ASSIGNMENT – 1

1. **In the below elements which of them are values or an expression? eg:- values can be integer or string and expressions will be mathematical operators.**

   * -- Expression

   'hello' -- Value

   -87.8 -- Value

   - -- Expression

   / -- Expression

   + -- Expression

   6 -- Value

2. **What is the difference between string and variable?**

   The String is a type of information which will be stored in Variable. Strings in python are surrounded by either single quotation marks, or double quotation marks. Assigning a string to a variable is done with the variable name followed by an equal sign and the string. You can assign a multiline string to a variable by using three quotes. Python are arrays of bytes representing unicode characters. Since strings are arrays, we can loop through the characters in a string, with a for loop.

   Variables are containers for storing data values. Python has no command for declaring a variable. A variable is created the moment you first assign a value to it. Variables do not need to be declared with any particular *type*, and can even change type after they have been set. If you want to specify the data type of a variable, this can be done with casting.

3. **Describe three different data types.**

   The three data types are

   1. Numeric type

      Python includes three numeric types to represent numbers: Integers, float, and complex number.
      Examples:
      Integers - 10,5,7,6,4,6
      Float - 1.4,6.7,4.8,10.66
      Complex - 3+2j, 5+6i, 2a+4

   2. Sequence type

      Python supports six different types of sequences. These are strings, lists, tuples.

Examples:

Strings - “abcd”, ”Bangalore”, ”hello”
Lists - [1, 3, 7, 4], [78, 6, 4.56, ”HI”, True, ”4+6j”]
Tuples - (1, ”Hyderabad”, 10.5, ”a”, True)

3. Mapping type

The mapping objects are used to map hash table values to arbitrary objects. In python there is mapping type called **dictionary**. It is mutable. The keys of the dictionary are arbitrary. As the value, we can use different kind of elements like lists, integers or any other mutable type objects.

Example:

myDict = {'ten' : 10, 'twenty' : 20, 'thirty' : 30, 'forty' : 40}

4. **What is an expression made up of? What do all expressions do?**

An expression is a construct made up of variables, operators, and method invocations, which are constructed according to the syntax of the language, that evaluates to a single value. ... As you can see from the other expressions, an expression can return other types of values as well, such as boolean or String .

5. **This assignment statements, like spam = 10. What is the difference between an expression and a statement?**

An “expression” is a combination of values and functions that are combined and interpreted by the compiler to create a new value, as opposed to a “statement” which is just a standalone unit of execution and doesn't return anything.

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

bacon = 22
bacon + 1

23

7. **What should the values of the following two terms be?**

'spam' + 'spamspam'
'spam' * 3

‘spamspamspam’
‘spamspamspam’

8. **Why is eggs a valid variable name while 100 is invalid?**

‘Eggs’ is a valid variable name because the first letter of the word is an alphabet. In python a variable name should always start with an alphabet(A…Z, a….z) or an underscore (_). If any variable is started other than these it will be considered as an invalid variable declaration. So, in the case of ‘100’ the first letter in an integer. So, it is an invalid declaration.

9. **What three functions can be used to get the integer, floating-point number, or string version of a value?**

The three functions can be used to get the integer, Floating-point number, or a String Version of a Value are –

1. int( )
2. float( )
3. str( )

10. **Why does this expression cause an error? How can you fix it?**
'I have eaten ' + 99 + ' burritos.'

The above given Expression is trying to cancatenate the strings. But, the expression have 99 which is an integer value. As it cannot be concatenated with a string it is showing the error.

We can fix the error by mentioning the integer value 99 as a form of string – “99”. Now, we can concatenate the strings without an error as follows –

'I have eaten ' + “99” + ' burritos.'