**Assignment-4**

Ques-1:What exactly is []?

Answer-1:[] denotes an empty list,a list that contains no elements.

Ques-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.)

Answer-2:We can make use of insert() method in order to put an element inside the list spam at third index.The insert method takes index as the first argument and the second parameter is the value of the element that we want to insert at the given index.The following code will put the element ‘hello’ at the third index.

spam=[2,4,6,8,10]

spam.insert(3,’hello’)

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

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

Answer-3:Since ‘3’ is a string,therefore,’3’ will create ‘33’ and when we apply int over it,it will convert it into an integer.Now dividing it by 11 will make it 3 and [int(3)] is [3].Hence the answer is [3],a list containing an element 3.

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

Answer-4:spam[-1] will bring the last element from spam,that is,’d’.

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

Answer-5:spam[0:2] will create a list of elements from 0th index to the index 1,that is,[‘a’,’b’]

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

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

Answer-6:Since the ‘cat’ is at index 1,therefore, bacon.index(‘cat’) will return value 1.

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

Answer-7:We have a list bacon=[3.14, 'cat,' 11, 'cat,' True].If we execute bacon.append(99),it will add 99 at the last of the list.The list will become bacon=[3.14, 'cat,' 11, 'cat,' True,99].

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

Answer-8:bacon.remove(‘cat’) will remove the element from the list bacon.The list will become bacon=[3.14, 11, 'cat,' True].

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

Answer-9:For list concatenation,we can use + and for list replication we can use \*.

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

Answer The only difference between append() and insert is that the method insert() will insert the element at the given index while the method append will insert the element at last.

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

Answer-11:For removing an element we have pop() and remove() methods.The method pop() will remove the element for the given index while the method remove() will remove the given element.

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

Answer-12:lists and strings both maintain the order among its element.Also we can access each elemet through index values in lists as well as in strings.

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

Answer-13:lists are mutable while tuples are not.

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

Answer-14:We will write (42,)

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

Answer-15:List value’s tuple form can be obtained by using the function tuple() while tuple value’s list form can be obtained by using the function list().

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

Answer-16: Variables will contain references to list values rather than list values themselves.

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

Answer-17: A shallow copy creates a new object which stores the reference of the original elements.So, a shallow copy doesn't create a copy of nested objects, instead it just copies the reference of nested objects. This means, a copy process does not recurse or create copies of nested objects itself **while** a deep copy creates a new object and recursively adds the copies of nested objects present in the original elements.