KnitR tutorial

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Loading packages and data:

```
setwd("/Users/tdas/Documents/R/ReproducibleResearch_and_DataVisualisation_in_R/RepResDatViz_ALS/Stud
library(ggplot2)
data(mpg)
```

Explore data

```
head(mpg)
```

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

```
str(mpg)
```

```
## 'data.frame': 234 obs. of  11 variables:
##  $ manufacturer: Factor w/ 15 levels "audi","chevrolet",..: 1 1 1 1 1 1 1 1 1 1 ...
##  $ model       : Factor w/ 38 levels "4runner 4wd",..: 2 2 2 2 2 2 2 3 3 3 ...
##  $ displ       : num  1.8 1.8 2 2 2.8 2.8 3.1 1.8 1.8 2 ...
##  $ year        : int  1999 1999 2008 2008 1999 1999 2008 1999 1999 2008 ...
##  $ cyl         : int  4 4 4 4 6 6 6 4 4 4 ...
##  $ trans       : Factor w/ 10 levels "auto(av)","auto(l3)",..: 4 9 10 1 4 9 1 9 4 10 ...
##  $ drv         : Factor w/ 3 levels "4","f","r": 2 2 2 2 2 2 2 1 1 1 ...
##  $ cty         : int  18 21 20 21 16 18 18 18 16 20 ...
##  $ hwy         : int  29 29 31 30 26 26 27 26 25 28 ...
##  $ fl          : Factor w/ 5 levels "c","d","e","p",..: 4 4 4 4 4 4 4 4 4 4 ...
##  $ class       : Factor w/ 7 levels "2seater","compact",..: 2 2 2 2 2 2 2 2 2 2 ...
```

```
pairs(mpg)
```

Initial plot of the following variables: displ = engine displacement, in litres cty = city miles per gallon model = model drv = f = fron wheel, r = rear wheel, 4 = four wheel

```
ggplot(mpg,aes(x=displ,y=cty,fill=drv))+geom_point(stat="identity",position="identity")+geom_smooth(

## geom_smooth:  method="auto" and size of largest group is <1000, so using loess.  Use
'method = x' to change the smoothing method.
```

