**Python Assignments- 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.

**Ans:**

\* - An Expression

'hello' - String

-87.8 - An Expression

- - An Expression

/ - An Expression

* - An Expression

6 - Integer

2. What is the difference between string and variable?

**Ans:** Variables are symbols that you can use to store data in a program. You can think of them as an empty box that you fill with some data or value. Strings are data, so we can use them to fill up a variable.

A Variable is a store of information, and a String is a type of information you would store in a Variable. A String is usually words, enclosed with "" Eg String x ="Welcome to SoloLearn" X is the Variable, and we declared it as a String, use the single = to assign the text to it.

3. Describe three different data types.

**Ans:** There are different types of data types in Python. Some built-in Python data types are:

* Numeric data types: int, float, complex
* String data types: str
* Sequence types: list, tuple, range
* Binary types: bytes, bytearray, memoryview
* Mapping data type: dict
* Boolean type: bool
* Set data types: set, frozenset

### [i) Python Numeric Data Type](https://www.digitalocean.com/community/tutorials/python-data-types#1-python-numeric-data-type)

Python numeric data type is used to hold numeric values like;

* 1. int - holds signed integers of non-limited length.
  2. long- holds long integers(exists in Python 2.x, deprecated in Python 3.x).
  3. float- holds floating precision numbers and it’s accurate up to 15 decimal places.
  4. complex- holds complex numbers.

### [ii) Python String Data Type](https://www.digitalocean.com/community/tutorials/python-data-types#2-python-string-data-type)

The string is a sequence of characters. Python supports Unicode characters. Generally, strings are represented by either single or double-quotes.

### [iii) Python List Data Type](https://www.digitalocean.com/community/tutorials/python-data-types#3-python-list-data-type)

The list is a versatile data type exclusive in Python. In a sense, it is the same as the array in C/C++. But the interesting thing about the list in Python is it can simultaneously hold different types of data. Formally list is an ordered sequence of some data written using square brackets([]) and commas(,).

### [iv) Python Tuple](https://www.digitalocean.com/community/tutorials/python-data-types#4-python-tuple)

The tuple is another data type which is a sequence of data similar to a list. But it is immutable. That means data in a tuple is write-protected. Data in a tuple is written using parenthesis and commas.

### [v) Python Dictionary](https://www.digitalocean.com/community/tutorials/python-data-types#5-python-dictionary)

[Python Dictionary](https://www.digitalocean.com/community/tutorials/python-dictionary) is an unordered sequence of data of key-value pair form. It is similar to the hash table type. Dictionaries are written within curly braces in the form key:value. It is very useful to retrieve data in an optimized way among a large amount of data.

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

**Ans:** A combination of operands and operators is called an expression. The expression in Python produces some value or result after being interpreted by the Python interpreter. An expression in Python is a combination of operators and operands. An example of expression can be : x = x + 1 0 x = x + 10 x=x+10. In this expression, the first 1 0 10 10 is added to the variable x.

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

**Ans:**

| **Statement in Python** | **Expression in Python** |
| --- | --- |
| A statement in Python is used for creating variables or for displaying values. | The expression in Python produces some value or result after being interpreted by the Python interpreter. |
| A statement in Python is not evaluated for some results. | An expression in Python is evaluated for some results. |
| The execution of a statement changes the state of the variable. | The expression evaluation does not result in any state change. |
| A statement can be an expression. | An expression is not a statement. |
| Example : x=3. Output : 3 | Example: x=3+6. Output : 9 |

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

bacon = 22

bacon + 1

**Ans:** bacon = 22

bacon + 1

print(bacon)

##bacon will contain 22

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

'spam' + 'spamspam'

'spam' \* 3

**Ans:** print('spam'+'spamspam')

print('spam'\*3)

Output

spamspamspam

spamspamspam

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

**Ans:** According to rules in python: A variable name cannot start with a number, therefore 100 cannot be the variable name .

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

**Ans:** The int(), float(), and str() functions will evaluate to the integer, floating-point number, and string versions of the value passed to them.

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

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

**Ans:** The expression causes an error because 99 is an integer, and only strings can be concatenated to other strings with the + operator. The correct way is 'I have eaten ' + str(99) + ' burritos.'.