- **Programming in C vs. C++**
    - C is a procedural programming language that mostly focuses on creating functions that are compiled in a top-down approach. On the other hand, C++ uses object-oriented programming so data can be split into objects and moved around more efficiently. This would make a program much faster and be able to handle larger programs.
    - In C, the data passed through functions is global and has the risk of being changed by accident which can cause problems when an argument is moving from one function to another. C++ allows encapsulation by declaring parameters as private, protected, or public. This allows data to be able to pass between functions without the chance of being altered unless the programmer wants it to.
    - Memory allocation and management are done manually in C while C++ allows for constructors, destructors, and smart pointers. This helps reduce memory leaks.
- **Basic input/output in C with printf & scanf:**
    - Both scanf printf statements can be used to display multiple variables through the utilization of different format specifiers such as %d and %c.
    - The issue with wrong format specifiers is that incorrect values can be printed out and the results might be unusual.
    - In terms of common pitfalls, it is important to note that %s doesn't check the size of a string that has been inputted, while %d stops at a non-digit, whereas %c doesn't skip white spaces which might lead to unintended line breaks or spaces
- **C structs**

- If you have a car dealership and want to organize your vehicles based on make, model, and year, you could assign each car to a struct. The car struct would have the subitems; string make, string model, and int year. An array of structs can be created with each struct storing the information of one of the cars on the lot.

- **Basic UNIX commands**
  - When using the ls-l command, information about the directory and everything in it is presented. It displays information such as file size, permissions, owners, etc. In essence, one can access the metadata of the contents of the directory