

Cot 3011 --- Project 7

Chapter 9 - Structs

Due: Friday April 15 before 5 PM. (Late submissions before 5 PM April 16)

Objective:

Write a C program that implements a list of Vehicles by **using an array of structs**.

Specification:

The following data should be stored for each Vehicle:

`vin, year, make, price, style, color`

You may assume a maximum length of 20 characters for make, style and color.

Vin (Vehicle ID number) should be integer and price should be double.

You may assume a maximum of 5 vehicles. (keep it small for testing purposes)

You **MUST** divide your program into two files: Vehicle.h and Vehicle.c

Vehicle.h should include the definitions for structs and function prototypes.

Vehicle.c should include all function implementations.

You might consider using an enumerated data type for the “Style” of the vehicle.

Use these values for “Style”: TWO_DOOR, FOUR_DOOR, CONVERTIBLE, SUV, TRUCK

Your program should be menu driven and offer the following options to the user:

- 1 – Add a Vehicle to the list
- 2 – Remove a Vehicle from the list
- 3 – Display one Vehicle
- 4 – Display all Vehicles
- 5 – Display all Vehicles in a specific price range
- 6 – Display all Vehicles of a specific style
- 7 – Terminate the program

If the list is full, do not add a new vehicle – display an error message.

Do not allow duplicate vin numbers.

If an operation is to be done on a specific vehicle and invalid information is supplied, display an error message. (ex. attempt to remove a vehicle that does not exist)

Locate a specific vehicle by vin number.

Notice, if you use a scanf to read string, the string cannot include white space.

Do NOT use magic numbers. Use #define or const.

For this project **you MUST use functions** for each of the menu operations (except terminate). For example, you must have a function that adds a vehicle, a function that removes a vehicle, etc. It is strongly encourage that you use additional functions where reasonable.

Remember: Arrays are passed by reference. Structs are passed by value. You can certainly use

pointers to structs.

Style/Format

Be sure to include appropriate documentation.

Be sure to format your code as discussed in class. For example, curly braces should line up and all blocks of code should be indented.

Project Submission:

Submit your project using the eLearning dropbox. Notice that there is a dropbox for late submissions.

For this project simply submit the file containing your source code (.c).