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.

# \* - this is expression

# 'hello'- this is a value

# -87.8- this is a value

# - -this is expression

# / - this is expression

# + - this is expression

# 6 - this is a value

1. What is the difference between string and variable?

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

1. Describe three different data types.

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| --- | --- | --- |
| Data Types | Examples | Explanation |
| Integers | 5364 | Whole numbers |
| Floats | 3.1415 | Decimal Numbers |
| Booleans | True, False | Truth values that represent Yes/No |
| Lists | [1,2,3,4,5] | A collection of data, sits between [ ] |

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

# An expression is a combination of operators and operands that is interpreted to produce some other value. In any programming language, an expression is evaluated as per the precedence of its operators.

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

# An expression evaluates to a single value. A statement does not.

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

bacon = 22

bacon + 1

# The bacon variable is set to 22. The bacon + 1 expression does not reassign the value in bacon (that would need an assignment statement: bacon = bacon + 1)

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

'spam' + 'spamspam'

'spam' \* 3

# Both expressions evaluate to the string 'spamspamspam'

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

# Variable names cannot begin with a number. 100 is integer datatype which contains some value so it cannot be variable name.

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

# The int(), float(), and str() functions will evaluate to the integer, floating-point number, and string versions of the value passed to them

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

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

# The expression causes an error because 99 is an integer, and only strings can be concatenated to other strings with the + operator. The correct way is I have eaten ' + str(99) + ' burritos.'.