

# Data Vizualization with ggplot2

Chuvakin Sergey

«School of Advanced Studies»

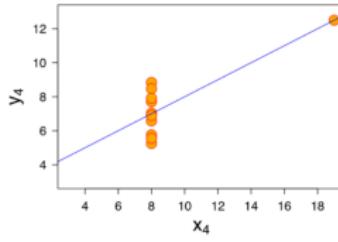
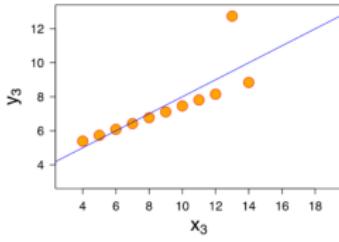
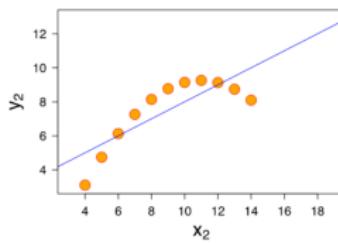
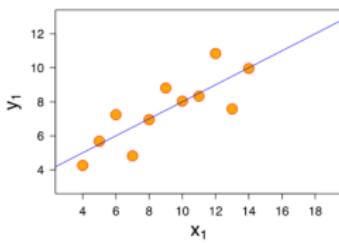
November 3, 2020

# Outline

- ▶ Why we need it?
- ▶ Ways to represent data
- ▶ Basic principles

# Why we need it??

Certainly we can explore data using basic statistics like mean, median, mode standard deviation, but ...



# Why we need it??

	I		II		III		IV	
	x	y	x	y	x	y	x	y
	10	8,04	10	9,14	10	7,46	8	6,58
	8	6,95	8	8,14	8	6,77	8	5,76
	13	7,58	13	8,74	13	12,74	8	7,71
	9	8,81	9	8,77	9	7,11	8	8,84
	11	8,33	11	9,26	11	7,81	8	8,47
	14	9,96	14	8,1	14	8,84	8	7,04
	6	7,24	6	6,13	6	6,08	8	5,25
	4	4,26	4	3,1	4	5,39	19	12,5
	12	10,84	12	9,13	12	8,15	8	5,56
	7	4,82	7	7,26	7	6,42	8	7,91
	5	5,68	5	4,74	5	5,73	8	6,89
SUM	99,00	82,51	99,00	82,51	99,00	82,50	99,00	82,51
AVG	9,00	7,50	9,00	7,50	9,00	7,50	9,00	7,50
STDEV	3,32	2,03	3,32	2,03	3,32	2,03	3,32	2,03

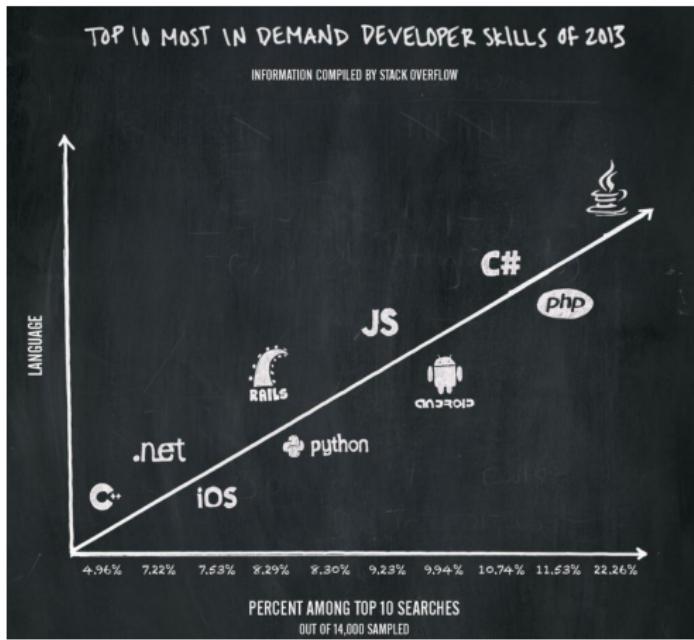
# Types

Not sure that I can do it better, let's just follow [this link](#) and discuss it.

