

1. What exactly is []?

Sol :- These are empty square brackets used to create lists in python.

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.)

Sol :-

```
spam = [2,4,6,8,10]
spam[3] = 'hello'
print(spam)
```

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)]?

Sol :- d

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

Sol :- d

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

Sol :- ['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')?

Sol :- 1

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

Sol :- [3.14, 'cat', 11, 'cat', True, 99]

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

Sol :- [3.14, 11, 'cat', True]

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

Sol :- + is the list concatenation operator and * is the list replication operator.

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

Sol :- With `append()` method we can add anything at the end of the list. But with `insert()` method we can add the position in the list where we want to insert the item.

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

Sol :- `remove()` and `pop()`

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

Sol :- Lists are similar to strings, which are ordered collections of characters, except that the elements of a list can have any type and for any one list, the items can be of different types.

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

Sol :- Tuples are immutable and have fixed sizes whereas Lists are mutable and have variable sizes.

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

Sol :- `tuple_int = (42)`

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

Sol :- `data_tuple = ([1,2,3], ['S','P','Q'])` and `data_list = [(1,2,3), ('S','P','Q')]`

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

Sol :- Variables will contain references to list values rather than list values themselves.

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

Sol :- Deep copy stores copies of the object's value. Shallow Copy reflects changes made to the new/ copied object in the original object. Deep copy doesn't reflect changes made to the new/ copied object in the original object. Shallow Copy stores the copy of the original object and points the references to the objects.