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.

\* mathematical operators

'hello'- String

-87.8- Float

- mathematical operators

/ mathematical operators

+ mathematical operators

6 Integer

2. What is the difference between string and variable?

Lets take a example

Name= “Yash”

Here “Yash” is string which is data type

Where as Name is variable which store the values

3. Describe three different data types.

**Numeric Types:**

**int:** Integer values, e.g., 5, -10, 100.

**float:** Floating-point values with decimal points, e.g., 3.14, -0.5, 2.0.

**Boolean Type:**

**bool:** Represents either True or False.

**Sequence Types:**

str: Represents a sequence of characters, e.g., "Hello", "Python".

list: Ordered collection of items, e.g., [1, 2, 3], ["apple", "banana", "orange"].

tuple: Similar to a list but immutable (cannot be modified), e.g., (1, 2, 3), ("a", "b", "c").

**Mapping Type:**

dict: Collection of key-value pairs, e.g., {"name": "John", "age": 25}.

**Set Types:**

set: Unordered collection of unique elements, e.g., {1, 2, 3}, {"apple", "banana", "orange"}.

frozenset: Similar to a set but immutable, e.g., frozenset({1, 2, 3}).

**None Type:**

None: Represents the absence of a value or a null value.

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

An expression in programming is made up of one or more values, variables, operators, and function calls, combined in a way that produces a result. It represents a computation or evaluation that the programming language performs to obtain a final value.

All expressions have a purpose of producing a value. They can be as simple as a single value or variable, such as 5 or x, or they can be complex, involving multiple operations and function calls.

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

Expression is use to compute the value like 5+3 , 4//2 etc

Whereas statement used to control flow of program like assignment expression, def function etc.

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

bacon = 22

bacon + 1

bacon =23

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

'spam' + 'spamspam'

'spam' \* 3

A screenshot of a computer program

Description automatically generated with low confidence

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

As per python, Identifiers which also variable cannot start with integers

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

A screenshot of a computer program

Description automatically generated

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

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

It contains two data type, integer and string. In order to fix, 99 to convert to string as below

'I have eaten ' + ‘99’ + ' burritos.'