Four-wheel-drived cars are less ecomomical per miles

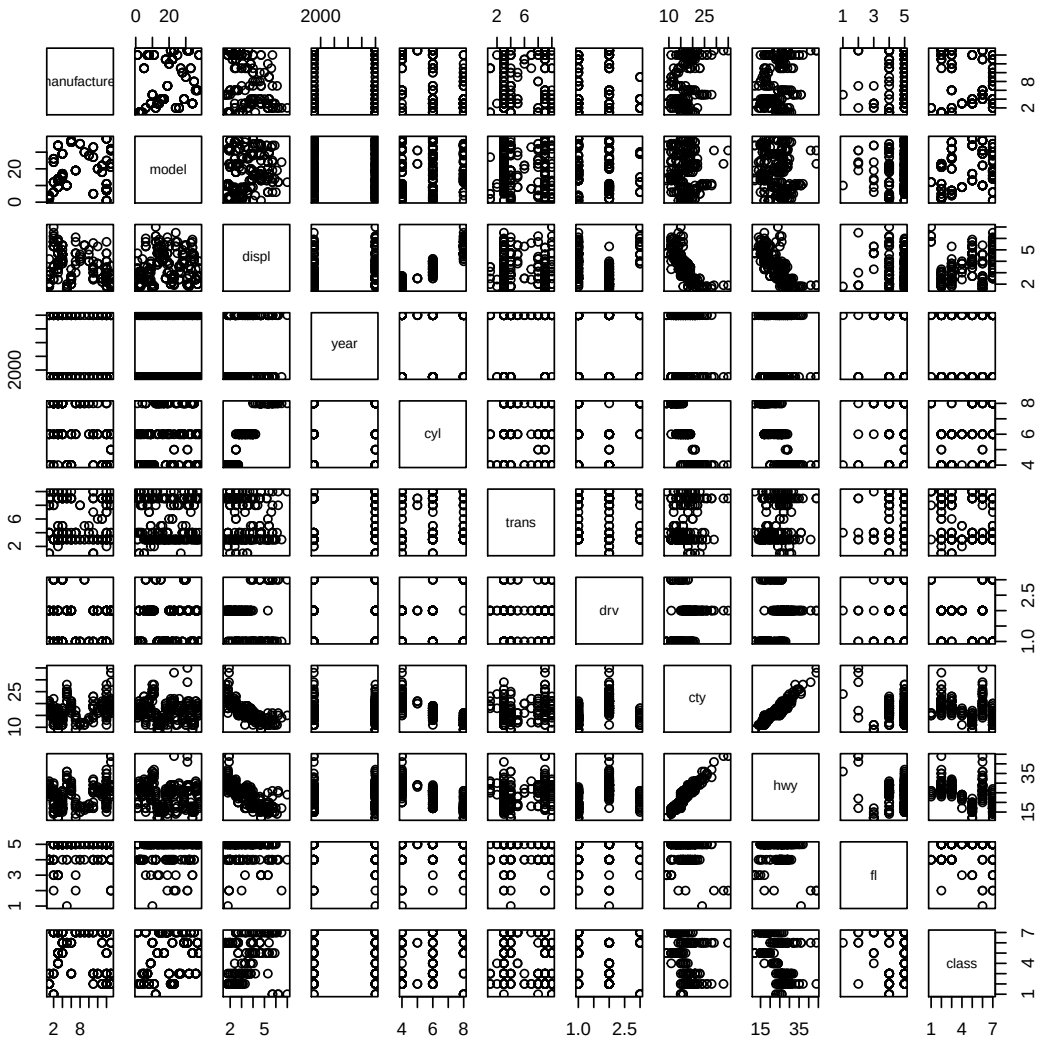

Figure 1: Figure 1: pairs plot of all variables

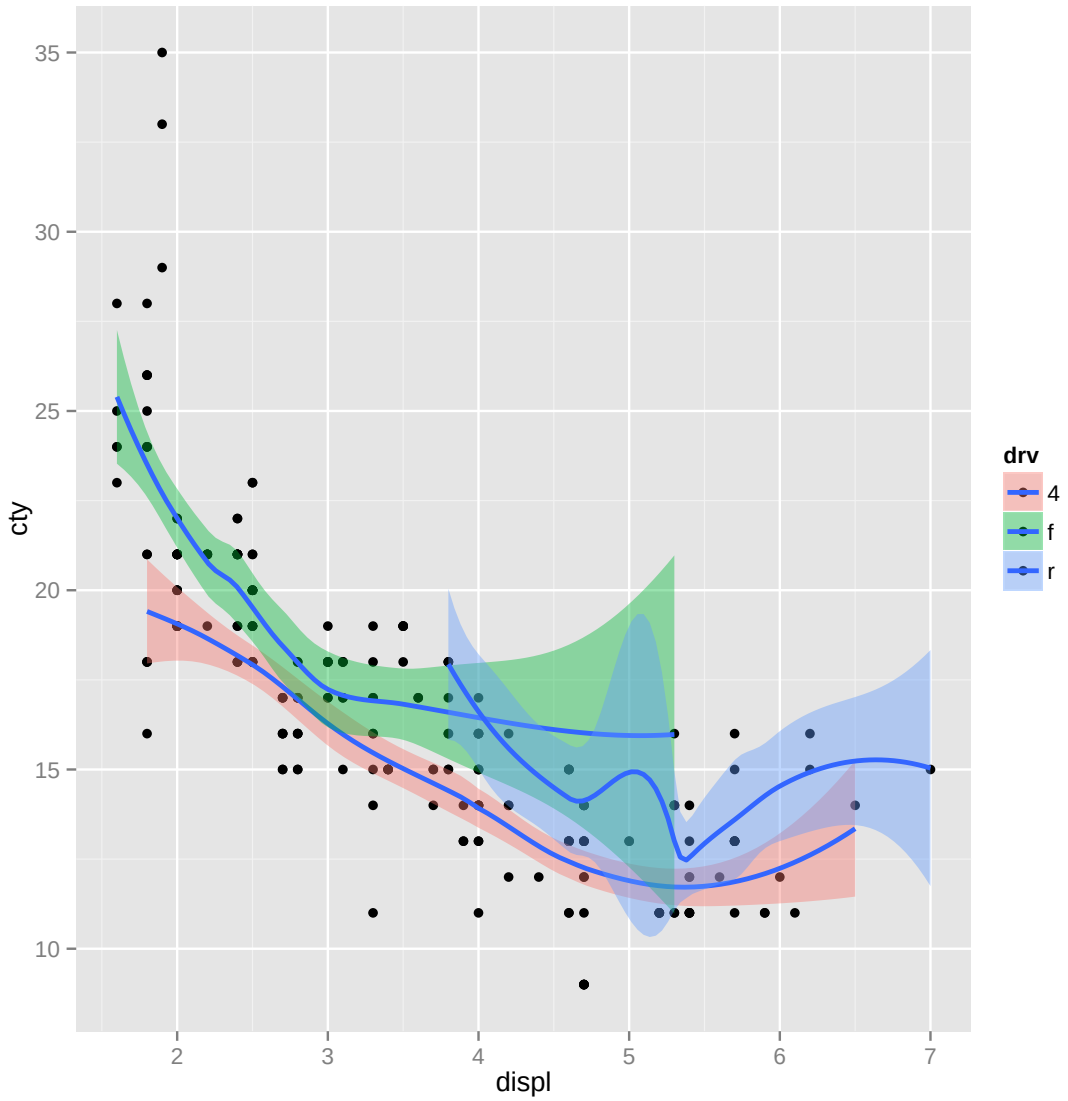

Figure 2: Figure 2: City miles per gallon as a function of engine displacement for 4-wheele drive (4), front-wheel drive (f) and rear-wheel drive (r) cars.