CS Bridge Module 4 Data Types and Expressions Part 3: "char"

The "char" data type

- "char"s are used to represent characters, each char data represents a single character

Kind of Data: Characters

Inner Representation: Each "char" data uses 1 Byte (8 bits)

- Maps a number to a character data
- This mapping can convert to 256 different "char" representations
- This is seen via ASCII table

- If we have a char" a
- The ASCII table converts 'a' to $(97)_{10}$
- $(97)_{10}$ is then converted by its Binary Representation $(01100001)_2$

"char" Literals:

- We want our "char" data to be enclosed in single quotes ('a')
- 'a' would be the C++ Literal for a.
- '\n' represents a "New-Line" character. *Special Syntax*

Arithmetic Operators: "+", "-", " = "

- for instance, "char" ch1 = 'a' + 1;
  - This will give us the "char" value that comes "1" after 'a', which is 'b'
- But if we cout << 'a' + 1 << endl; We get "98" due to Compiller Cast of Implicit Cast

The "string" Class

- "string" is NOT a built in data type in C++

- In order to use string we need to extend our language with the "string" library
  - #include <string>

Kind of Data: Strings/Text

Inner Representation: Sequence of Characters

C++ Cstring Library) Literals:
- Double quotes: "This is a string"

Arithmetic Operators: "+", "="