Day 09 (09/08/23): (List)
Sequence in datatypes:

1) Lists (Array):
Lists are used to store multiple items (values) in a single variable.
Lists are created using square brackets.
Lists are ordered.
Lists allow duplicates.
Lists are changeable (Mutable).

Code:
```
nums=["integers","decimals","duplicates","realnumbers",26,15,35,86]
print(type(nums))
print(nums)
```

Output:
<class 'list'>
['integers', 'decimals', 'duplicates', 'realnumbers', 26, 15, 35, 86]

2) Indexing in List:
Code:
```
print(nums[2])
print(nums[1:3])
```

Output:
duplicates
['decimals', 'duplicates']

3) Value/Item changing: It can be done by using the indexing in a list and equating the index with changing value.
Code:
```
nums[2]="nonduplicates"
print(nums)
print("")
```

Output:
['integers', 'decimals', 'nonduplicates', 'realnumbers', 26, 15, 35, 86]

4) .append(): Append is a function which can be used to add a new element to the end of the list.

Code:
```
num1=[]
num1.append("Age")
print(num1)
```

Output:
['Age']

5) .insert(): Insert() is used to add an item to the specified index or position in list.
Code:

```
nums.insert(1,"greater")
nums.insert(2,"civil")
print(nums)
```

Output:
['integers', 'greater', 'civil', 'decimals', 'nonduplicates', 'realnumbers', 26, 15, 35, 86]

6) .remove(): Remove() is used to remove the specified value(Item).
Code:

```
nums.remove("civil")
print(nums)
```

Output:
['integers', 'greater', 'decimals', 'nonduplicates', 'realnumbers', 26, 15, 35, 86, 'civil']
(Only first item will be removed, if the same item in repeated multiple items)

7a) .pop() [Pop Method]: Removes the values using specified Index number.
Code:

```
nums.pop(3)
print(nums)
```

Output:
['integers', 'greater', 'decimals', 'realnumbers', 26, 15, 35, 86, 'civil']

7b) .empty Pop: Empty pop [pop()) removes the last value.
Code:

```
nums.pop()
print(nums)
```

Output:
['integers', 'greater', 'decimals', 'realnumbers', 26, 15, 35, 86]

8) .count(): Count() is used to count the number of times the item/value repeated
Code:

```
x=nums.count('civil')
print(x)
```

Output:
0

9) len(list): Len(list) is used to count the total no. of. Items in the list.
Code:

```
y=len(nums)
print(y)
```

Output:
8

10) .reverse(): Reverse() is used to reverse the order of the item in the list
Code:

```
nums.reverse()
print(nums)
```

Output:
[86, 35, 15, 26, 'realnumbers', 'decimals', 'greater', 'integers']

11 a) sort(): Sort() is used to arrange the given elements in a specified order.
Code:

```
nums3=[2,4,7,5,53,43,54,24,86,2,676,9,63]
nums3.sort()
print(nums3)
```

Output:
[2, 2, 4, 5, 7, 9, 24, 43, 53, 54, 63, 86, 676]

12) Descending Sort(): It is used to arrange the items in descending order.
Code:

```
nums3.sort(reverse=True)
print(nums3)
```

Output:
[676, 86, 63, 54, 53, 43, 24, 9, 7, 5, 4, 2, 2]

13) Remove Duplicates from List:
Duplicates of a set or list can be removed by using *set() function.

Code:

```
list1=[21,25,65,21,59,25,21,26,59]
nodups=[*set(list1)]
print(nodups)
```

Output:
[65, 21, 25, 26, 59]

14) .clear(): Clear () is used to clear all the items/value in the list.

Code:

```
nums.clear()
print(nums)
```

Output:

[]