

1. Find Values and Expressions

VALUES	EXPRESSIONS
'hello'	-
-87.8	*
6	+
	/

2. What is the difference between string and variable?

A variable is basically the name of the location in the primary memory of your computer. This can be chosen by you. A variable can store everything from strings to numbers. A string is the values inside the quotes assigned to a string.

String:

- > String are denoted as "" or ' ' in Python.
- > String are the sequence of character.

Example:

```
a = 'hello'
b = "world"
```

Variable:

- > Variable are the memory box that hold value.
- > We can access by calling its name called variable name.

Syntax:

```
variable_name = value
```

3. Data Types:

Set:

In Python, Set is an unordered collection of data type that is iterable, mutable and has no duplicate elements. The order of elements in a set is undefined though it may consist of various elements.

Example:

```
a = {1,2,3,4,5}
```

Dict:

Dictionary in Python is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only single value as an element, Dictionary holds key:value pair. Key-value is provided in the dictionary to make it more optimized. Each key-value pair in a Dictionary is separated by a colon :, whereas each key is separated by a 'comma'.

Example:

```
a = {"name" : "angappan", "class": "MCA", "university" : "Alagappa University",  
"age" : 21}
```

Boolean:

Data type with one of the two built-in values, True or False. Boolean objects that are equal to True are truthy (true), and those equal to False are falsy (false). But non-Boolean objects can be evaluated in Boolean context as well and determined to be true or false. It is denoted by the class bool.

Example:

```
a = True  
b = False
```

4. Expression:

An expression is a construct made up of variables, operators, and method invocations, which are constructed according to the syntax of the language, that evaluates to a single value.

Expressions are representations of value. They are different from statement in the fact that statements do something while expressions are representation of value. For example any string is also an expressions since it represents the value of the string as well.

Example:

```
a = 10  
b = 20  
a > b # False
```

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

In programming language terminology, an “expression” is a combination of values and functions that are combined and interpreted by the compiler to create a new value, as opposed to a “statement” which is just a standalone unit of execution and doesn't return anything.

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

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

Variable names cannot begin with a number. The expression causes an error because 99 is an integer, and only strings can be concatenated to other strings with the + operator.

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.'

Python never concatenate int with str. We need to convert it.

Answer1 : 'I have eaten ' + str(99) + ' burritos.'

Answer2 : 'I have eaten {} burritos.'.format(99)

Answer3 : f'I have eaten {99} burritos.'
