Assignment 1

Solution 1.

Values -

‘hello’

-87.8

6

Expression -

*

-

/

+

Solution 2.

Variables are symbols that you can use to store data in a program and manipulate data during the execution of a program. They have a specific type, such as integer, floating-point, boolean, or string, which determines the kind of data they can hold.

A string, on the other hand, is a specific type of data that represents a sequence of characters. It is a collection of characters enclosed within quotation marks (either single or double). For example, "hello!" and 'hello!' are string literals. Strings are commonly used to represent textual data, such as names, sentences, or any other sequence of characters.

Ex - Name = "Pankaj"

In this case, the variable "Name" holds the string value "Pankaj".

Solution 3.

Three different data types are following:-

- Integer

It is the most common numeric data type used to store numbers without fractions.

Ex - -90 , -56 , 0 , 45 , 78

- Floating Point (float)

It is also a numeric data type used to store numbers with fractions

Ex - 69.90 , 56.78 , 0.78

- Boolean (bool)

It represents the values true and false.

Ex - 0 (false), 1 (true)

Solution 4.

Expressions are composed of values, variables, operators, and function calls. They represent computations or calculations and are evaluated to produce a result. Ex - 5 + 6 , sqrt(56)

All expressions are used to allow programmers to manipulate and combine data to perform various operations and make decisions in their programs.

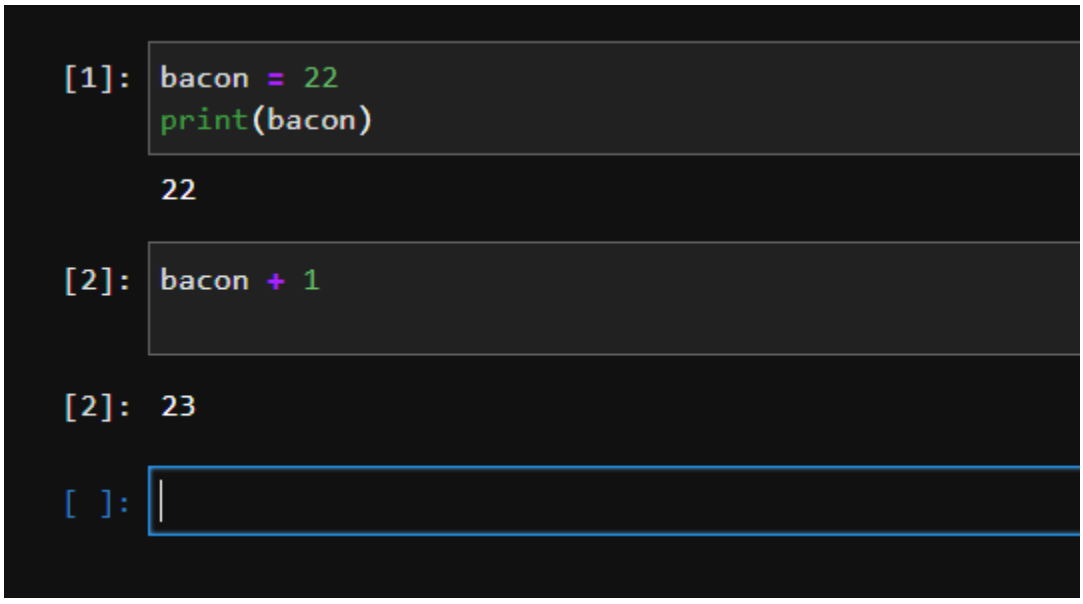
Solution 5.

In the case of the assignment statement “spam = 10 “

It is a statement because it performs the action of assigning the value 10 to the variable named ‘spam’.
It does not produce a value that can be further used in an expression.

Expressions are used to compute and produce values, while statements perform actions and control the flow of a program. Expressions can be embedded within statements to manipulate data and make decisions.

Solution 6.



Solution 7.

Solution 8.

In most programming languages, variable names need to follow certain rules and conventions.Variable names should start with a letter or underscore and consist of letters, digits, or underscores.

In this case, ***'eggs'*** contains only letters, making it a valid variable name.
On the other hand, '***100'*** consists solely of digits, which violates the rule.

Solution 9.

The three functions can be used to get the integer, floating-point number, or string version of a value as follows:-

```
[6]: a = 78.98
     int_a = int(a)
     print(int_a)

     78

[8]: b = 70
     float_b = float(b)
     print(float_b)

     70.0

[9]: c = 67
     string_c = str(c)
     print(string_c)

     67

[11]: type(string_c)

[11]: str

[ ]:
```

Solution 10.

The expression, ***'I have eaten ' + 99 + ' burritos.***' causes an error because it attempts to concatenate a string with integer using the ‘ +’ operator. In many programming languages, including Python, concatenation is only supported between strings. Mixing a string with a non-string value like an integer in this case leads to a type mismatch error.

As we can’t add the string ‘I have eaten’ with integer 99 using just + operator it will cause an error.

We can fix this issue by converting integer ‘99’ to a string type using str() function.