

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.

* : Expressions

'hello' : Values

-87.8 : Values

- : Expressions

/ : Expression

+ : Expression

6 : Expression

2. What is the difference between string and variable?

String: String is a primitive data type which is the sequence character. In program we define string in either single quote (") or double quote (") or triple quote (").

Variable: Variable is used to store the data, Data may be of different type as int, string, Boolean. And a variable can hold only single data at a time.

3. Describe three different data types.

Python have six standard data type:

- I. Numeric
- II. String
- III. List
- IV. Tuple
- V. Set
- VI. Dictionary

Numeric: Numeric data type represent the data which has a numeric value. These values are defined as int, float and complex classes.

String: The string is sequence of Unicode characters. String will be in single quote, double quote or triple quote.

List: List is mutable data type in which it may not or may consist different type of elements, separated by comma inside the square brackets [].

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

Expression : Expressions are combination of operators and operands. Ex $7+5-3*9 / 2$ is expression.

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

Expression : Expressions are combination of operators and operands. Ex $7+5-3*9 / 2$ is expression.

Statement : A statement is a unit of code that has an effect, like creating a variable or displaying a value. When we type a statement, the interpreter executes it, which means that it does whatever the statement says. In general, statements don't have values.

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

`bacon = 22`

`bacon + 1`

```
In [1]: bacon = 22
        bacon = bacon + 1
        print(bacon)
23
```

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

`'spam' + 'spamspam'`

```
In [2]: print('spam' + 'spamspam')
spamspamspam
```

`'spam' * 3`

```
In [3]: print('spam' * 3)
spamspamspam
```

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

`eggs` are a valid variable name since its follow the rule for declare the variable while `100` is invalid since its numeric. `100` is invalid but `name100` is valid variable name.

Before declaring a variable, we must follow the given rules.

- I. The first character of the variable can be an alphabet or (`_`) underscore.
- II. Special characters (`@`, `#`, `%`, `^`, `&`, `*`) should not be used in variable name.
- III. Variable names are case sensitive. For example - `EGGS` and `eggs` are two different variables.
- IV. Reserve words cannot be declared as variables.

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

Int(), float(), str() are function are used to get the respective version on values.

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

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

Error caused due to the type casted since 99 is int so we have to convert this to string.

```
In [4]: print('I have eaten ' + 99 + ' burritos.')

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TypeError                                 Traceback (most recent call last)
<ipython-input-4-008a44ca1b55> in <module>()
----> 1 print('I have eaten ' + 99 + ' burritos.')

TypeError: must be str, not int
```

```
In [5]: 'I have eaten ' + str(99) + ' burritos.'
Out[5]: 'I have eaten 99 burritos.'
```