1. What exactly is []?

**Answer:**

**its 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.)

**Answer:**

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

**spam.insert(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)]?

**Answer:**

**spam=['a','b','c','d']**

**'d'**

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

**Answer:**

**spam=['a','b','c','d']**

**spam[-1]**

**'d'**

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

**Answer:**

**spam=['a','b','c','d']**

**spam[:2]**

**['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')?

**Answer:**

**bacon=[3.14,'cat',11,'cat',True]**

**bacon.index('cat')**

**1**

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

**Answer:**

**bacon=[3.14,'cat',11,'cat',True]**

**bacon.append(99)**

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

**value 99 will be added to end of the list**

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

**Answer:**

**bacon=[3.14,'cat',11,'cat',True]**

**bacon.remove('cat')**

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

**remove first occurance of 'cat' from the list**

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

**Answer:**

**list concatenate operator**

**'+'**

**list replication operator**

**'\*'**

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

**Answer:**

**list append() always adds new item to end of the list**

**list insert() adds new item at the given index**

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

**Answer:**

**remove**

**del**

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

**Answer:**

**both list and string can be indexed to get the values and sliced to get specific values.**

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

**Answer:**

**tuples are immutable which means items cann't be added/changed. it has fixed size.**

**lists are mutable which means new items can be added. it has variable size.**

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

**Answer:**

**a=(42,'a','b')**

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

**Answer:**

**By using tuple casting, list values represented in tuple**

**a=[1,2,3,4]**

**a=tuple(a)**

**print(a)**

**By using list casting, tuple values represented in list**

**a=(1,2,3,4)**

**a=list(a)**

**print(a)**

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

**Answer:**

**list contains different data type values**

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

**Answer:**

**copy.deepcopy() -> will create a copy of a current variable and that will be independent of the original variable**

**changing the original variable values will not impact the new variable. both varibale are entirely different**

**copy.copy() -> this is a shallow copy, that shares the variable values for both the variables. any changes in original values will change the values in new variable provided only to the copied values. However, adding new values to original variable will not copied to new variable and vice versa.**