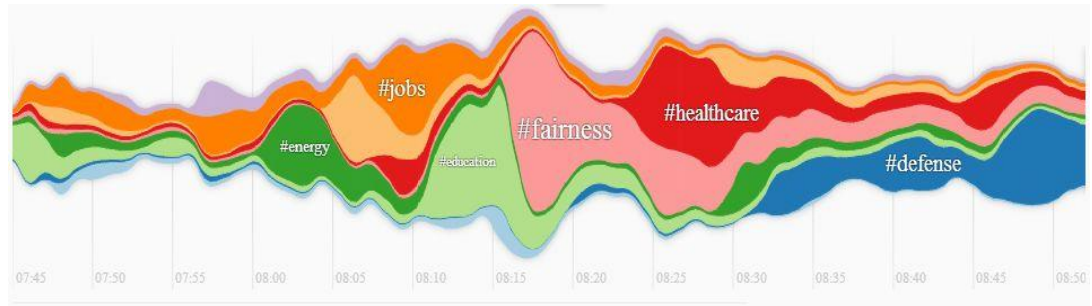
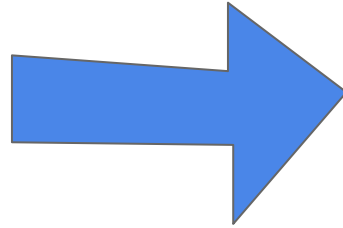


R PROGRAMMING

Dahlia Shvets

STATISTICS IS STORYTELLING



DATA



SORTED



ARRANGED



PRESENTED
VISUALLY



SET UP RSTUDIO AT HOME

- Download Rstudio:



Download RStudio

- First you will need
to download R



CREATING VARIABLES IN R

- Variables are called *vectors* in R
- You can create a vector like this:
 - `name <- "Dahlia"`
 - `names <- c("Dahlia", "Elizabeth", "Shvets")`
 - `age <- 24`
 - `age <- c(24, 10, 2, 90)`

DATA IN R

- R automatically includes several datasets that you can play with at home
- Access them by typing :

data()

DATA SETS IN R

```
Data sets in package 'datasets':
```

```
AirPassengers
```

```
Monthly Airline  
Passenger Numbers  
1949-1960
```

```
BJsales      Sales Data with  
Leading Indicator
```

```
BJsales.lead (BJsales)  
Sales Data with  
Leading Indicator
```

```
BOD          Biochemical Oxygen  
Demand
```

```
CO2         Carbon Dioxide Uptake  
in Grass Plants
```

```
ChickWeight
```

```
Weight versus age of  
chicks on different  
diets
```

```
DNase       Elisa assay of DNase
```

```
EuStockMarkets
```

```
Daily Closing Prices  
of Major European  
Stock Indices,  
1991-1998
```

```
Formaldehyde
```

```
Recombination of
```

- Pick a data set!
- Type the name into R and see what happens.
- **head(ChickWeight)**
- **Column: ChickWeight[,1]**
- **Row: ChickWeight[1,]**

FUN WITH R

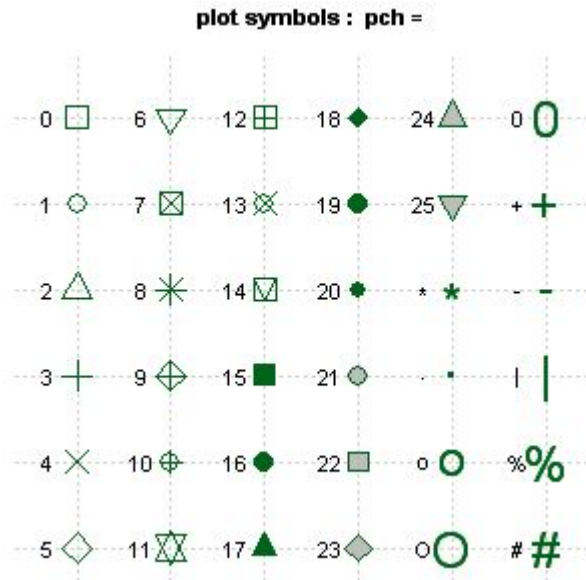
- `time <- ChickWeight[,2]`
- `ChickWeight$Time`

- `weight <- ChickWeight[,1]`
- `ChickWeight$weight`

- `plot(time,weight,col="red")`

EDIT YOUR PLOT

- Change the shapes type: **pch=**



PLOT LABELS & COLORS

```
plot(time,weight,col="red",pch=11,  
main="Chicken Time and Weight Plot",  
sub="My Very Cool Plot",  
col.main="purple",  
col.sub="green",  
xlab="Time in Minutes",  
ylab="Weight in Pounds")
```

SEPARATE DATA BY DIET TYPE

```
with(ChickWeight,plot(Time,weight,col=Diet))
```

MORE PLOTS

- `smoothScatter(time, weight)`
- `hist(weight)`
- `boxplot(weight)`
- `pairs(ChickWeight)`

HAIR & EYE COLOR

```
require(graphics)
```

```
mosaicplot(HairEyeColor)
```

```
x <- apply(HairEyeColor, c(1, 2), sum)
```

```
mosaicplot(x)
```

```
mosaicplot(x,color=TRUE)
```

GRAPHICS USING R

library(graphics)

example(plot)

example(boxplot)

example(hist)

example(stars)

example(contour)

example(persp) ← *(This one is cool!)*

example(barplot)

example(coplot)

example(fourfoldplot)

example(image)

example(filled.contour)

PRACTICE AT HOME!

<http://tryr.codeschool.com/>



{swirl}

Learn R, in R.

<http://swirlstats.com/>