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.

\* 🡪 Expression (mathematical operator)

'hello' 🡪 string (value)

-87.8 🡪 integer (value)

- 🡪 Expression (mathematical operator)

/ 🡪 Expression (mathematical operator)

* 🡪 Expression (mathematical operator)

6 🡪 integer (value)

2. What is the difference between string and variable?

String is a particular data type used to represent text, while a variable is a named storage location that can hold various types of data, including strings. Variables provide a way to store and manipulate data in a program, while strings are one of the possible data types that can be stored in variables.

3. Describe three different data types.

Integer: The integer data type represents whole numbers without any decimal places. It can be either positive or negative, including zero. For example, 5, -10, and 0 are integers. Integers are used to perform arithmetic operations like addition, subtraction, multiplication, and division.

Floating-Point (float): The floating-point data type represents numbers with decimal places. It is used to store real numbers, including both integers and fractions. For example, 3.14, -2.5, and 0.75 are floating-point numbers.

String : The string data type represents a sequence of characters. It is used to store and manipulate textual data, such as names, sentences, or any combination of letters, numbers, and symbols. Strings are typically enclosed in quotation marks to differentiate them from other data types. For example, "Revan". Strings provide various operations for concatenation, splitting, indexing, and manipulating text in programming languages.

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

Expressions are made up of values, variables, and operators. They denote calculations and produce results.

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

An expression is a combination of values, variables, operators, and function calls that can be evaluated to produce a value.

A statement is an instruction that performs a specific operation in a program.

Ex: if-else, loops

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

bacon = 22

bacon + 1

the variable bacon contain the value is 22.

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

'spam' + 'spamspam' 🡪 'spamspamspam'

'spam' \* 3 🡪 'spamspamspam'

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

Variable names have certain rules and conventions that determine their validity.

Valid variable names, must start with a letter (a-z, A-Z) or an underscore (\_). Should not be a reserved keyword in the programming language (e.g., if, for, while), as these have special meanings.

"eggs" is a valid variable name because it starts with a letter ('e') and is followed by letters only. Variable names cannot start with a digit.

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

The int() function can be used to convert a value to an integer.

The float() function converts a value to a floating-point number.

The str() function converts a value to a string. I

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

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

**TypeError**: can only concatenate str (not "int") to str

It can only concatenate strings not integers. To fix the above error we have to use type casting as to convert the integer to string.

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