CS306 – Introduction to Perl
Fall 2005
Homework Assignment #5
Due: November 21st, 2005 (start of class)

The homework should be submitted in the form of a zip file which contains one program for each question. Your zip file should be named *firstname-lastname*-hw5.zip and should contain a file hw5q1.pl. Email this zip file to cs306@cis.uab.edu.

(20 pts) Acme Motors, a major car manufacturer, has asked you to write a program to help them analyze the vehicles they make, to help them identify gaps in their product line. Write a program to display and update their inventory.

Use a multi-level hash/hashref data structure to represent the makes, models and trim levels of the vehicles that they manufacture. Create a data structure modeled on the following hierarchy: Company --> Brands --> Models --> Trim Levels --> Details about each distinct vehicle. Some of the details will be arrays (such as the available colors of a particular car).

This information will be provided to you in an input text file. The format of this file will be as follows:

```
brand,model,trimlvl,MSRP,colors,horsepower,numdoors,passengers,cargo,length,weight,mpg
```

Write a routine to read in this file and create the data structure discussed above. Once the data is loaded into memory, present the user with a menu which will have the following options:

Add a new vehicle – This feature will then ask the user for each piece of information that we store for each vehicle.
Remove vehicle – This will require the user to enter the brand/model/trimlvl combo for the car to be removed
List vehicles by brand – Display of vehicles, sorted by brand first, then model, then trimlevel
List vehicles by price – Lowest-priced cars first
List vehicles by mpg – Most fuel-efficient cars first

Finally, write a routine to save the modified data back to disk. It does not have to be in the format that the data was originally provided, but it can be. Alternately, you might remember that Data::Dumper's output is also valid perl...

Remember to use strict and to avoid global variables. There will be plenty of opportunity for you to use functions to make your code modular, so please do. Thorough commenting is expected. Please make all data case-insensitive, so that "Spirit" is considered the same as "spirit" when building and traversing data structures.