# **Python Assignment - 4**

# **What exactly is []?**

Ans: Usually [] are used to define an empty list. List are ordered collection of elements. The elements can be any type like strings, numbers, Booleans, lists and tuples etc.

1. **In a list of values stored in a variable called spam, how would you assign the value 'hello' as the third value? (Assume [2, 4, 6, 8, 10] are in spam.)**

Ans: Insert() can be used to add an element at the desired position. To assign ‘hello’ as the third value you need to write as:

spam.insert(4,’hello’)

spam

**Let's pretend the spam includes the list ['a', 'b', 'c', 'd'] for the next three queries.**

1. **What is the value of spam[int(int('3' \* 2) / 11)]?**

Ans: ‘d’

1. **What is the value of spam[-1]?**

Ans: ‘d’

1. **What is the value of spam[:2]?**

Ans: [‘a’,’b’]

**Let's pretend bacon has the list [3.14, 'cat,' 11, 'cat,' True] for the next three questions.**

**Bacon = [3.14,’cat’,11,’cat’,True]**

1. **What is the value of bacon.index('cat')?**

Ans: 1

1. **How does bacon.append(99) change the look of the list value in bacon?**

Ans: [3.14, ‘cat’, 11, ‘cat’, True, 99]

1. **How does bacon.remove('cat') change the look of the list in bacon?**

Ans: [3.14, 11,’cat’, True, 99]

1. **What are the list concatenation and list replication operators?**

Ans: The operator for list concatenation is +, while the operator for replication is \*.

1. **What is difference between the list methods append() and insert()?**

Ans: The difference between the list methods append() and insert() are as follows:

Append(): It can be used to add an element in the list.

Example: my\_list = [1,2,3,4,5]

my\_list.append(6)

my\_list => [1,2,3,4,5,6]

Insert(): It can be used to add an element at the desired location

Example: my\_list.insert(3,’a’)

My\_list => [1,2,3,’a’,4,5]

1. **What are the two methods for removing items from a list?**

Ans: The two methods of removing items for a list are as follows:

1. Remove() : It can be used to find the first occurrence of the element and to remove it.

Example : my\_list.remove(3)

My\_list => [1,2,4,5]

1. Pop() : It can be used to remove an element from specified index and store its value in a variable.

Example: popped\_element = my\_list.pop(4)

Popped\_element => [1,2,3,5]

1. **Describe how list values and string values are identical.**

Ans: Both strings and lists have lengths whereas a string's length is the number of characters in the string and a list's length is the number of items in the list.

1. **What's the difference between tuples and lists?**

Ans: List are ordered collection of elements. List are mutable i.e. the elements can be added, altered or removed from the list. List can be created using [] whereas tuple is a data structure which holds collection of different objects in it. It can be created using ().

**14. How do you type a tuple value that only contains the integer 42?**

Ans: num = (42)

**15. How do you get a list value's tuple form? How do you get a tuple value's list form?**

Ans: To get a list value’s tuple form, we can use the tuple() function to pass the full list as an argument, and it will return the tuple data type as an output. To get a tuple value’s list form, we can use the list() function to pass the full list as an argument, and it will return the list data type as an output.

**16. Variables that "contain" list values are not necessarily lists themselves. Instead, what do they contain?**

Ans: Variables will contain references to list values rather than list values themselves.

**17. How do you distinguish between copy.copy() and copy.deepcopy()?**

Ans: copy.copy() create reference to original object. If you change copied object then original object will be changed. copy.deepcopy() creates new object and does real copying of original object to new one. If you change the new deepcopied object, it doesn't affect original object.