**PYTHON BASIC ASSIGNMENT\_2 - SUBMITTED BY SAMUEL DEVDAS**

1. What exactly is []?

Ans. [] denotes a list in python syntax. Any number of elements separated by ‘,’(commas) can exist between the square brackets which together form a list. Eg. L=[45,’sdf’,34,True,6.89].

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. spam= [2, 4, 6, 8, 10]

spam.insert(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)]?

Ans. spam= [2, 4, 6, 8, 10,['a', 'b', 'c', 'd'] ]

spam[int(int('3'\*2)/11)]

Output: 8

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

Ans. ['a', 'b', 'c', 'd']

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

Ans.[2, 4]

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')?

Ans. 1

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

Ans.[3.14, 'cat', 11, 'cat', True, 99]

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

Ans. [3.14, 11, 'cat', True, 99]

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

Ans. List concatination:

spam= [2, 4, 6, 8, 10,['a', 'b', 'c', 'd'] ]

bacon=[3.14, 'cat', 11, 'cat', True]

spam+bacon

Output: [2, 4, 6, 8, 10,['a', 'b', 'c', 'd'], 3.14, 'cat', 11, 'cat', True]

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

Ans. Append() adds an object to the end of the list.

Insert() adds object before the particular index stated.

Eg. bacon.insert(index, object, /)

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

Ans. Remove method removes the first occurence of the stated value in the list. Eg. bacon.remove(value, /)

Pop method removes and returns item at stated index (default last). Eg. bacon.pop(index=-1, /)

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

Ans. Both String and list elements are stored in the memory at particular locations ie. Indexes from 0 to n, n=integers and can be accessed using various parsing or iteration operations.

Example: bacon=[3.14, 'cat', 11, 'cat', True]

string='string'

bacon[0: 3:1] >>> [3.14, 11, 'cat']

string='string'

string[0:4:1] >>> 'stri'

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

Ans. Tuples like strings, are immutable or unchangeable.

Eg. tuple=(3,4,5,7,10)

tuple[0]=7

TypeError: 'tuple' object does not support item assignment

Lists are mutable or changeable.

Eg. list=[423,45,254,66,98]

list[0]=7

print(list)

Output: [7, 45, 254, 66, 98]

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

Ans. Type the tuple vaulue with a trailing comma to contain only a single interger 42.

tuple=(42,)

type(tuple)

Output: tuple

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

Ans. By using the ‘tuple(list)’ and ‘list(tuple)’ functions respectively.

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

Ans. NOT CLEAR

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

Ans. A copy is sometimes needed so one can change one copy without changing the other.

copy.copy() returns a shallow copy of a list and deepcopy() returns a deep copy of the list.

In case of deep copy, a copy of object is copied in other object. It means that any changes made to a copy of object do not reflect in the original object.

In case of a shallow copy, any changes made to a copy of object do reflect in the original object.