

week03_class05.R

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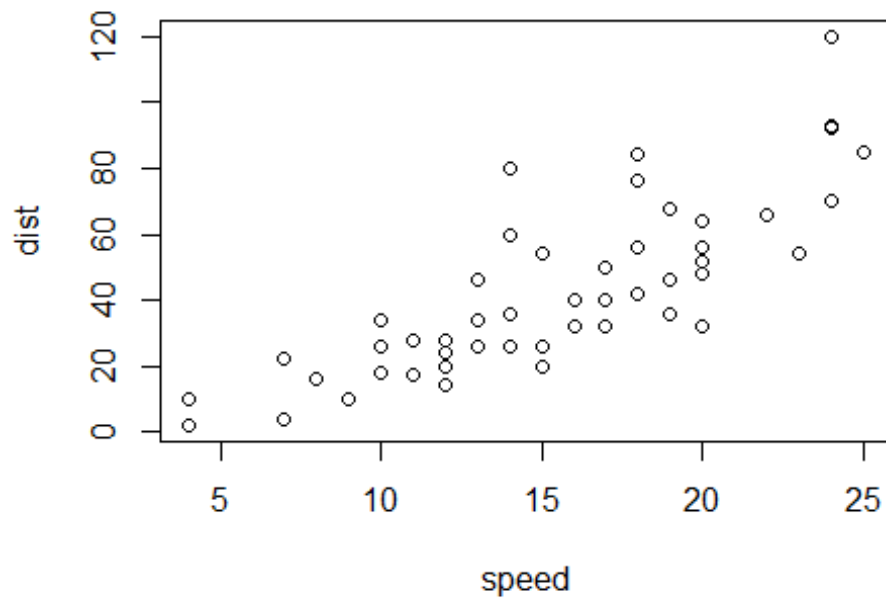
```
# Week 3 Data Visualization Lab 5

# Any time I want to use this package I need to load it
library("ggplot2")

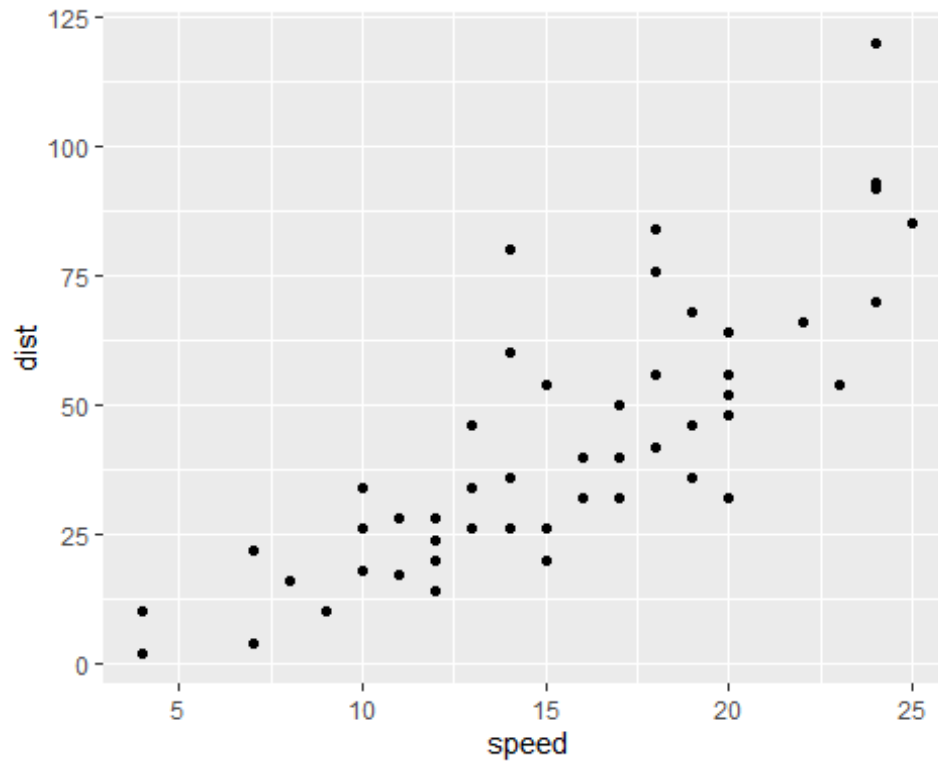
# Install the package ggplot2
# install.packages("ggplot2")

View(cars)

# A quick base R plot - not ggplot
plot(cars)
```

