Class05 Data Visualization

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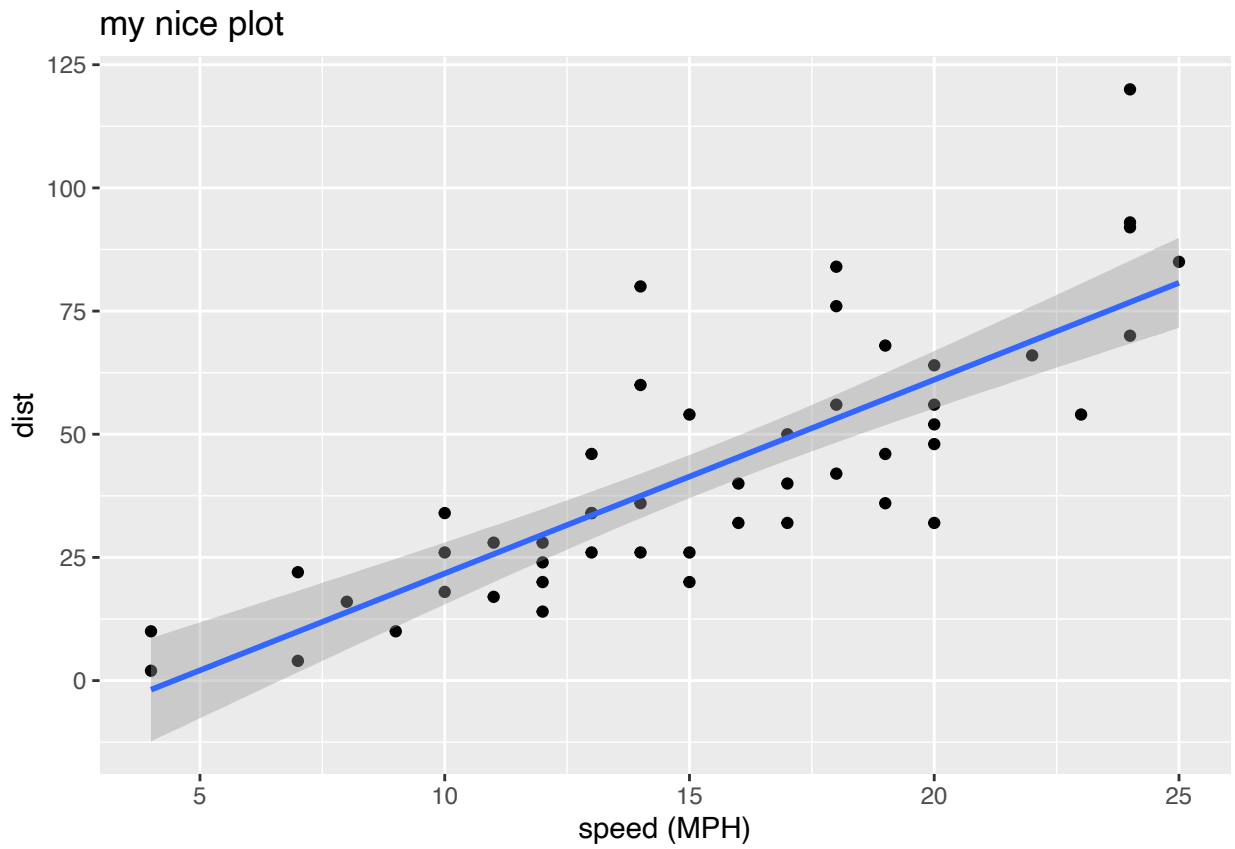
```
#class 05 data visualization
library(ggplot2)
p <- ggplot(data=cars) +
  aes(x=speed, y=dist) +
  geom_point() +
  geom_smooth(method="lm")

p + labs(title="my nice plot",
         x="speed (MPH)")
```

```
## `geom_smooth()` using formula 'y ~ x'
```



```
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
```

```
nrow(genes)
```

```
## [1] 5196
```

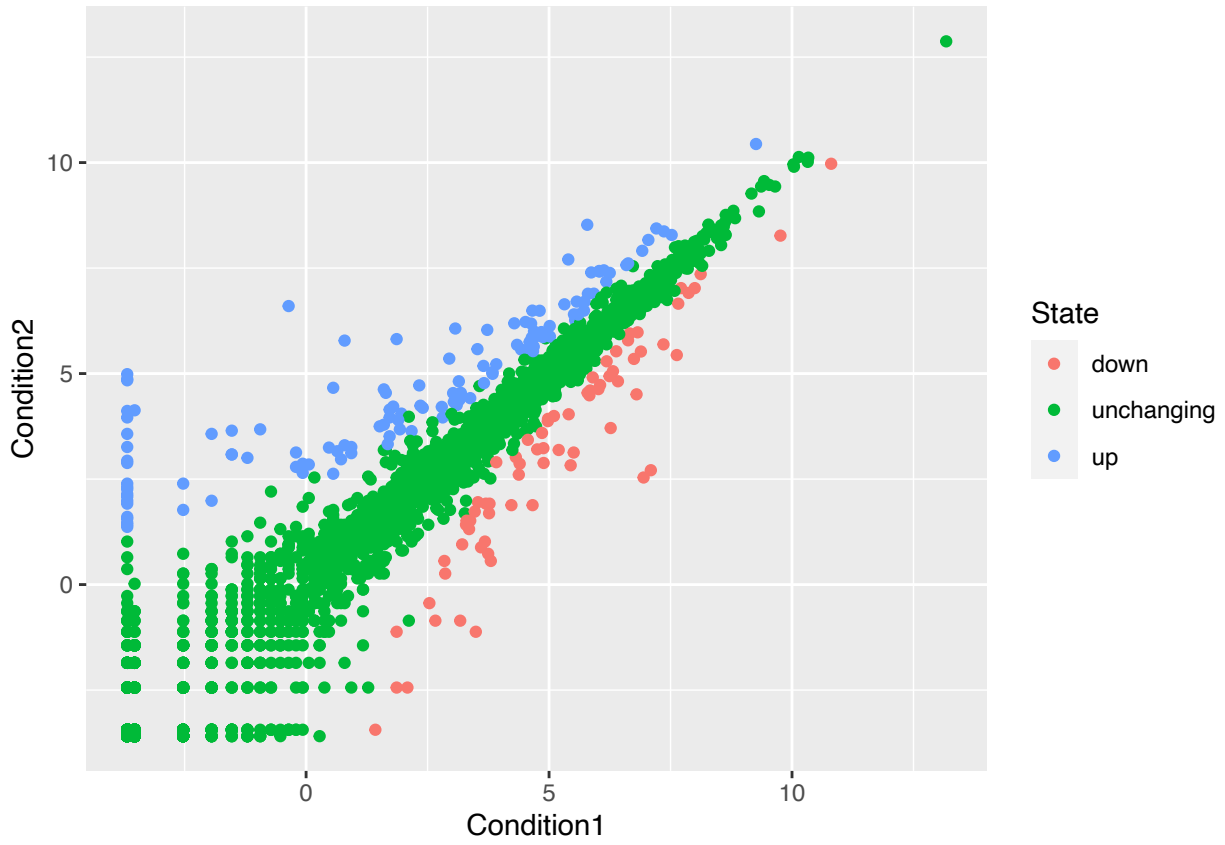
```
table( genes$State )
```

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

```
#the % are up/down
prec <- table( genes$State )/nrow(genes)*100
round( prec,2 )
```

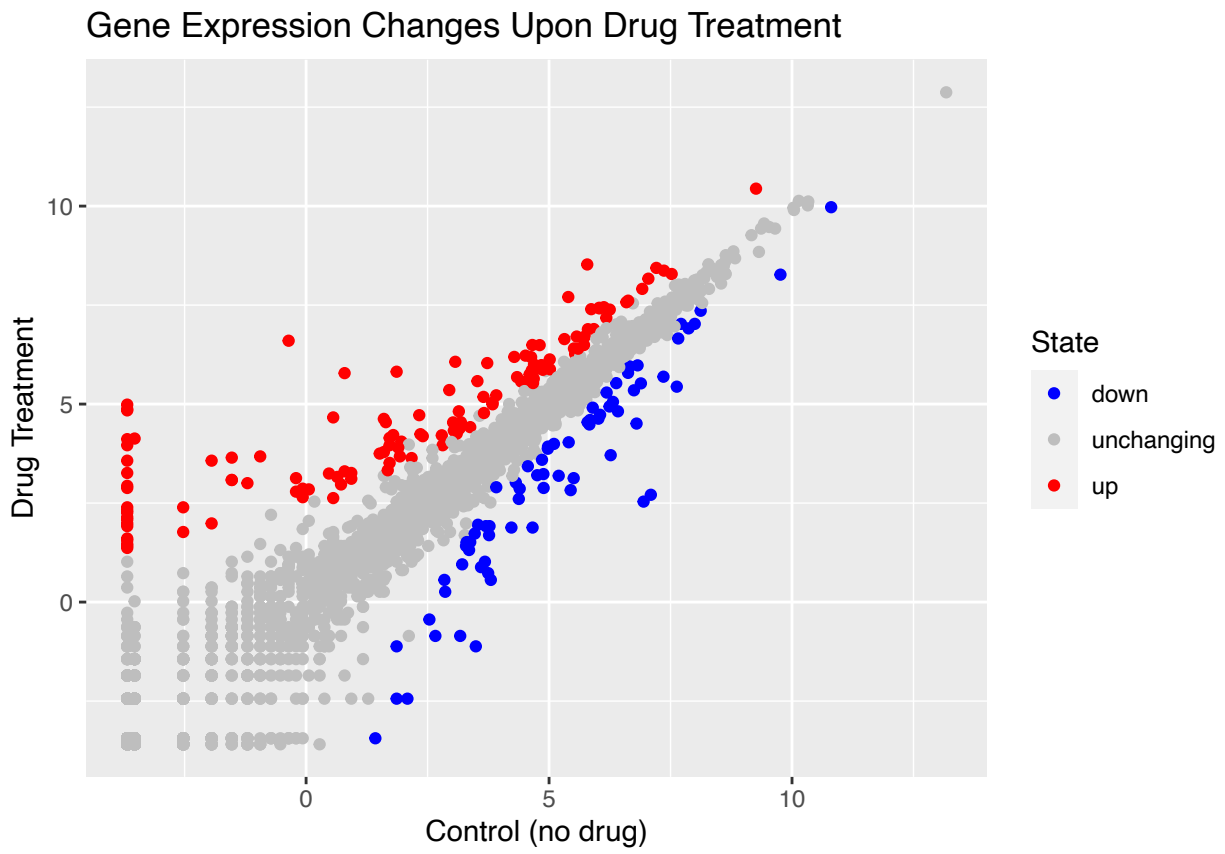
