

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.

Answer:

* : It is a multiplication Operator . So, it is an Expression

'hello' : It is a string so it is value

-87.8 : It is an integer value

- : It is a Subtraction Operator. So, it is an Expression

/ : It is a Division operator. So, it is an Expression

+ : It is an Addition Operator. So, it is an Expression

6 : It is an Integer . So, it is a value

2. What is the difference between string and variable?

Answer: String is a data type which is used to store multiple characters. Whereas Variables are named memory locations where we use to store data in the program.

3. Describe three different data types.

Answer: The three different data types are:

1. **Numeric:** It consists of Integer, Float and Complex Numbers
 - 1) **Integer:** It consists of positive or negative whole numbers
 - 2) **Float:** It consists real number with floating point representation. It is specified by a decimal point.
 - 3) **Complex Numbers:** It is specified as (Real Part) + (Imaginary Part)
2. **Sequence:** It is the ordered collection of similar or different data types. It allows storing of multiple values in an organized and efficient fashion.
 - 1) **String:** A string is collection of one or more characters put in a single quote, double quote.
 - 2) **List Type:** It is the ordered collection of data. It is very flexible as the items in a list not necessary to be of same type.
 - 3) **Tuple:** It is also just like list is an ordered collection of objects. The only difference between the list and tuple is lists are mutable, but tuples are immutable.
3. **Dictionary Type:** A dictionary is an unordered collection of data values, used to store data values like a map, unlike other data types they hold only a single value as an element. A dictionary holds a key-value pair.

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

Answer: An expression is a combination of operators, constants and variables. Generally, expressions produce values with one or more operands and zero or more operators.

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

Answer: A statement in python is used for creating variables or for displaying values whereas expressions produce some value after being interpreted by the python Interpreter.

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

```
bacon = 22
```

```
bacon + 1
```

Answer: After running the code `bacon` contains value 22

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

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

```
'spam' * 3
```

Answer: The output of both the statements is same that is `spamspamspam`.

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

Answer: Name of the variable can be character or a string but not a digit or a number, so it is invalid.

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

Answer: The three functions used are

1) `int(value)` to get integer

2) `float(value)` to get floating-point number

3) `str(value)` to get string

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

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

Answer: We cannot add string with integer value to fix this error we should make 99 as string. That is `'I have eaten'+'99'+'burritos'`

