

Homework2.3

Yuanyuan Lin

2019/9/19

Class assignment:

Using the MPG dataset, which is available with the ggplot2 library, produce a document that includes the following elements: headers, text, tables, and plots.

Tables should include a comparison of city and highway mileage by the class of car and the best three car models for city and highway mileage for all the years in which data is available.

Plot the data displaying as much of the data as you can. Put continuous variables on the axes and include a locally smoothed regression line to show the relationship with mileage. Also make a box plot comparing city and highway MPG by class of car.

Tables

Comparison of city and highway mileage by the class of car

Best three car models for city and highway mileage for all the years

```
##      class      cty_mean hwy_mean
## [1,] "compact"  "20.13"  "28.3"
## [2,] "midsize"  "18.76"  "27.29"
## [3,] "suv"      "13.5"   "18.13"
## [4,] "2seater"  "15.4"   "24.8"
## [5,] "minivan"  "15.82"  "22.36"
## [6,] "pickup"   "13"     "16.88"
## [7,] "subcompact" "20.37"  "28.14"
```

```
##      Model      Milage  Model      Milage  Model      Milage  Model
## [1,] "new beetle" "26"    "new beetle" "35"    "corolla" "27"    "corolla"
## [2,] "civic"      "24.8"  "corolla"    "32.67" "civic"   "24"    "civic"
## [3,] "corolla"    "24.67" "civic"      "31.6"  "gti"     "21.5"  "camry"
##      Milage
## [1,] "36"
## [2,] "33.75"
## [3,] "30"
```

PLots

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```

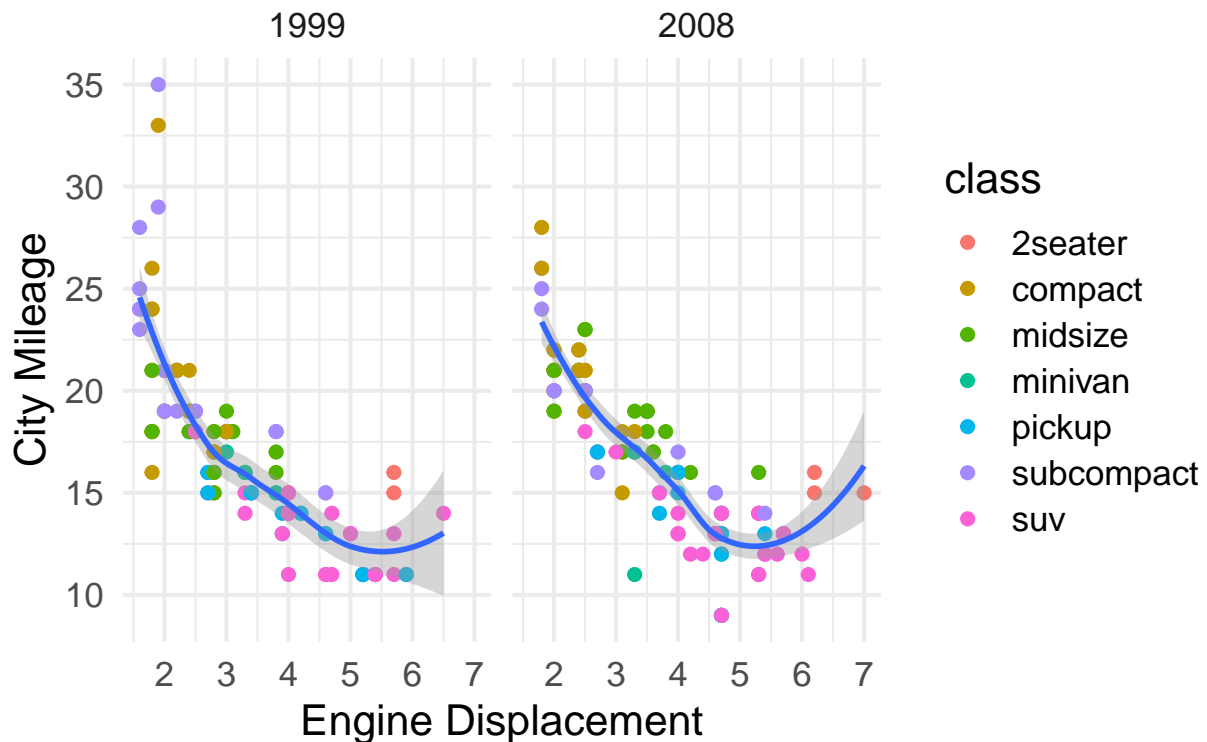
Table 1: Mean City and Highway MPG by Car Class

