Purpose

The purpose of this program is to load data from a file of car agencies into an array of agencies, print out the loaded data, print the number of each sensor type, locate and print out the data for the most expensive car, and allow the user to rent it, and exit.

Design

I use an “App” class to encapsulate the cli functionality. I hope to further refine this strategy to be more flexible in the future. The app has a private internal agency to store the data. The function members of the app class modify the private app state. The app state also contains two Booleans: whether the program has successfully loaded data and whether the program should exit. The member functions edit these variables to prevent other commands from running and to exit the program. Each cli menu entry is represented by a member function on the app class. This results in a small main function.

Problems/Changes

I feel like I can improve code organization by abstracting each cli entry into its own struct or class. I also used some global constants that were not allowed, yet I felt that they were necessary in this context.

I also had trouble with the extra credit points, as I couldn’t figure out a way to dynamically reinitialize an agency without the heap or UB in the form of an unsafe memory copy operation or casting a const ptr to a regular ptr.

Some parts of my code are prone to crashing on invalid input. Given more time, I would focus on better file loading techniques.