1. What exactly is []?

**Answer:**

[] represents 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.)

**Answer:**

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)]?

**Answer:** ‘d’

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

**Answer:** ‘d’

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

**Answer:**

[‘a’,’b’]

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

**Answer:** with above syntax we are not able to define bacon variable with above list syntax, The correct one is [3.14, 'cat', 11, 'cat', True]. If this is the list then answer are

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

**Answer:**  1

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

**Answer:**

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

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

**Answer:** [3.14, 11, 'cat', True, 99]

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

**Answer:**

List Concatenation Operator (+)

List Replication Operator (\*)

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

**Answer:**

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

The 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?

**Answer:**  remove(),pop()

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

**Answer:**

List values and string values in Python share similarities as sequential data types with support for indexing, slicing, and iteration. However, a key difference lies in mutability: lists are mutable, allowing modifications to their elements, while strings are immutable, requiring the creation of new strings for modifications.

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

**Answer:**

Lists are mutable, defined with square brackets, and offer more built-in methods, while tuples are immutable, defined with parentheses, and are slightly more memory-efficient.

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

**Answer:**

Spam=(42,)

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

**Answer:** Type casting

List to tuple 🡪 tuple(list)

Tuple to list 🡪 list(tuple)

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

**Answer:**

Variables containing list values in Python store references to the list objects, not the lists themselves.

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

**Answer:**

copy.copy() creates a shallow copy, preserving references to nested objects, while copy.deepcopy() creates a deep copy, generating entirely new copies of nested