

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.

*

-

/

+

6

****Ans** - Values :- 'hello' , -87.8 , 6

Expression :- - , / , +

2. What is the difference between string and variable?

****Ans** - A Variable is a store of information, and a String is a type of information you would store in a Variable.

Variables are assigned using equal sign =

A String is usually words, enclosed with " "

Eg:- x = "lets learn python" . Here , x is the Variable, and we declared it as a String , using the equal sign =

3. Describe three different data types.

****Ans:-**

- Int = They are basically whole numbers. It can be positive or negative

Eg- x = 30

y = -25

- Float = They are whole numbers

Eg – x = 15.02

y = -12.0

- String = They are sequence of character data. Strings are written in " "

Eg- x="python"

Print(x)

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

****Ans:-** An expression is a combination of symbols, variables, and operators that represent a value. The elements of an expression mostly include:

Constants: They are Fixed values such as numbers (e.g., 9, 1.86) or strings ("Hello, World!").

Variables: Variables are Symbols that represent or changing values. Variables can hold different values during program execution.

Operators: Symbols that perform specific operations on the operands. For example, arithmetic operators like addition (+), subtraction (-), multiplication (*), division (/), and more.

Some examples of expressions are :- Arithmetic expression , Boolean Expression , Conditional expression , etc.

Expressions can be used in various contexts such as assignments, conditional statements, loops, and function arguments. Basically they allow us to perform calculations, manipulate data, make decisions, and control the flow of program.

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

****Ans:-** Expressions are evaluated to produce a value, while statements perform actions or control the flow of a program without producing a value.

In the above case '`spam=10`' . It is a statement because it assigns the value '10' to the variable 'spam'.

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

`bacon = 22`

`bacon + 1`

****Ans :-** After running the code, variable `bacon` contains the value 23. In first line 22 gets stored in variable `bacon` then + 1 is added to `bacon` . So the output is – `Bacon(22) + 1` i.e 23

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

`'spam' + 'spamspam'`

'spam' * 3

****Ans:-** 1st term – The o/p will be spamspamspam . As both the strings will get added.

2nd term - The o/p will be spamspamspam. As the word spam will get multiplied 3 times.

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

****Ans:-** Variable name should always start with a letter or underscore . It cannot start with a number . So eggs is a valid name and 100 is invalid.

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

****Ans:-** The three functions to do conversion are as follows:-

- Integer conversion – int()
Eg: x = 9.7
integer_value = int(x)
print(integer_value)
Output: 9
- Floating point Conversion – float()
Eg: x = 15
float_value = float(x)
print(float_value)
Output: 15.0
- String Conversion – str()
Eg:- x = 42
string_value = str(x)
print(string_value)
Output: "42"

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

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

****Ans:-** The error we get after running the expression is “ can only concatenate str(not int) to str” . It means the number 99 is int , and we can only concatenate strings. So we need to convert 99 into string by adding ‘ ’ .

The correct expression will be - **'I have eaten ' + '99' + ' burritos.'**

