**ASSIGNMENT 4**

1. What exactly is []?

**Ans1**. [] is used to denote an empty list.

2. 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.)

**Ans2**. spam[2] = ‘hello’

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

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

**Ans3**. Above expression will return the value present at 3rd index that is 4th element of the list. The value will be ‘d’.

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

**Ans4**. Value will be ‘d’.

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

**Ans5**. It will return values from index 0 to index 1. So he returned values will be ‘a’, ‘b’.

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

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

**Ans6**. This will return the index of ‘cat’ that is 1.

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

**Ans7**. Append function adds the element at the end of the list, after that the list will look like [3.14, 'cat,' 11, 'cat,' True, 99]

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

**Ans8**. bacon.remove('cat’) wil remove the element ‘cat’.

9. What are the list concatenation and list replication operators?

**Ans9**. ‘+’ is used to concatenate two list and ‘\*’ is used to replicate the list.

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

**Ans10**. append() method is used to add item at the end of the list while insert() method is used to add item at a specified index.

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

**Ans11**. list.remove() and llist.pop() are two methods used for removing the element from a list

12. Describe how list values and string values are identical.

**Ans12**. List values and string values are identical in many ways, for example we can iterate through list values as well as string values. We can access values through index in both list and string values.

13. What's the difference between tuples and lists?

**Ans13**. Lists are mutable but tuples are immutable, once the values are assigned, we cannot change them.

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

**Ans14**. To create a tuple that contains only single value we use ‘,’. ex: tuple = (42,)

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

**Ans15**. We can use tuple() to convert list into tuple and use list() to convert tuple value into list.

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

**Ans16**. They contain reference to the list objects in memory.

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

**Ans17**. copy.copy() creates shallow copy, the newly made copy is not independent from the original one while copy.deepcopy() creates a deep copy where the copied element is independent from the original one.