Intelligence.

Today's Topic Covered in Class:-

List In Python

Lists are used to store multiple items in a single variable.

charactristics of List:-

- Ordered
- Zero Based
- Mutable
- Heterogeneous
- Growable and dynamic
- Nestable
- Iterable
- Sliceable
- Combinable
- Copyable

List Methods

Given below are List methods in Python:-

- len() method is used to find length of list

```
list_name.len()
```

- list constructor is used to make a list

```
list_name = list((elements))
```

- append method is used to add another list or element in first list at end.

```
list_name.append(second_list or element)
```

- clear is used to convert list into empty list.

```
list_name.clear()
```

- copy method is used to copy first list into another list

```
first_list.copy(second_list)
```

- count is used to count occurence of specififc element

```
list_name.count(element)
```

- extend method is used to add two list as one list.

```
first_list.extendd(second_list)
```

- index method is used to find index of element in list

```
list_name.index(element)
```

- insert method is used to insert new element of any data type in list at specific index

```
list_name.insert(index,element)
```

- pop method is used to remove element from specific index. by default it remove element from end.

```
list_name.pop(index)
```

- remove method is used to remove element.

```
list_name.remove(element)
```

Tuple Method

In Python, a tuple is an ordered, immutable collection of elements. Tuples are similar to lists, but the key difference lies in their immutability. Once a tuple is created, its elements cannot be changed or modified. This makes tuples suitable for situations where data should remain constant throughout the program.

syntax

```
tuple_name = (element)
```

Tuple Method

- Tuple Constructor

```
tuple_name = tuple((elements))
```

- To access an element of tuple index number is used.

```
tuple_name[index]
```

- To find if element exist of not "in" is keyword.

```
if element in tuple:
  # code
```

- count method is used to count the occurence of specific element.

```
tuple_name.count(element)
```

- index() method is used to find index of element.

```
tuple_name.index(element)
```

Modifie the tuple

Tuple is immutable it can't be modified. first tuple are convert into list using list comprehension. after all modification list is converet into tuple using tuple comprehension.

Some practice Questions:-

Q. There are given some colors. Print 0,1,-1,-2 index elements.

```
color = ["red","blue","green","yellow"]
print("First element: ",color[0])
print("second element: ",color[1])
print("last element: ",color[-1])
print("second last element : ",color[-2])
print("third element : ",color[2])
#print("index 4 element : ",color[4])
```

```
#print("index 4 element : ",color[4])
```

```
First element:  red
second element:  blue
last element:  yellow
second last element :  green
third element :  green
```

+ Code + Text

```
Start coding or generate with AI.
```

Q. There gives the water level. change the seond water level to 693.

```
water_level = [730, 709, 682, 712, 733, 751, 740]
water_level[2] = 693
print(water_level)
```

```
[730, 709, 693, 712, 733, 751, 740]
```

Q. Given water level append 772 in list.

```
water_level = [730, 709, 682, 712, 733, 751, 740]
water_level.append(772)
water_level
```

```
[730, 709, 682, 712, 733, 751, 740, 772]
```

Q. Append q3 list and new water level list with level 772,770,745.

```
water_level2 = [772,770,745]
water_level.extend(water_level2)
water_level
```

```
[730, 709, 682, 712, 733, 751, 740, 772, 772, 770, 745]
```

Q. From given list pop 0 index element

```
water_level = [730, 709, 682, 712, 733, 751, 740]
water_level.pop(0)
water_level
```

```
[709, 682, 712, 733, 751, 740]
```

```
#Tuple Questions

color = tuple(("red","green","blue"))
color[1]
```

```
'green'
```

```
color[1] = "grey"
color
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-7-7fe13a880e82> in <cell line: 1>()
----> 1 color[1] = "grey"
      2 color

TypeError: 'tuple' object does not support item assignment
```

```
numbers = (1,2,3,4,5)
numbers[0:3:1]
```

```
(1, 2, 3)
```

```
numbers = (1,2,3,4,5)
numbers[::-1] #Reverse the Tuple
```

```
(5, 4, 3, 2, 1)
```

Double-click (or enter) to edit

```
fruits = ("apple","bananas")
barries = ("strawberry","blueberry")
Fruit = list(fruits)
Barry = list(barries)
Fruit.extend(Barry)
Fruit.extend(Fruit)
Fruit.extend(Fruit)
Fruit.extend(Fruit)
combined_fruits = tuple(Fruit)
combined_fruits
```

```
('apple',
 'bananas',
 'strawberry',
 'blueberry',
 'apple',
 'bananas',
 'strawberry',
 'blueberry',
 'apple',
 'bananas',
 'strawberry',
 'blueberry',
 'apple',
 'bananas',
 'strawberry',
 'blueberry',
 'apple',
 'bananas',
 'strawberry',
 'blueberry',
 'apple',
 'bananas',
 'strawberry',
 'blueberry',
 'apple',
 'bananas',
 'strawberry',
 'blueberry',
 'apple',
 'bananas',
 'strawberry',
 'blueberry')
```

Q. From Given tuple print inner tuple.

```
outer_tuple = ("apple",("red","green","yellow"))
outer_tuple[1]
```