

ASSIGNMENT 4:

1. What exactly is []?

[] is empty list. We can define list with [].

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.)

```
spam[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)]?

```
spam[3] = 'd'
```

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

```
spam[-1] = 'd'
```

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

```
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')?

```
bacon.index('cat') = 1
```

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

After the append operation list will be looked like [3.14, 'cat', 11, 'cat', True, 99]

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

After the remove operation list will be looked like [3.14, 11, 'cat', True, 99]

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

List concatenation operator is used to combine 2 lists. “ + ” is list concatenation operator.

For example: [1,2,3] + [4,5,6] -> [1,2,3,4,5,6]

list replication operator is used to replicate list as many time we want. ‘ * ’ is list replication operator.

For example: [1,2,3] * 2 -> [1,2,3,1,2,3]

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

Append() method is used for append element at the end of the list.

Example: a= [1]

a.append(2) -> [1,2]

whereas insert() method is used for inserting element at specific place.

Example: a=[1,2,3,4]

a.insert(1,"helo") -> [1,'helo',2,3,4]

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

Remove() and pop().

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

Strings contains list of characters as values.

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

Tuples are immutable whereas lists are mutable. this is the main difference.

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

(42)

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

For transform list into tuple we can use `tuple()` typecasting.

For example: `a= ["b"]`

```
a = tuple(a) -> ("b")
```

For transform tuple into list we can use `list()` typecasting.

For example: `a= ("b")`

```
a = list(a) -> ["b"]
```

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

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

`copy.copy()` will make a shallow copy of list which means it will create new object and insert reference of original element.

Whereas `copy.deepcopy()` will create deep copy of list which means it will create new object and then recursively add element.