

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: In the mentioned problem “ *,/,+ “ are expressions and “ 'hello', 87.8, 6 ” are values.

2. What is the difference between string and variable?

Ans. A string is a sequence of characters enclosed in quotation marks i.e either in single quotes or double quotes. Basically string is a type of data, which consists of sequence of characters enclosed in quotations.

A variable, on the other hand, is a named storage location in a program that holds a value of any data type.

3. Describe three different Data Types ?

Ans: Three fundamental Data types in python are int, float, String.

1. **int data type:** An integer is a whole number without a decimal point.
2. **Boolean data type:** A boolean is a data type that can have one of two values: True or False.
3. **Char data type:** We can use string data type to hold the character values.

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

Ans: An expression is a combination of values, variables, operators, and calls to functions. Expressions need to be evaluated. If we ask Python to print an expression, the interpreter evaluates the expression and displays the result.

Eg; num = 23+34+56-6/3

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

Ans: An expression is a combination of values, variables, and operators. When we type an expression at the prompt, the interpreter evaluates it, which means that it finds the value of the expression.

eg: 4*5+20-40 is an example of a 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.

eg: variable declaration and assignment are statements because they do not return a value

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

```
bacon = 22  
bacon + 1
```

Ans: The variable bacon is set to 22. The expression `bacon + 1` does not reassign the value in bacon (that would be the case if the expression is like `bacon = bacon + 1` instead of `bacon + 1`)

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

```
'spam'+'spamspam'  
'spam'*3
```

Ans: Both expressions evaluate to the string `'spamspamspam'`. Whereas the first expression follows String Concatenation and the second expression follows String Multiplication.

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

Ans: As per python, Variable names cannot begin with a number otherwise it will throw the syntax error "cannot assign to literal". The python rules for naming a variable are as given below:-

1. Variable name must start with a letter or the underscore character.
2. Variable name cannot start with a number.
3. Variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, & _).
4. Variable names are case-sensitive (name, INEURON and ineuron are three different variables).
5. The reserved words (keywords) cannot be used naming the variable.

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

Ans: The `int()`, `float()`, and `str()` functions will evaluate to the integer, floating-point number, string version of the value passed to them.

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

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

Ans: This cause of error is 99. because 99 is not a string. 99 must be typecasted to a string to fix this error. the correct way is:

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

Output: `'I have eaten 99 burritos.'`

