

Assignment No: - 4

1. What exactly is []?

Ans: this shows the empty list value. It contains no items.

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.)

Ans:

```
1 spam = [2, 4, 6, 8, 10]
2 spam[2] = 'hello'
3 spam
```

```
[2, 4, 'hello', 8, 10]
```

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

```
1 spam = ['a', 'b', 'c', 'd']
2 spam[int(int('3' * 2) / 11)]
3
```

```
'd'
```

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

```
[3] 1 spam[-1]
```

```
'd'
```

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

```
1 spam[:2]
```

```
['a', 'b']
```

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

```
1 bacon = [3.14, 'cat', 11, 'cat', True]
2 bacon.index('cat')
```

```
1
```

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

```
✓ 0s 1 bacon.append(99)
      2 print(bacon)

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

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

```
✓ 0s [8] 1 bacon.remove('cat')

✓ 0s 1 bacon

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

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

```
1 # 9.What are the list concatenation and list replication operators?
2 l1 = [5,6]
3 l2 = [7,8]
4 # list concatenation
5 l1+l2

[5, 6, 7, 8]

1 # 9.What are the list concatenation and list replication operators?
2 #list replication: it replicate given list number of times
3 l1*3

[5, 6, 5, 6, 5, 6]
```

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

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

- `append()` Appends object to the end of the list
- `insert()` Insert object before index

```
1 bacon = [3.14, 'cat', 11, 'cat', True]
2 bacon.append(99) # append adds the item at the end of the list
3 bacon
```

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

+ Code

+ Text

```
[13] 1
      2 # solution by inserting value in 3rd index
      3 spam = [2, 4, 6, 8, 10]
      4 spam.insert(2, 'hello')
      5 spam
      6
```

```
[2, 4, 'hello', 6, 8, 10]
```

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

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

```
1 #remove(item) - removes first occurrence of an item
2 bacon = [3.14, 'cat', 11, 'cat', True]
3 bacon.remove('cat')
4 bacon
```

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

```
[15] 1 #pop() - Remove and returns item at index (default last).
      2 bacon = [3.14, 'cat', 11, 'cat', True]
      3 bacon.pop()
      4 bacon
```

```
[3.14, 'cat', 11, 'cat']
```

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

Ans :

- Both lists and strings can be passed to `len()`
- Have indexes and slices
- Can be used in for loops
- Can be concatenated or replicated
- Can be used with the `in` and `not in` operators

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

- * List: mutable - they can be modified by adding removing or changing the values. []
- * Tuple: Tuple are immutable. they cannot be changed. written using ()

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

```
1 # 14.How do you type a tuple value that only contains the integer 42?
2 a = (42,)
3 print(a)
```

(42,)

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

```
1 # 15.How do you get a list value's tuple form? How do you get a tuple value
2 #list to tuple
3 l1 = [5,6,7]
4 l = tuple(l1)
5 l
```

(5, 6, 7)

```
[22] 1 t1 = (5,6,7)
      2 t = list(t1)
      3 t
```

[5, 6, 7]

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

Ans. They contain references to list values

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

Ans . The copy.copy() function will do a shallow copy of a list,

The copy.deepcopy() function will do a deep copy of a list. only copy.deepcopy() will duplicate any lists inside the list