# Python Assignment 4

1. [] denotes an empty list. It indicates that there are no elements inside the list
2. spam[2] = ‘hello’
3. spam = [‘a’,’b’,’c’,’d’]

The value of spam[int(int(‘3’\* 2) / 11)] is ‘d’

1. Value of spam[-1] is ‘d’
2. Value of spam[:2] is [‘a’,’b’]
3. bacon = [3.14, ‘cat’, 11, ‘cat’, True]

Value of bacon.index(‘cat’) is 1

1. The list will look like [3.14, ‘cat’, 11, ‘cat’, True, 99]
2. The list will look like [3.14,11,’cat’,True,99] only first occurrence of cat will be removed.
3. List concatenation (+) - The operator allows us to concatenate or combine two or more lists into a single list. It joins elements in the order they appear.

List replication (\*) - This operator allows us to replicate or repeat the list by number of times. It creates new list that contains multiple copies of the original list.

1. append() adds the element at the end of the list whereas insert() inserts items at a specified index.
2. The methods are remove() and pop(). remove() helps to remove the very first element matching from the list. The pop() method removes elements from the list based on the index given.
3. The similarity between lists and strings in python is that both are sequences. They share some common operations like indexing and slicing.
4. The main difference between lists and tuples is that tuples are immutable whereas lists are mutable. Tuple cannot be changed once it is created.
5. my\_tup = (42,)
6. We can use the function tuple() which takes a list as an argument and returns a tuple containing the same elements.
7. Variables will contain references to list values rather than list values themselves. Python uses references whenever variables must store values of mutable data types.
8. copy.copy() returns a shallow copy of an element whereas copy.deepcopy() returns a deep copy of an element. The difference between shallow copy and deep copy is only relevant for compound objects(objects that contain other objects). A shallow copy constructs a new compound object and then inserts references into the objects found in the original. A deep copy constructs a new compound object and then recursively inserts copies into it of the objects found in the original.