What is a Class?

This section will familiarize us with the basic building blocks of object-oriented programming: Classes.

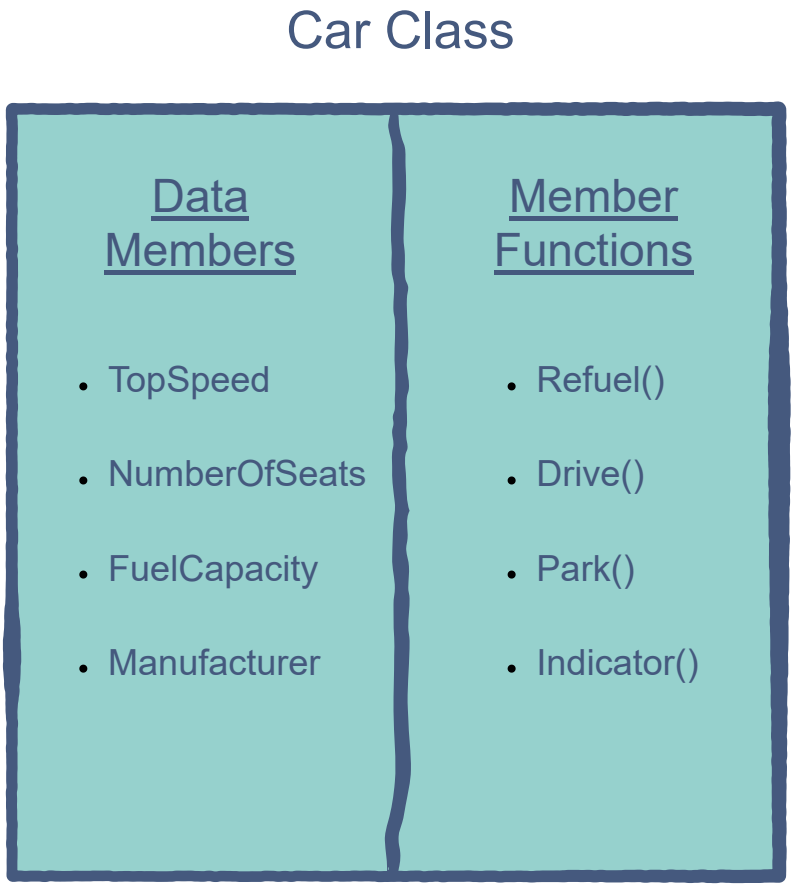
WE'LL COVER THE FOLLOWING

Custom Objects

In C++, we have several different data types like `int`, `string`, `bool` etc. An object can be created out of any of those types. An *object* is an instance of a class. Well, object-oriented programming wouldn't make sense if we couldn't make our own custom objects. This is where **classes** come into play.

Classes are used to create *user-defined data types.* The predefined data types in C++ are classes themselves. We can use these basic data types to create our own class. The cool part is that our class can contain multiple variables, pointers, and functions which would be available to us whenever a class object is created.

Let's start off with an example of a **car** class. Below, we can see the **attributes** that a car object would contain:



Car Class

We can see two types of attributes in the `Car` class above. In general, these two categories are present in all classes.

Data Members

These are also known as the member variables of a class. This is because they contain the information relevant to the object of the class. A car object would have a top speed, the number of seats it has, and so many other pieces of data that we could store in variables.

Member Functions

This category of attributes enables the class object to perform operations using the member variables. In the case of the car class, the `Refuel()` function would fill up the `FuelTank` property of the object.

Benefits of Using Classes

The concept of classes allows us to create complex objects and applications in

C++. This is why classes are the basic building blocks behind all of the OOP's principles.

Classes are also very useful in compartmentalizing the code of an application. Different components could become separate classes which would interact through interfaces. These ready-made components will also be available for use in future applications.

The use of classes makes it easier to maintain the different parts of an application since it is easier to make changes in classes (more on this later).

In the next lesson, we will start our journey into creating a class.