**Python Basics Assignment-04**

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

**Answer:** [] is 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')

print(spam)

[2, 4, 'hello', 6, 8, 10] #updated list

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:** ‘d’

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

**Answer:** ‘d’

**5. 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.

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

**Answer:** 1

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

**Answer:**

bacon.append(99)

print(bacon)

[3.14, 'cat', 11, 'cat', True, 99] #updated list

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

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

bacon.remove(item) #Remove the item which appears first.

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

**Answer:** **+** or **+=** is used to concatenate and **\*** or **\*=** is used to replicate.

e.g. concatenation:

a=[1,3,5]

b=[2,4,6]

a += b

print(a)

#a= [1, 3, 5, 2, 4, 6]

a=[1,3,5]

b=[2,4,6]

a \*= 3

print(a)

#a= [1, 3, 5, 1, 3, 5, 1, 3, 5]

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

**Answer:** append() method is used to adds an item to the end of a list, whereas . insert() inserts an item in a specified position in the list.

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

**Answer:** If bacon is the given list then, bacon.remove() and bacon.pop() are the two methods for removing the items from a list.

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

**Answer:** Both strings and lists have lengths: a string's length is the number of characters in the string; a list's length is the number of items in the list. Each character in a string as well as each item in a list has a position, also called an index.

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

**Answer:** Tuples are immutable while lists are mutable. So, the list can be changed but tuple cannot be changed.

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

**Answer:**

a = (42,)

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

**Answer:** If list\_1 is a list then tuple(list\_1) give the tuple of same values as in list\_1. Similarly, if tuple\_2 is a tuple then list(tuple\_2) give the list of same values as in tuple\_2.

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

**Answer:** Unable to understand this question.

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

**Answer:** In case of copy.copy() i.e shallow copy, the change is reflected to the original list. But in case of copy.deepcopy() i.e. deep copy, the change is not reflected to the original list.

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