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.

\* Operator

'hello' String

-87.8 Float

- Operator

/ Operator

* Operator

6 Integer

2. What is the difference between string and variable?

A string is a sequence of characters, while a variable is a name that refers to a value. In programming, variables are used to store data, and strings are one of the types of data that can be stored in a variable.

3. Describe three different data types.

String: A string is a sequence of characters. Strings are enclosed in double quotes, such as "Hello, world!". Strings can be used to store text, such as the name of a person or the title of a book.

Integer: An integer is a whole number. Integers can be positive, negative, or zero. Integers are enclosed in parentheses, such as (9) or (-9). Integers can be used to store numbers, such as the number of items in a list or the age of a person.

Float: A float is a number with a decimal point. Floats can be positive, negative, or zero. Floats are enclosed in parentheses, such as (09.0) or (-09.0). Floats can be used to store numbers, such as the price of a product or the weight of an object.

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

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. So that the value of the expression is calculated correctly.

Expressions are made up of the following:

* Operands: Operands are the values that are operated on by the operators. They can be numbers, variables, or expressions themselves.
* Operators: Operators are the symbols that perform the operations on the operands. They can be arithmetic operators, logical operators, or relational operators.
* Parentheses: Parentheses can be used to group expressions together and to change the order of evaluation.

All expressions do one thing: they evaluate to a value. This value can be used in other expressions, or it can be assigned to a variable.

Here are some examples of expressions:

* 7 + 1
* A \* B
* (A + B) \* C
* (A > B) and (B < C)
* "Hello, world!"

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

In programming, an expression is a combination of values, variables, operators, and functions that evaluates to a single value. A statement is a complete instruction that tells the computer to do something.

The assignment statement spam = 10 is an example of a statement. It tells the computer to assign the value 10 to the variable spam. The expression 10 is a value that is used in the assignment statement.

The main difference between an expression and a statement is that an expression always evaluates to a value, while a statement does not necessarily have to.

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

bacon = 22

bacon + 1

**Ans: 23**

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

'spam' + 'spamspam'

'spam' \* 3

spamspamspam

spamspamspam

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

In Python, variable names must start with a letter or an underscore, and can only contain letters, numbers, and underscores. 100 starts with a number, so it is not a valid variable name. eggs start with a letter, so it is a valid variable name.

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

int() : This function converts a value to an integer. For example, int("123") will return the integer 123.

float() : This function converts a value to a floating-point number. For example, float("123.45") will return the floating-point number 123.45.

str() : This function converts a value to a string. For example, str(123) will return the string "123".

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

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

The expression 'I have eaten ' + 99 + ' burritos.' causes an error because the + operator can only be used to concatenate strings. The value 99 is an integer, which is not a string. To fix the error, you can use the str() function to convert the integer 99 to a string. The following code will print the desired output: