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:

Operators: +, -, *, /

Values: 'hello', -87.8, 6

2. What is the difference between string and variable?

Answer: A Variable is a store of information, and a String is a type of information you would store in a Variable. A String is usually words, enclosed with **""(quotes).**

Eg.: String x ="Welcome to iNeuron"

X is the Variable, and we declared it as a String, use the single = to assign the text to it.

3. Describe three different data types.

Answer:

S.No.	Data Types	Examples	Explanation	Mutable/Immutable?
1	**Strings**	"Hello!", "23.34"	Text - anything between " " becomes string	Immutable
2	**Integers**	5364	Whole numbers	Immutable
3	**Floats**	3.1415	Decimal Numbers	Immutable

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

Answer: An expression is a combination of operators and operands that is interpreted to produce some other value. In any programming language, an expression is evaluated as per the precedence of its operators.

Note: An expression is a combination of values and operators. All expressions evaluate (that is, reduce) to a single value.

i.) Constant Expressions: These are the expressions that have constant values only. Eg.: x = 15 + 1.3 .

ii.) Arithmetic Expressions: An arithmetic expression is a combination of numeric values, operators, and sometimes parenthesis. The operators used in these expressions are arithmetic operators in Python: Addition (+), Subtraction (-), Multiplication (*), Division (/), Quotient (//), Remainder (%), Exponentiation (**).

iii.) Integral Expressions: These are the kind of expressions that produce only integer results after all computations and type conversions.

iv.) Floating Expressions: These are the kind of expressions which produce floating point numbers as result after all computations and type conversions.

v.) Relational Expressions: In these types of expressions, arithmetic expressions are written on both sides of relational operator (> , < , >= , <=). Those arithmetic expressions are evaluated first, and then compared as per relational operator and produce a Boolean output in the end. These expressions are also called Boolean expressions.

vi.) Logical Expressions: These are kinds of expressions that result in either True or False. It basically specifies one or more conditions. For example, (10 == 9) is a condition if 10 is equal to 9. As we know it is not correct, so it will return False.

vii.) Bitwise Expressions: These are the kind of expressions in which computations are performed at bit level.

viii.) Combinational Expressions: We can also use different types of expressions in a single expression, and that will be termed as combinational expressions.

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

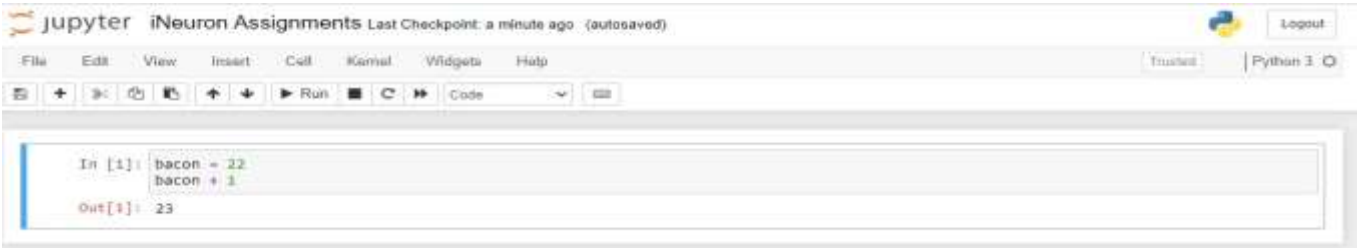
Answer: An expression evaluates to a single value. A statement does not.

Expression is made up of values, containers, and mathematical operators (operands) and the statement is just like a command that a python interpreter executes like print.

6. After running the following code, what does the variable bacon contain? bacon = 22

bacon + 1

Answer: Output : 23

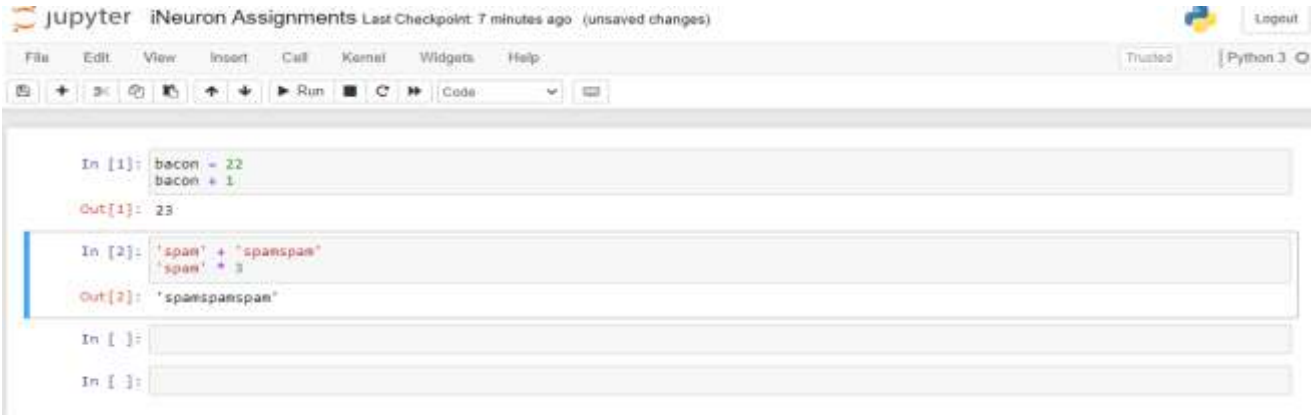


7. What should the values of the following two terms be?

'spam' + 'spamspam'

'spam' * 3

Answer: 'spamspamspam'



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

Answer: Variable names cannot begin with a number.

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

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

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

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

Answer: The expression causes an error because 99 is an integer, and only strings can be concatenated to other strings with the + operator. The correct way is I have eaten ' + str(99) + ' burritos.'.