

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

Ans:

\* is an expression

'hello' is a value

-87.8 is a value

- is an expression

/ is an expression

+ is an expression

6 is a value

2. What is the difference between string and variable?

Ans: A **string** is a datatype i.e., it implies that a value is mostly comprised of alphabets and Spaces(alphabets, sentences, words, spaces, symbols etc). On the other hand a **variable** can be understood as container (with a name) that holds values of a datatype like string, int, float etc,. A variable is a location in the memory that stores a value of certain datatype and that value can be called in the program using the name of its variable.

Example of a variable :  $a=10+20+33$

B='Hi! How are you today?'

Example of a string : 'A' , 'Apple' , 'A bad apple' , '4545631'

### 3. Describe three different data types.

**Ans:** Three different data types are as follows:

String: Usually referred to alphabets and text.  
Can take words and sentences as well.  
Special characters and spaces also are string data types.  
Should always be enclosed under quotes or quotes(" " or ' ').  
Even numbers enclosed under quotations are considered as string.  
Examples : 'A' , 'Apple', 'A bad apple', '4545631'

Integer: Usually referred to whole numbers.  
It can take positive as well as negative numbers.  
These are not enclosed under any quotations.  
Examples: 20 , -11,9999, 32, 0

Boolean: This datatype takes only either of two values **TRUE** or **FALSE**.  
Examples: TRUE, FALSE

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

**Ans:** Expressions are made of operators and operands. Expressions upon execution produce Some value as a result.

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

**Ans:** The difference between an statement and an expression is that expressions always produce certain value upon execution while an statements don't produce any value after execution.

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

**bacon = 22**

**bacon + 1**

**Ans:** After running the given code, the variable **bacon** contains **23** as a value since its incremented by 1.

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

**'spam' + 'spamspam'**

**'spam' \* 3**

**Ans:** The values of the **both** given terms should be the **same** :  
**Spamspamspam**

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

**Ans:** **eggs** is a valid variable name because it follows the naming convention of a variable and **100** is invalid as it doesn't follow that convention according to which, the name of any variable can't begin with a number or any special character but only small letter.

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

**Ans:** **int()**, **float()** or **str()** functions can be used to get the integer, floating-point number, or string version of a value.

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

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

**Ans:** The given expression causes error because here different datatypes are tried to concatenate. It can be fixed by converting everything to one datatype (99 from **int** to **str** datatype).

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

Or

**'I have eaten 99 burritos.'**