**Variables \*TEACHER NOTES\***

**DATA TYPES**

1. “Boolean Variables” bool – Stores either value of true or false
2. “Symbol” char – Typically a single octet(one byte). Stored as a numerical value.
3. “Whole Number” int – The most natural size of integer for the machine.
4. “Decimal (Type 1)” float – A single-precision floating point value.
5. “Decimal (Type 2)” double – A double-precision floating point value.
6. “Absence of type” void – THE ABSENCE of Value.

**Mr. Hudson’s RULES FOR VARIABLES NAMES:**

1. Variables must start out with a letter or underscore, they cannot start with a number.
2. Variables must be semi descriptive.
3. Variables can only include a single word with no spaces, but can include numbers, capital, lower case, and underscores.
4. All variables must be unique, this means you cannot have a char first\_letter and an int first\_letter, they must be different, even if the types are different.

**Variables are defined in 4 separate ways.**

1. Simply stating what data type the variable will be defined as, with the variable name following. This defines a variable with an initial value that is undetermined.
   1. int value;
2. State the variable, and then assign a value with the equals symbol.
   1. int value = 3;
3. State the variable and assign a value with the parentheses containing the value.
   1. int value(3);
4. State the variable and assign a value with the braces containing the value.
   1. int value{3}

**Operator : sizeof()**

this is an operator not a function, it is used to get information about the amount of memory allocated for data types & Objects. It can be used to get size of user defined data types too.

It can be applied with and without parentheses. However, in my class I want things done a certain way. To stay consistent, use parenthesis. Also use the first and second way for variable definitions.

**Left and Right side variable definitions:**

Assignment is something where we assign value from the right side of the single equals symbol to the variable on the left. Which means on the left must be a single variable, and it must be a variable.