

GFA - Data Visualization Exercise

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Introduction

Let's take a look at the MPG dataset. This dataset contains a subset of the fuel economy data that the EPA makes available on <http://fuelconomy.gov>. It contains only models which had a new release every year between 1999 and 2008 - this was used as a proxy for the popularity of the car.

Data

To access the data, please click the option that works for you below:

- Microsoft Excel (download the spreadsheet)
- Google Sheets (copy the sheet to your own drive)

Questions to Answer

1. Research:
 - Explore the data to see what's in there
 - What is the range, median, and mean for displacement (**displ**), year, # of engine cylinders (**cyl**), city mpg (**cty**), and highway mpg (**hwy**)?
2. Research:
 - Pick a car manufacturer
 - How many models does they have that have been around from 1999 - 2008?
 - Does one model have better or worse gas mileage than the others?

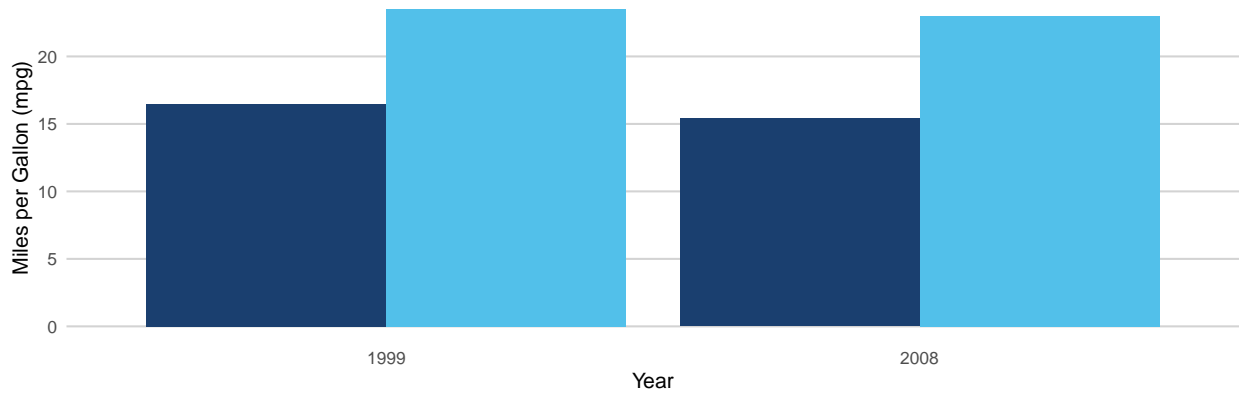
Example: - Pick a car manufacturer: *ford* - How many models does they have? *4* - Does one model have better or worse gas mileage than the others? *The mustang, which is the only car here, has slightly better gas mileage than the trucks/suvs.*

3. Plot:
 - Bar Chart (2 variables):
 - Using the model that has been running the longest, make a bar chart that shows both the **cty** and **hwy** mpg over time
 - Does that model have multiple **cyl** options? If so, plot those in separate panels (aka facets)
 - Does that model [also] have multiple transmissions (**trans**), plot those in separate panels (facets)

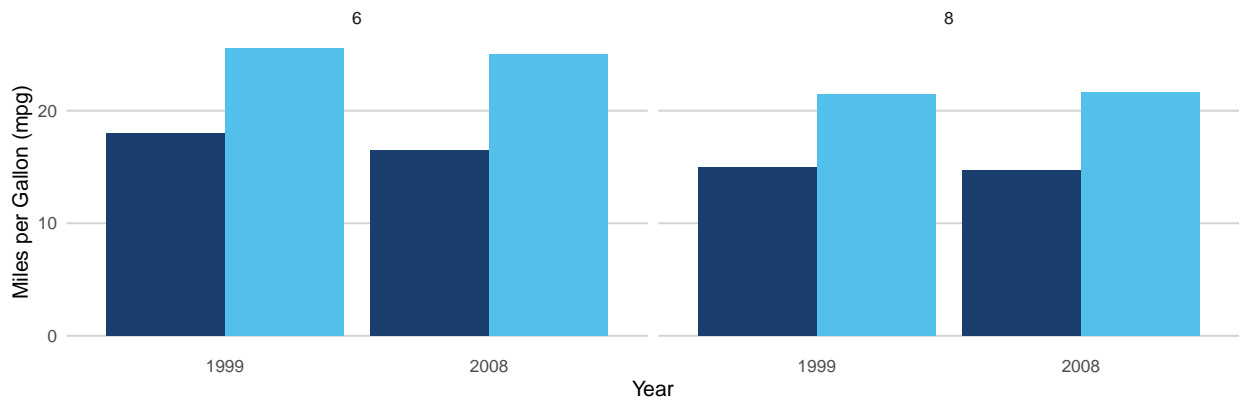
manufacturer	model	displ	year	cyl	trans	drv	cty	hwy	fl	class
audi	a4	1.8	1999	4	auto(l5)	f	18	29	p	compact
audi	a4	1.8	1999	4	manual(m5)	f	21	29	p	compact
audi	a4	2.0	2008	4	manual(m6)	f	20	31	p	compact
audi	a4	2.0	2008	4	auto(av)	f	21	30	p	compact
audi	a4	2.8	1999	6	auto(l5)	f	16	26	p	compact
audi	a4	2.8	1999	6	manual(m5)	f	18	26	p	compact

Example:

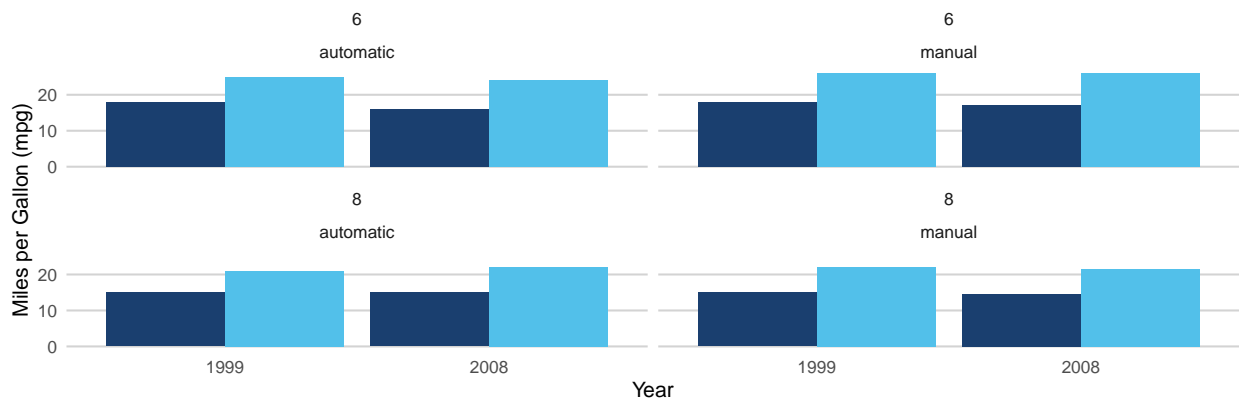
Ford Mustang – City vs. Highway MPG
1999 vs. 2008



Ford Mustang – City vs. Highway MPG
1999 vs. 2008



Ford Mustang – City vs. Highway MPG
1999 vs. 2008



4. Review:

- Does anything stick out in your bar charts?
- If so, can you find an explanation for those things?