Class	City	Highway
compact	20.13	28.3
midsize	18.76	27.29
suv	13.5	18.13
2seater	15.4	24.8
minivan	15.82	22.36
pickup	13	16.88
subcompact	20.37	28.14

Table 2: Top 3 MPG Performing Cars: 1999, 2008

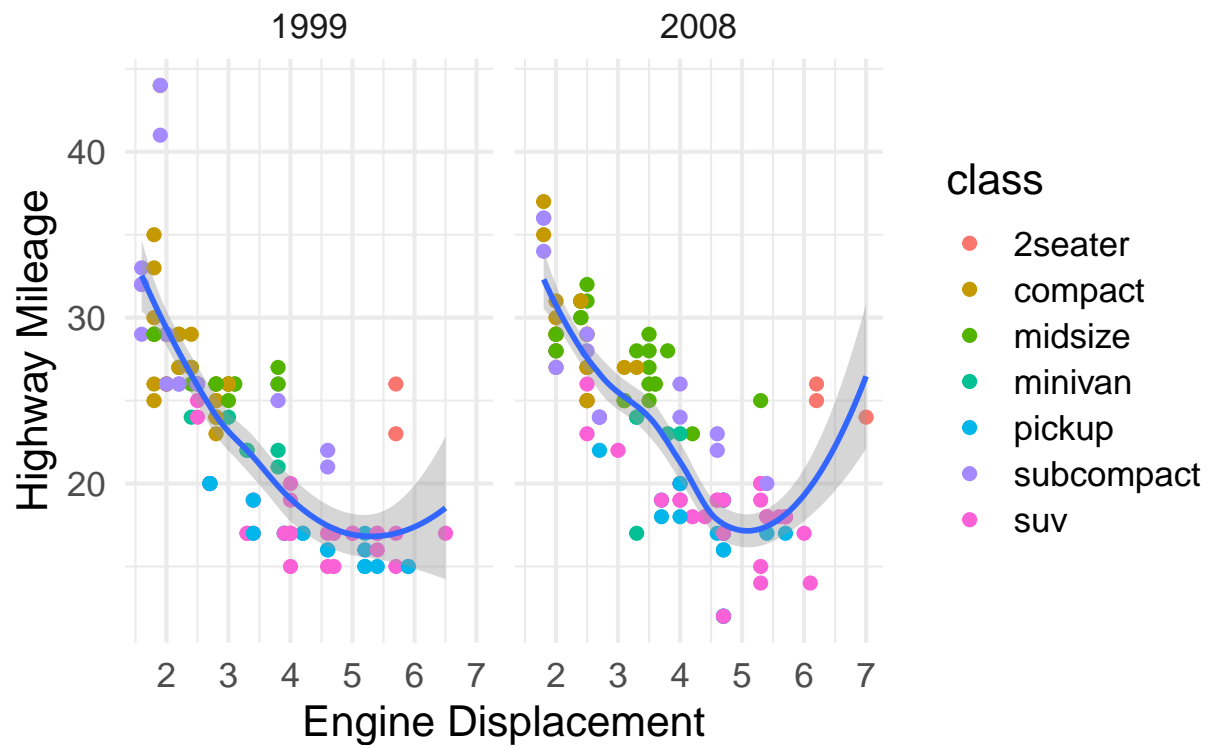
City 1999		Highway 1999		City 2008		Highway 2008	
Model	Milage	Model	Milage	Model	Milage	Model	Milage
new beetle	26	new beetle	35	corolla	27	corolla	36
civic	24.8	corolla	32.67	civic	24	civic	33.75
corolla	24.67	civic	31.6	gti	21.5	camry	30

City MPG by Class of Car: 1999, 2008



```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```

Highway MPG by Class of Car: 1999, 2008



Boxplots

