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**

Element	Type
*	Expression
'hello'	Value
-87.8	Value
-	Expression
/	Expression
+	Expression
6	Value

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

   A string is a series of characters that can be enclosed within single quotes or double quotes.
   A variable something which stores data in it. Values can be assigned to variables. These values can be of data type string, int, float etc.

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

   The three different data types are:
   A. Numeric data type: This represents the data which are numbers.
      int, float and complex numbers come under this data type
      Int - This consists of positive and negative values which are whole numbers and not decimals
      Ex: 2, -3, 0

Float - This consists of decimal values which are both positive and negative
Ex: 4.5, -9.0778
Complex - This consists of two parts. Real part and imaginary part
Ex: 4 + 8j

B. String data type: This data type consists of characters which are enclosed within single or double quotes. The characters can be numbers, letters or symbols
Ex: "My mail id is tkrij@67.com"

C. Boolean data type: This data type consists of two values - True and False.

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

Expressions are made of operators and values. The expressions take some values and perform operations on them using the operators and produce a new value.

We have different operators like arithmetic operators (+, -, *, /), logical operators(and,or) etc.

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

An expression is something that when evaluated returns some value.
Ex: 5 + 8, 7 < 5 etc

A statement performs some actions but does not return any value.
Ex: x = 4, color = "Red" etc

6. After running the following code, what does the variable bacon contain?
bacon = 22
bacon + 1

Variable bacon contains the value 22 only. The value of the variable does not change.

7. What should the values of the following two terms be?
'spam' + 'spamspam'

'spam' * 3

Both the expressions return the same value 'spamspamspam'

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

Variable name eggs starts with a letter hence it is valid whereas 100 starts with a number. Variable name should never start with a number.

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

Consider a value a. To convert it to
   I.   integer : int(a)
  II.   floating-point number : float(a)
 III.   string : str(a)

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

The above expression results in an error because addition is performed on different data types i.e String values are added with an integer value(99).

We can fix this by converting 99 to string value by using the function str(99)

The final expression will be 'I have eaten' + str(99) + 'burritos'