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

'hello' = value

-87.8 = value

- = expression

/ = expression

+ = expression

6 = value

2. What is the difference between string and variable?

Ans:

|  |  |
| --- | --- |
| String | Variables |
| 1. It is a data type that represents a sequence of characters, words or even sentences. 2. Strings are written within double quote(“ “) or single quote(‘ ‘). | 1. In programming variables are used as a storage which holds a value. It is used to store integer, string , float, etc. 2. Variables are declared with a name . We can use that name further in our code. |

3. Describe three different data types.

Ans: Integer(Int): An integer is a data type which represents all the numbers(positive or negative) without any decimal points. Example: 1,-1, 0, -23, 56, 8, etc.

Float: It is a data type which represents numbers with decimals. Example: 2.5. 2.56,-8.9, etc.

String: It is a data type that represents a sequence of characters, words or even sentences. Example: “My name is Hardik”, “26091997”, etc.

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

Ans: Expressions are the mixture or combinations of operators, operands and symbols to perform mathematical operations or calculations in programming. Example: +, -, \*, /, =, etc.

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

Ans: Here “spam” is a variable which holds the integer value 10.

|  |  |
| --- | --- |
| Expression | Statement |
| Expressions are the mixture or combinations of operators, operands and symbols to perform mathematical operations or calculations in programming. Example: +, -, \*, /, =, etc. | In programming a statement is a line of code that performs a specific task.  Example: Conditional statement, control flow statement, etc. |

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

Ans: spamspamspam

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

Ans: Variable names cannot start with a number, therefore eggs is a valid variable while 100 is invalid.

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

Ans:

int(): This function converts a value to an integer data type.

Float(): This function converts a value to a floating-point number data type.

Str(): This function converts a value to a string data type.

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

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

Ans: We are trying to concatenate a string ('I have eaten ') with a number (99). To fix this we need to convert the number to a string then concatenate it.

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