1. What exactly is []?

[] is a list data structure, where no elements inside the brackets denote an empty list.

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.)

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.

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

8

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

10

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

[2,4]

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?

Append adds the value at the end of the list.

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

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

Remove deletes the mentioned value from the list.

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

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

The list concatenation operator in Python is the + operator.

The list replication operator in Python is the \* operator.

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

The append() method is used to add an element to the end of a list.

insert() method is used to add an element at a specific position in the list.

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

remove(): This method is used to remove the first occurrence of a specified value from the list.

Pop(): This method is used to remove an item at a specific index from the list and return the removed value.

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

The similarity between Lists and Strings in Python is that both are sequences.

Both can be accessed using indexing and slicing.

Both supports len() function.

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

Tuples are immutable, lists are mutable.

Tuples are defined using (), lists are defined using [].

Append(), insert(), remove() works in lists but not with tuples.

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

Tuple=(42,)

1. How do you get a list value's tuple form? How do you get a tuple value's list form?
2. List to tuple:

my\_list = [1, 2, 3, 4]

my\_tuple = tuple(my\_list)

print(my\_tuple)

# Output: (1, 2, 3, 4)

Tuple to list:

my\_tuple = (1, 2, 3, 4)

my\_list = list(my\_tuple)

print(my\_list)

# Output: [1, 2, 3, 4]

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

Variables that "contain" list values in Python do not actually store the list directly. Instead, they store a reference to the list object in memory. In other words, the variable contains the memory address where the list is stored.

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

copy.copy() :It creates a shallow copy of an object, meaning it duplicates the object and references it contains, but not the nested objects.

copy.deepcopy():It creates a deep copy of an object, recursively copying the object and all of its nested objects. This ensures that a completely independent copy is created.