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.

\* 🡪 Mathematical operator

'hello' 🡪 Value

-87.8 🡪Value

- 🡪 Mathematical operator

/ 🡪 Mathematical operator

* 🡪 Mathematical operator

6 🡪Value

2. What is the difference between string and variable?

🡪 String – A string is a type of information, a sequence of characters.

Variable – A variable is a memory location to store values or information.

Example –

X = “Hello World”

Here X is a variable and “Hello World” is a string.

3. Describe three different data types.

🡪 Following are the data types explained-

1. Numbers – In python numeric values are stored as three different data types:

* Integers: Integers are whole numbers which are represented as complete digit without any decimal point in it. Ex- 2,33,100
* Float: Float numbers are numeric values which are represented in python with a decimal point. Ex- 2.0,3.3,100.0,9.6
* Complex numbers: Complex numbers are number with a real and imaginary part and are represented in python as combination of the two (same is explained in example). Ex- ‘23+5j’ here 23 is real part and 5 is imaginary part.

1. Strings—String is a data type which has a ordered sequence of characters. In python strings are represented between single quotes ( ‘ ‘ ) and double quotes( “ “ ). Ex- “HELLO WORLD”, “APLHA123” both are strings
2. Booleans—this data type is a logical value which is either True or False. Usually when a logical operator is used in an expression it returns the output as Boolean value.
3. What is an expression made up of? What do all expressions do?

🡪 An expression is a combination of values, variables and operators. Any value can be called as an expression; string is also an expression as it represents a value.

All expressions are evaluated in python and they either represent a value or gives output as a single value always!

Example –

* Expression : 2 + 2

Output: 4

‘2 + 2’ is an expression and its output is 4. Technically 4 is also an expression.

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

🡪 An expression is a combination of values, variables and operators. All expressions are evaluated in python and they either represent a value or gives output as a single value always! Ex- 3 \* 5, ‘hello’

A statement is an instruction that python interpreter can execute. Statement represents an action or command. Ex- print statement, if statement, assignment statement.

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

bacon = 22

bacon + 1

🡪 bacon = 23

bacon will hold 23 numerical value

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

'spam' + 'spamspam' 🡪 ‘spamspamspam’

'spam' \* 3 🡪 ‘spamspamspam’

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

🡪 A variable name cannot begin with a number, thus eggs is a valid variable name while 100 is invalid.

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

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

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

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

🡪 Above expression is trying to add two different data types, which is not possible so above expression will cause an error.

Same error can be removed as follows-

'I have eaten ' + str(99) + ' burritos.'