Full Stack Data Science

Assignment -1

By

Dr. Sunkara Dhanunjaya

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.

**Answer:** There are 3 Values and 4 Expressions. They are

**Values:** 'hello',-87.8, 6.

**Expressions:** \*, -, /, +.

1. What is the difference between string and variable?

**Answer:** 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. Declaring strings as variables can make it easier for us to work with strings throughout our Python programs

1. Describe three different data types?

**Answer:**

### Numeric Data Type**:**

In Python, numeric data type represents the data that has a numeric value. The numeric value can be an integer, floating number, or even complex number. These values are defined as int, float, and complex classes in Python.

**Integers** – This data type is represented with the help of int class. It consists of positive or negative whole numbers (without fraction or decimal). In Python, there’s no limit to how long integer values are often.

**Float** – This type is represented by the float class. It is a true number with floating-point representation. It is specified by a decimal point. Optionally, the character e or E followed by a positive or negative integer could even be appended to specify scientific notation.

**Complex Numbers** – Complex numbers are represented by complex classes. It is specified as (real part) + (imaginary part)j, For example – 4+5j.

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

**Answer:** An expression is a combination of values, variables, operators, and calls to functions. Expressions need to be evaluated. If we ask Python to print an expression, the interpreter evaluates the expression and displays the result.

Ex: 4+3\*6-4\*7

1. This assignment statements, like spam = 10. What is the difference between an

expression and a statement?

**Answer:** An expression is a combination of values, variables, and operators. When we type an expression at the prompt, the interpreter evaluates it, which means that it finds the value of the expression.

**Ex:** 4+3\*6-4\*7is an example of a statement

A statement is a unit of code that has an effect, like creating a variable or displaying a value. When we type a statement, the interpreter executes it, which means that it does whatever the statement says. In general, statements don’t have values.

**Ex:** variable declaration and assignment are statements because they do not return a value

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

bacon = 22

bacon + 1

**Answer:** The answer is 23.

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

‘spam’+’spamspam’

‘spam’\* 3

**Answer:** Both expressions evaluate to the string **'spamspamspam'** Where as the first expression follows String Concatenation and the second expression follows String Multiplication

1. **spamspamspam**
2. **spamspamspam**
3. Why is eggs a valid variable name while 100 is invalid?

**Answer:** As per python, Variable names cannot begin with a number. The python rules for naming a variable are :-

1. Variable name must start with a letter or the underscore character.
2. Variable name cannot start with a number.
3. Variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, & \_ ).
4. Variable names are case-sensitive (name, DHANU and dhanu these are different variables).
5. The reserved words(keywords) cannot be used naming the variable.
6. What three functions can be used to get the integer, floating-point number, or string

version of a value?

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

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

‘I have eaten’ + 99 ‘burritos.’

**Answer:**

This cause of error is 99 because 99 is not a string, 99 must be typecasted to a string to fix this error. the correct way is:  
**Input:** 'I have eaten ' + str(99) + 'burritos.',

'Python Programming'+99+'is easy'  
**Output:** 'I have eaten 99 burritos.',

'Python Programming 99 is easy '