```
##
##       down unchanging         up
##       1.39      96.17       2.44
```

```
ggplot(genes) +
  aes(x=Condition1, y=Condition2, col=State) +
  geom_point()
```




```
x <- ggplot(genes) +
  aes(x=Condition1, y=Condition2, col=State) +
  geom_point()

x + labs(title="Gene Expression Changes Upon Drug Treatment",
         x="Control (no drug)",
         y="Drug Treatment")+
  scale_color_manual( values=c("blue","gray","red"))
```




```
library(gapminder)
head(gapminder)
```

```
## # A tibble: 6 x 6
##   country     continent  year lifeExp      pop gdpPercap
##   <fct>       <fct>     <int>   <dbl>    <int>     <dbl>
## 1 Afghanistan Asia       1952    28.8  8425333      779.
## 2 Afghanistan Asia       1957    30.3  9240934      821.
## 3 Afghanistan Asia       1962    32.0 10267083      853.
## 4 Afghanistan Asia       1967    34.0 11537966      836.
## 5 Afghanistan Asia       1972    36.1 13079460      740.
## 6 Afghanistan Asia       1977    38.4 14880372      786.
```

```
library(gganimate)
ggplot(gapminder, aes(gdpPercap,lifeExp,size=pop,color=country)) +
  geom_point(alpha = 0.7, show.legend = FALSE) +
  scale_color_manual(values = country_colors) +
  scale_size(range = c(2,12)) +
  scale_x_log10() +
  facet_wrap(~continent) + labs(title = 'Year: {frame_time}', x = 'GDP per capita',
                                y = 'life expectancy') +
transition_time(year) + shadow_wake (wake_length = 0.1, alpha = FALSE)
```