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06/07/24

# Miguel's Dealership

In my code, there are a total of 7 classes that each are responsible for keeping the dealership running and making the code run efficiently. There is a base class called *Car*, that can be considered the parent class for all of the following classes/cars, that will be used within the code. It serves as a model of the Japanese cars, as well as the American and Electric Cars. This class carries 3 attributes that all describe the car for the customer. These attributes include the car model, the year the car was manufactured, as well as the price the car is currently worth and selling from the dealership. This class has a constructor that initializes the cars model, year and price as well that was initialized by me. There are two methods inside of this class that all of the other classes derive from in order to present the car and what they are worth. The *display()* method was created specifically for the menus that the user is interacting with. This method is used for displaying the car brand and the year allowing for the customer to browse and pick a car based on brand and year before worrying about anything else. The following method, *displayDetails()* is a virtual method and is like a placeholder for displaying more in depth information and specifics about the car model that the dealership has. It is virtual because it is intended to be overridden by the derived classes. In general, this class encapsulates behaviors and the class attributes that are followed by all car models.

The inheritance factor of Object Oriented Programming is viewed with the following two classes, JapaneseCars, and AmericanCars. Both of these derive off of the Cars class that holds and passes the proper attributes needed for the dealership to work properly. Each one of these derived classes has their own set of three more classes that describe three different kinds of cars from either Japan or America. All of the cars in each of the derived classes all inherit the original attributes and methods from the original base class. Both of these classes also encapsulate specifics about the American and Japanese car brands that can later be accessed once you know what you are looking for.

The main test driver is very simple to understand as all of the tedious work is done behind the scenes and makes for our main function to be easily readable and user friendly. The program begins with a user-friendly interface for the user to explore different kinds of car models from either Japan, America, or an electric car if they are able to afford the luxury. The, *finalproject.cpp*, file brings in each of the header files to be used in this main function in order to begin execution. The classes are defined and set in these headers and are used to create objects in the main function which represent the different car models that the dealership has to offer. While both Japanese and American cars are gasoline fueled, there is also an option for electric friendly cars that the user is given the option to choose from as well. Depending on the users choice, they are then directed to choose from three of the cars available

In closing, this program runs very simply for the user but the work comes from the classes and header files that are aside from the main .cpp file. These components are what makes the program run perfectly and without issues and are easily used to edit or add new cars to the dealership when they arrive. This efficiency calls for easy access and updating of the code, and can later be updated to add more features if so.