

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.

- * : expression (multiplication)
- 'hello' : value (string)
- -87.8 : value (float)
- - : expression (subtraction)
- / : expression (division)
- + : expression (addition)
- 6 : value (int)

2. What is the difference between string and variable?

Variable is a reserved memory to store the values which computer need for processing. Variables can be stored in different data types. One of these data types is string **-str**, which python uses to store text type data.

So, string is one of the data types that python can store as a variable.

3. Describe three different data types.

- Text type – str: to store text data. It is always written by using single ('xxx') or double quotes ("xxx")
- Numeric type – int: to store integer values. Examples: 1, 2, 15, 60
- Sequence type – list: to store mutable sequences. Square brackets are used store the data [a, b, c]. Stored data can be any other python data type.

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

- An expression is a combination of values, variables, operators, and calls to functions. Expressions need to be evaluated and return the result.

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

Expression	Statement
An expression evaluates to a value	A statement executes something
The evaluation of a statement does not change state	The execution of a statement changes state
Evaluation of an expression always produces or returns a result value.	Execution of a statement may or may not produces or displays a result value, it only does whatever the statement says.
Every expression can't be a statement.	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
```

- bacon variable value is going to 22, as we don't save the result of `bacon + 1`, to the variable bacon, it just returns the result of expression.

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

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

```
'spam' * 3
```

- `'spam' + 'spamspam'` returns `'spamspamspam'`
- `'spam' * 3` returns `'spamspamspam'`

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

- Because in python variable name can only start with letter or underscore, but it may contain numeric character. So `e100` can valid variable name.

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

- To get integer: `int()`
- To get floating-point number: `float()`
- To get string: `str()`

10. Why does this expression cause an error? How can you fix it? `'I have eaten ' + 99 + ' burritos.'`

Two options are available:

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