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.

\*

'hello'

-87.8

-

/

6

Answer

Values are:

'hello', -87.8,6

Expression are:

\* ,-,/,+

2. What is the difference between string and variable?

Answer:

String:

A string is a data type in programming that is used to represent a sequence of characters. A string can contain letters, numbers, and symbols, and is usually enclosed in single quotes ('') or double quotes (""). For example, 'hello' and "world" are strings.

Variable:

A variable, on the other hand, is a named storage location in a computer's memory that can hold a value of a particular data type. A variable can be assigned a value, and this value can be changed throughout the program. For example, x and y are variables, and their values can be assigned and changed throughout the program.

3. Describe three different data types.

Answer:

In programming, there are many different data types that can be used to represent different kinds of information. Here are three common data types and a brief description of each:

Integer: An integer is a whole number that does not have a fractional component. Integers can be positive, negative, or zero. For example, 1, -5, and 0 are all integers. In most programming languages, integers have a limited range of values that they can represent.

String: A string is a sequence of characters that can include letters, numbers, and symbols. Strings are often used to represent text data in a program. They are typically enclosed in single quotes ('') or double quotes (""). For example, "hello" and 'world' are both strings.

Boolean: A boolean is a data type that can have one of two values: true or false. Booleans are often used in conditional statements, where a program needs to make a decision based on whether a condition is true or false. For example, if x > y is true, then a program might execute one block of code, but if it is false, it might execute a different block of code

Arrays (which can hold a collection of values of the same type), and objects (which can hold a collection of values and functions

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

Answer:

an expression is a combination of values, variables, operators, and function calls that can be evaluated to produce a result. Expressions can be as simple as a single value, such as "2" or "true", or they can be complex combinations of values and operators, such as "3 + 5 \* (7 - 2)".

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

Answer: The main difference between expressions and statements is that expressions always return a value, while statements do not. In other words, expressions are evaluated to produce a value, while statements are executed to perform an action or change the state of a program.

In the case of the assignment statement "spam = 10", the statement assigns the value 10 to the variable named "spam", but it does not return a value. However, the expression "len('hello')" evaluates to the value 5, which can be used in other parts of a program.

In summary, expressions are used to compute values, while statements are used to perform actions or control the flow of a program.

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

bacon = 22

bacon + 1

Answer:

Bacon contain 23 value

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

'spam' + 'spamspam'

'spam' \* 3

Answer:

The values of the following two terms would be:

'spam' + 'spamspam'

This expression concatenates two strings 'spam' and 'spamspam' to produce the resulting string 'spamspamspam'.

This expression multiplies the string '

spamspamspam

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

Answer:

In the case of "eggs", it is a valid variable name because it starts with a letter. However, "100" starts with a number, so it is an invalid variable name in Python.

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

Answer:

Int,float,str

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

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

Answer:

To fix the error, you can convert the number to a string using the str() function, like this:

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