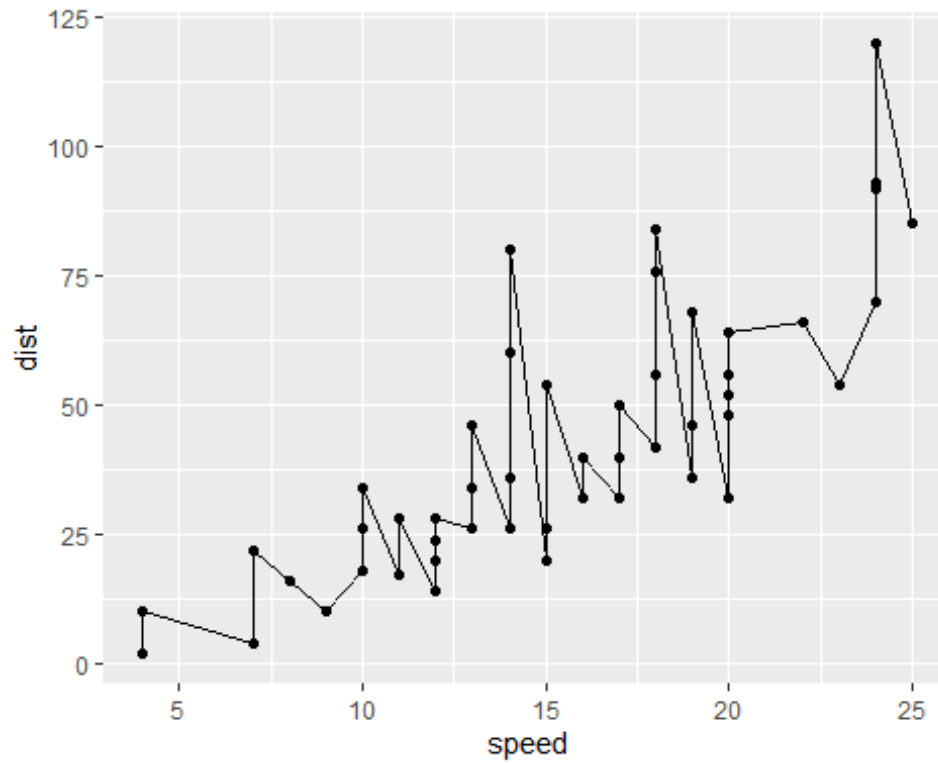


```
# First ggplot
# Need data + aes + geoms
ggplot(data = cars) + aes(x=speed, y=dist) + geom_point()
```



```
p <- ggplot(data =cars) + aes(x=speed, y=dist) + geom_point()

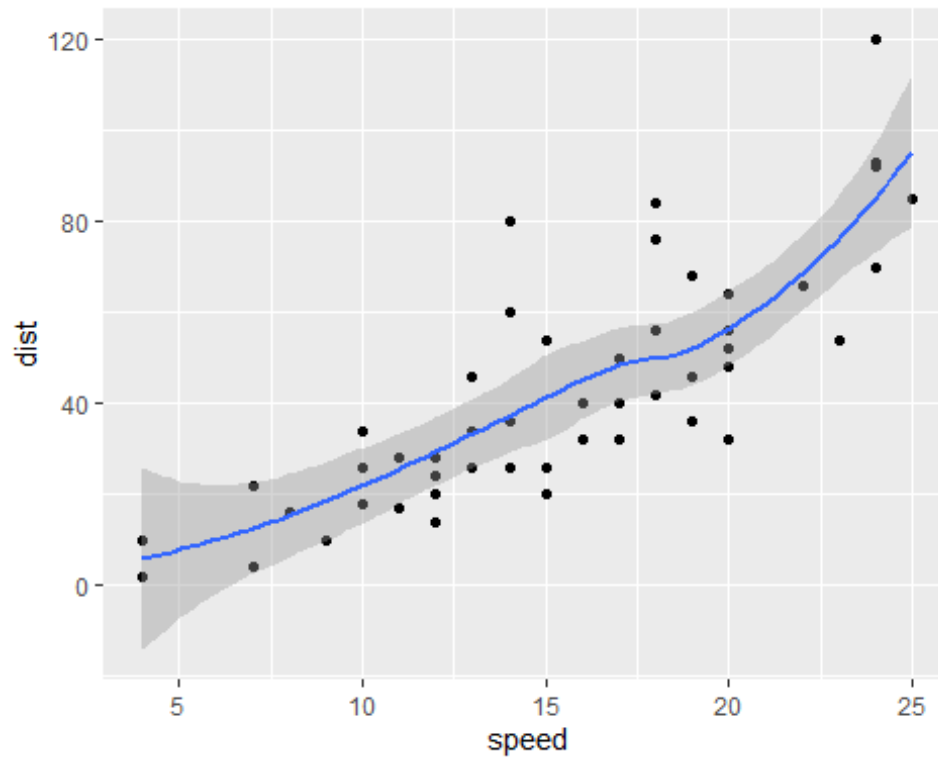
# Add a line geom with geom_line()
p + geom_line()
```



