**T&T Assignment 1**

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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**

Values: 'hello', 6, -87.8

Expressions: /, +,\*,-

1. What is the difference between string and variable?

**Ans**

* String: A string is a sequence of characters, for representing text.
* Variable: A variable is a symbolic name representing a value. It’s a way for storing and managing data in a program.

3. Describe three different data types.

**Ans**

* Float: Represents floating-point numbers , e.g., 8.23, -9.34.
* String: Represents characters, e.g., ‘Hi', "Riya".
* Integer: Represents whole numbers, e.g., 2,5 ,10.

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

**Ans**

An expression is made up of operands and operators. Operators are symbols performing operations, and operands are the values that the operators acts upon. Expressions end up evaluating a value. All expressions perform some calculations giving a result.

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

**Ans**

The statement, like spam = 10, is used for assigning a value to a variable. An expression, is a combination of variables,values and operators which can be evaluated to a single value. The main difference is that an expression produces a value, while a statement performs an action.

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

bacon = 22

bacon + 1

**Ans**

After running the code bacon will have the value 22. As, bacon + 1 does not modify the variable itself. If we want to update bacon , we need to use an assignment statement like bacon = bacon + 1.

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

'spam' + 'spamspam'

'spam' \* 3

**Ans**

'spam' + 'spamspam' equals to 'spamspamspam'

'spam' \* 3 equals to 'spamspamspam'

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

**Ans**

eggs is a valid variable name because it starts with a letter and contains only letters. However, 100 is invalid as it starts with a number.

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

**Ans**

Three functions to get different versions of a value:

int(): Converts value to an integer.

str(): Converts value to a string.

float(): Converts value to a floating-point number.

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

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

**Ans**

'I have eaten ' + 99 + ' burritos.' will cause an error because we are trying to concatenate a string with an integer without converting the integer to a string. To fix this, we can use the str() function to convert the integer to a string.