**ASSIGNMENT – 1, PYTHON BASIC**

1. What is the difference between string and variable?

2. Describe three different data types.

3. After running the following code, what does the variable bacon contain?

bacon = 22

bacon + 1

4. What should the values of the following two terms be?

'spam' + 'spamspam'

'spam' \* 3

5. Why is ‘eggs’ a valid variable name while 100 is invalid?

6. Why does this expression cause an error? How can you fix it?

'I have eaten ' + 99 + ' burritos.'

7. Write code that prints Hello if 1 is stored in spam, prints Howdy if 2 is stored in spam, and prints Greetings! if anything else is stored in spam.

8. How can you tell the difference between break and continue?

9. In a for loop, what is the difference between range(10), range(0, 10), and range(0, 10, 1)?

10. Write a short program that prints the numbers 1 to 10 using a for loop. Then write an equivalent program that prints the numbers 1 to 10 using a while loop.

11. If you had a function named bacon() inside a module named spam, how would you call it after importing spam?

12. What is the data type of None?

13. What is the purpose of the try clause? What is the purpose of the except clause?

14. What exactly is []?

15. 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.)

16.Let's pretend the spam includes the list ['a', 'b', 'c', 'd'] for the next three queries.

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

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

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

17.Let's pretend bacon has the list [3.14, 'cat,' 11, 'cat,' True] for the next three questions.

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

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

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

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

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

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

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

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

23. What does an empty dictionary's code look like?

24. What is the most significant distinction between a dictionary and a list?

25. What happens if you try to access spam['foo'] if spam is {'bar': 100}?

26. What is a shortcut for the following code?

if 'color' not in spam:

spam['color'] = 'black'

Answers:

# Question 1: A string is a data type that stores words and is writien within double quotes, they can also be written within  
# single quotes but,  
# the single quotes help in printing the double quotes i a string if any present  
# A variable is a data type that is used for storing data they are by default in strings and can be changed by  
# specifying the data type that is required.  
  
#Question 3 : 23  
#Question 4: spamspamspam (ii) spamspamspam  
#Question 5 : variables are usually in string format whereas 100 is an int hence 'eggs' is a valid variable name  
#Question 6: 99 is not a string so can't be concatenated  
#Question 7:  
# spam = int(input("Enter your value: "))  
# if(spam == 1):  
# print("Hello")  
# elif(spam ==2):  
# print("Howdy")  
# else:  
# print("Greetings!")  
#Question 8: a break statement is used when we need to exit the loop for that iteration,  
# A continue statement is used when we need to skip the iteration for that particular value  
#Question 9: range(10) will print numbers from 0-9  
# range(0,10) will print 10 numbers starting from 0  
# range(0,10,1) will print numbers starting from 0 incrementing 1 as we go  
# Question 10:  
# for loop:  
# list = [x for x in range(1,11)]  
# print(list)  
#Question 11: from spam import bacon  
# spam.bacon()  
#Question 12: NoneType  
#Question 13: A try clause is used to suspect an error  
# an except clause is used to run the code provided the error occurs in a try clause  
#Question 14:[] is basically an empty list  
# Question 15:  
# spam = [ x for x in range(2,12,2)]  
# print(spam)  
# spam[2] = 'hello'  
# print(spam)  
#Question 16:  
# 1.'d' '3'\*2== 33, 33/11 == 3 spam[3] == 'd'  
# 2.'d'  
# 3.['a','b']  
# Question 17:  
# 1. 1  
# 2.[3.14,'cat', 11, 'cat', True, 99]  
# 3.[3.14, 11, 'cat', True, 99]  
#Question 18: append is used to add an element to the back of a list,  
# Insert is used to push an element wherever in the list, the value comes before the index  
# Question 19: list.remove(), list.pop()  
#Question 20: A tuple is a list whose entries cannot be changed, it is represented in round braces, no modifictions can be made  
# A list has data that can be changed , represented in []  
#Question 21:  
# my\_list = ['0', '1']  
# tup = list(my\_list)  
# print(tup)  
# tup = tuple(my\_list)  
# print(tup)  
#Question 22: in copy() the existing varriable is changed throughout the code  
# in deep.copy() a new vr with the same name is created to solve teh iteration using that value  
#Question 23: empty\_dict = {}  
#Question 24: a dictionary is a data type where values are present corresponding to keys  
# in lists no such keys are present  
#Question 25: KeyError occurs as 'foo' is not a key in spam  
#Question 26:  
# spam = {'color': 99, 'main\_course': 98}  
# if 'color' in spam:  
# spam['color'] = 'black'  
# print(spam)