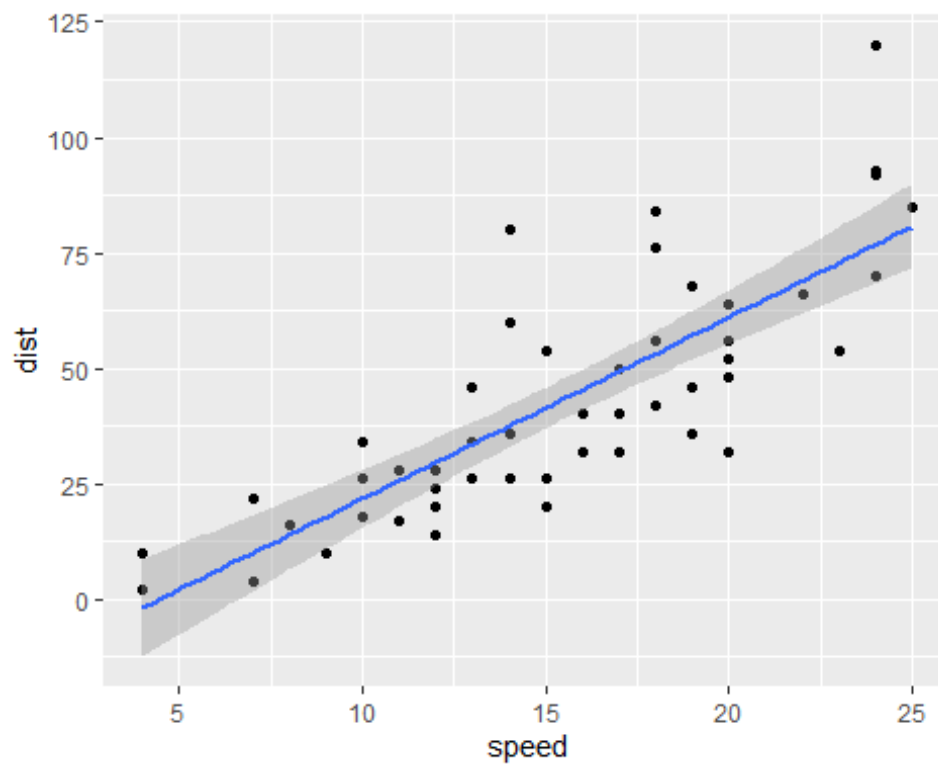
```
# Add a trend line close to the data
```

```
p + geom_smooth()
```

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



```
p + geom_smooth(method="lm")  
## `geom_smooth()` using formula = 'y ~ x'
```



```

# Read in our drug expression data
url <- "https://bioboot.github.io/bimm143_S20/class-
material/up_down_expression.txt"
genes <- read.delim(url)
head(genes)

##           Gene Condition1 Condition2      State
## 1      A4GNT -3.6808610 -3.4401355  unchanging
## 2       AAAS  4.5479580  4.3864126  unchanging
## 3      AASDH  3.7190695  3.4787276  unchanging
## 4       AATF  5.0784720  5.0151916  unchanging
## 5       AATK  0.4711421  0.5598642  unchanging
## 6 AB015752.4 -3.6808610 -3.5921390  unchanging

# Q. How many genes are in this dataset
nrow(genes)

## [1] 5196

# Q. How many columns are in this dataset
ncol(genes)

## [1] 4

# Q. How many 'up' regulated genes
table(genes$State)

##
##      down  unchanging      up
##       72      4997      127

# Q. What fraction of total genes is up-regulated
round( (table(genes$State) / nrow(genes)) * 100, 2 )

##
##      down  unchanging      up
##       1.39      96.17      2.44

library(ggplot2)

# First plot attempt
g <- ggplot(data=genes) + aes(x=Condition1, y=Condition2, col=State) +
  geom_point()

g

# Adding color

g + scale_color_manual( values = c("blue", "gray", "red")) +
  labs(title= "Gene expression Changes Upon Drug Treatment", x="Control (no

```

```
drug)", y="Drug Treatment") +  
  theme_bw()
```