1. **What exactly is []?**

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.)**

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

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)]?**

*int(int('3' \* 2) / 11) =int(33/11)=3 🡪spam[3] =’d’*

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

spam[-1]=’d’

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

spam[:2]=[ ‘a’, ’b’]

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

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

1

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

[3.14, 'cat,' 11, 'cat,' True, 99]

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

[3.14, 11, 'cat,' True, 99]

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

The ‘+’ operator is used for concatenation and the ‘\*’ operator is used for list replication.

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

insert() adds an element at a specific index, shifting the existing elements to the right.

append() adds an element to the end of a list.

List=[1,2,3]

List.append(4)

print(List) ---- [1,2,3,4]

List.insert(1,4)

print(List) ----[1,4,2,3]

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

pop() and remove() are the two methods used for removing items from a list.

The remove() method is used to remove the first occurrence of a specified element from a list.

The pop() method is used to remove an element from a list based on its index.

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

Both lists and strings supports indexing and slicing operations.

Both lists and strings are sequential collections of elements

Both lists and strings can be iterated over using loops for accessing each element at a time.

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

Tuples are immutable, which means their elements cannot be modified once the tuple is created whereas lists are mutable

Tuples are defined using parenthesis () whereas lists are defined using square brackets [].

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

**t=(42,)**

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

To covert a list into its tuple form we can use the function **tuple()** and to convert a tuple into list we can use **list()** function

l= [1, 2, 3, 4, 5]

t = tuple(l)

print(t) # Output: (1, 2, 3, 4, 5)

t = (1, 2, 3, 4, 5)

l = list(t)

print(l) # Output: [1, 2, 3, 4, 5]

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

Variables that "contain" list values in Python, contain a reference or a memory address that points to the location where the list is stored in the computer's memory.

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

copy.copy() function create reference to original object. If copied object is changed original object is also changed, whereas copy.deepcopy() function creates new object and it copies original object to new one.