

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

Ans: Values: 'hello', -87.8, 6

Expression: *, -, /, +

2. What is the difference between string and variable?

Ans: Variable is the name of the location in memory.

If we write $m = 10$, that means we have stored 10 in a particular memory location and given the location name m . We can store any data type in the memory location i.e. integer, float, boolean, string, etc.

A string is anything written within a single/ double quote.

Ex: $m = \text{"suman"}$ is a string.

If I write $m = 9$ then 9 will be treated as an integer, whereas if we write $m = \text{"9"}$ then 9 will be treated as string.

3. Describe three different data types.

Ans:

Numeric datatype: Data with a numeric value is called numeric data type. A numeric data type can be an integer, float, complex number, etc.

Example of numeric data type: $m = 9$, $p = 9.56$, $q = 9+4j$ etc.

Sequence data type: sequence is the ordered collection of similar or different data types.

Example: String, List, tuples, etc.

String: $m = \text{"I am a student of INeuron"}$

List: m = [4, 4.5, 7+9j, "suman"]

Tuples: m = (1, 2, 3, 4, 5)

Boolean data type: Data with two values True and False

Example: 5 > 7 it is True, 5 == 7 it is False.

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

Ans: An expression is made up of operators and operands.

Example:

```
a = 10
```

```
b = 20
```

```
c = a+b
```

```
print(c)
```

In the above example, a and b are two operands, and + is the operator.

All expressions evaluate and produce some other value.

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

Expression always evaluates and produces a new value. Whereas a statement is used to create a variable or display a value.

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

```
bacon = 22
```

```
bacon + 1
```

Ans: bacon = 23

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

```
'spam' + 'spamspam'
```

```
'spam' * 3
```

Ans:

```
'spam' + 'spamspam' = spamspamspam
```

`'spam' * 3 = spamspamspam`

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

Ans: eggs is a valid variable name because the variable name can start with an alphabet.

100 is an invalid variable name because variable name in python cannot start with numeric value.

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

Ans: `int()` is used to specify integer literal.

`Float()` is used to specify float literal

`Str()` is used to specify a string literal.

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

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

`'I have eaten '` is a string.

`99` is an integer

`' burritos.'` Is a string

We cannot concatenate a string with an integer.

So correct expression should be

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