Scientific Visualization and Virtual Reality – Exercise 1

DEADLINE: SUBMIT YOUR SOLUTION BEFORE MONDAY, NOVEMBER 3RD, 18:00.

About this exercise

1. Work in pairs.
2. Submit one report per pair.
3. In your report, clearly state both your names and student numbers.

Introduction

You are given a dataset in comma-separated value (CSV) format with 392 rows. Each row represents a car with the following data items:

Column	Description	Type	Detail
model	Model name	String	
MPG	Miles per gallon	Num	
cylinders	Number of cylinders	Num	3 = 3 cylinders 4 = 4 cylinders 5 = 5 cylinders 6 = 6 cylinders 8 = 8 cylinders
horsepower	Horsepower	Num	
weight	Vehicle weight (lbs.)	Num	
year	Model year (modulo 100)	Num	0 (Missing) 70 = 1970 71 = 1971 … 82 = 1982
origin	Country of origin	String	US = American Europe = European Japan = Japanese

Assignment

Create a visualization that encodes as many of the seven dimensions in this dataset as possible. Make the perceptually appropriate choices. Use the following steps:

1. For each column, determine whether the data represents quantitative, ordinal or nominal data.
2. Review Bertin's visual attributes and assign the perceptually appropriate choices to each column.

3. Create a visualization that encodes as many of the seven dimensions as you can. Don't worry if you can't do all of them, but do try to do so!

You may use any tool or software you want. Use what you are most comfortable with, as long as the produced visualization is your own work.

Hand in (via Blackboard) a short report (max 2 pages) that shows your visualization and explains the decisions you made in the three-step process mentioned above. Discuss the effectiveness of your visualization.