Assignment 1

By: Rishiraj Chowdhury

Date: 10.5.2022

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.

*

'hello'

-87.8

-

/

   +

6

Solution 1:

'hello', -87.8 and 6 are values or expressions whereas rest all are mathematical operators.

2. What is the difference between string and variable?

Solution 2:

A variable is where we store information which can be called anywhere in the program whereas a string is one of such type of information that can be stored in a variable. A string is usually words, sentences, numbers, symbols, etc. or a combination of all these enclosed between " " or ' '. We use the single = to assign a string into any variable.

3. Describe three different data types.

Solution 3:

Three different data types are:

1) Boolean: Data type with one of the two built-in values, True or False. Boolean objects that are equal to True are truth (true), and those equal to False are not true (false). Non-Boolean objects can also be evaluated in Boolean context and determined to be true or false.

2) Dictionary: It is an unordered collection of data values, that store data values like a map and holds key : value pair. Key-value is provided in the dictionary to make it more optimized. Each key-value pair in a Dictionary is separated by a colon :, whereas each key is separated by a 'comma'.

3) Numeric: This data type represent the data which has numeric value. Numeric value can be integer, floating number or even complex numbers. These values are defined as int, float and complex class in Python.

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

Solution 4:

An expression is a combination of operators and operands(the values that the operator acts on) which is interpreted to produce some other value. An expression is evaluated as per the precedence of its operators. So that if there is more than one operator in an expression, their precedence decides which operation will be performed first. We have many different types of expressions in Python. Expressions are used to perform calculations, operations, etc.

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

Solution 5:

An expression is always what evaluates to a value whereas a statement is what does or executes something. Evaluation of an expression will always produce or return a resulting value whereas execution of a statement may or may not produce or display a result value as it only does whatever the statement says.

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

bacon = 22

bacon + 1

Solution 6:

Variable bacon will contain 23.

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

'spam' + 'spamspam'

'spam' * 3

Solution 7:

The values of both these terms will be 'spamspamspam'. This is because for the first expression we are adding two strings which contains 'spam' one time and 'spamspam'. In the second expression we are multiplying the string 'spam' three times which will produce 'spamspamspam'.

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

Solution 8:

This is because of the naming convention that python uses according to which a variable name cannot start with a number.

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

Solution 9:

The three functions are int(), float() and str() respectively to get the integer, floating point number or the string version of a value.

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

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

Solution 10:

This above expression causes an error because we are trying to add integers with 2 strings which is invalid. To fix the above issue, we can either use the str() function around the integer or put the " " around the integer to make it a string.