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: Values: 'hello' , -87.8 , 6

Expressions: \*, - , / , +

2. What is the difference between string and variable?

Answer:

|  |  |
| --- | --- |
| Strings | Variables |
| 1. Strings are nothing but a series of characters. 2. It will be placed inside the double or single quotes. i,e , “ abc“ or ‘ abc’ | a. Variables are nothing but an empty box in which we can assign or store the value/data. |
| Ex: “iNeuron is my first online education plafform” | Ex: a= “iNeuron is my first online education plafform”  I’m assigning the above string to the variable a. |

3. Describe three different data types.

Answer: Different data types are listed below:

* Numeric: int, float, complex
* Text: str
* Boolean: bool
* Sequence type: list and tuple
* Set
* Mapping: dict
* None Type

Int: It is a data type used for whole numbers. ex: 0,1,2,3,……..

Float: It is a data type used for numbers with a decimal point. ex: 3.15, 9.06, 00.13

Boolean: It is a data type representing logical values. ex: TRUE, FALSE

List: A list is used to store multiple items in a single variable. It allows duplicate values, it is mutable, changeable, and ordered. Square brackets [ ] are used to denote them.

Tuple: Tuple is used to store multiple items in a single variable. It allows duplicate values, it is immutable, unchangeable, and ordered. Parentheses ( ) are used to denote them.

Set: set is used to store multiple items in a single variable. It will not allow duplicate values. unordered, unchangeable. {“ “ } is used to denote them.

|  |  |
| --- | --- |
| Dupilcates | List, tuple and dict allow duplicate values.  Set does not allow duplicate values |
| Order/ unordered | List, tuple and dict is a collection which is order.  Set is a collection which is unordered. |
| Changeable/ unchangeable | Dict and List is changeable.  Set and Tuple is unchangeable. |
| Unindexed | Set is an unindexed |

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

Answer:

An Expression is a sequence or combination of [variables](https://codepict.com/python-variables/), [operators](https://codepict.com/python-operators-everything-you-need-to-know/) and [function](https://www.w3schools.com/python/python_functions.asp) calls that always produces or returns a result value.

**Example:** x = 5, y = 3, z = x + y

Expressions are representations of value. The evaluation of an expression produces a value, which is why expressions can appear on the right-hand side of assignment statements.

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

Answer:

An expression evaluates to a single value. A statement does not.

|  |  |
| --- | --- |
| Expression | Statement |
| 1.An Expression is a sequence or combination of [variables](https://codepict.com/python-variables/), [operators](https://codepict.com/python-operators-everything-you-need-to-know/) and [function](https://www.w3schools.com/python/python_functions.asp) calls that always produces or returns a result value. | 1. Any Instruction that a python interpreter can execute (carry out) is called a Statement. |
| 2. Every expression can’t be a statement. | 2. Every statement can be an expression. |
| Example: >>> a + 16 >>> 20 | Example: >>> x = 3 >>> print(x)  Output: 3 |

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

bacon = 22

bacon + 1

Answer: 23

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

'spam' + 'spamspam'

'spam' \* 3

Answer: 'spamspamspam'

‘spamspamspam’

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

Answer: Variable always starts with alphabetical letters, hence eggs is a valid variable.

Variable should not start with numerical values/numbers, hence 100 is invalid variable.

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

Answer:

Int()

float()

str()

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

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

Answer:

We cannot concatenate strings with integer.

To fix this issue convert integer to strings.

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