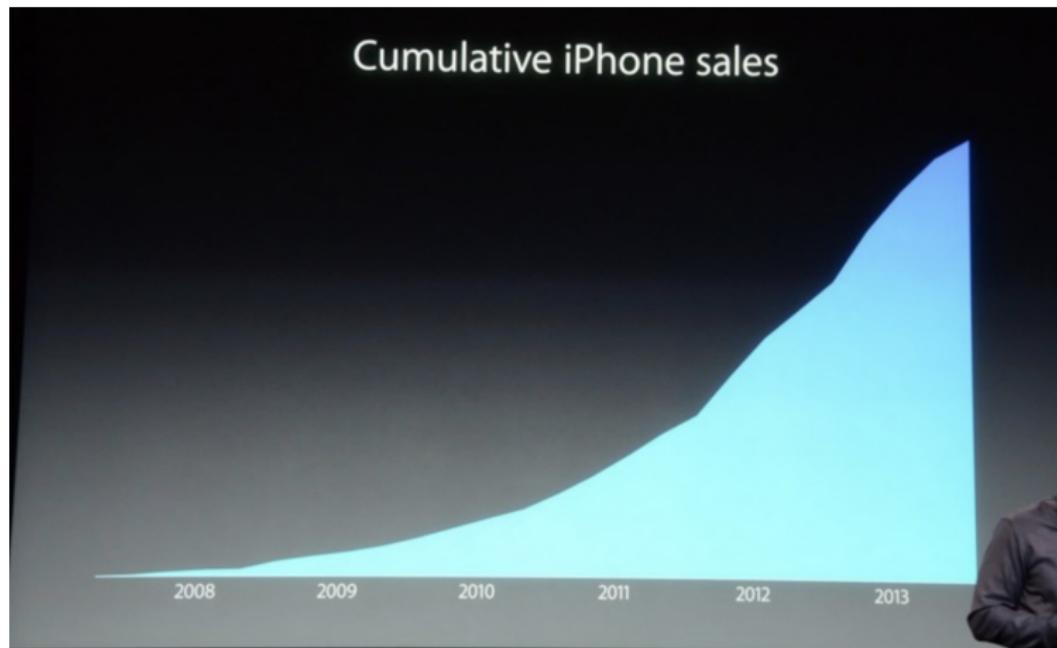
# Principles

- ▶ Plot it's a story!
- ▶ Choose type wisely!
- ▶ Highlight important moments!
- ▶ Choose right colors!
- ▶ Pay attention to axes!
- ▶ Pay attention to titles!
- ▶ Fancy does not mean cool
- ▶ Avoid redundancy, just important things on plot
- ▶ Add interactivity when appropriate

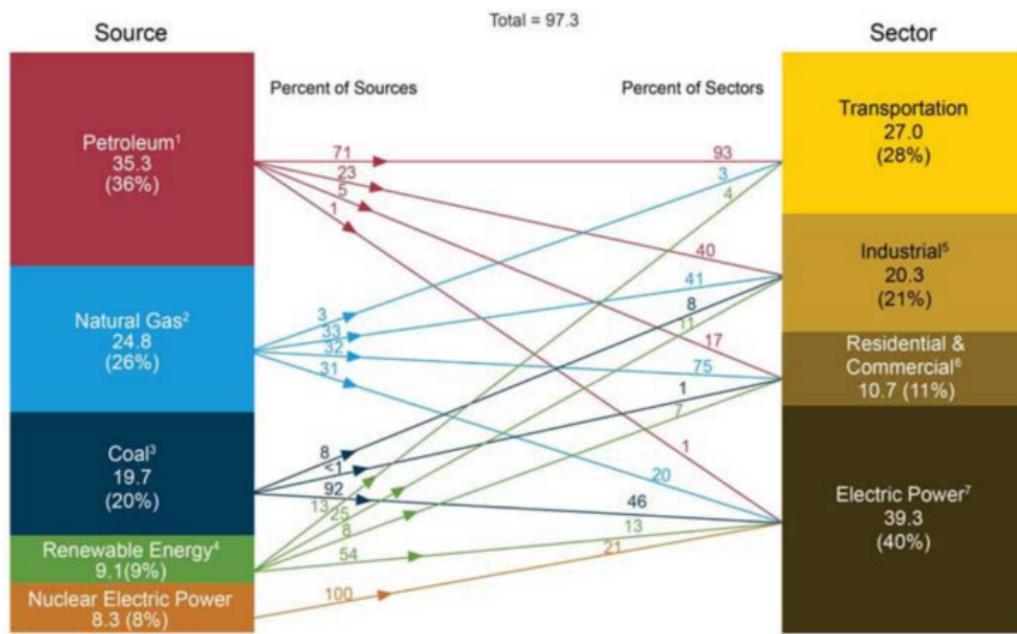
# Examples



## Examples



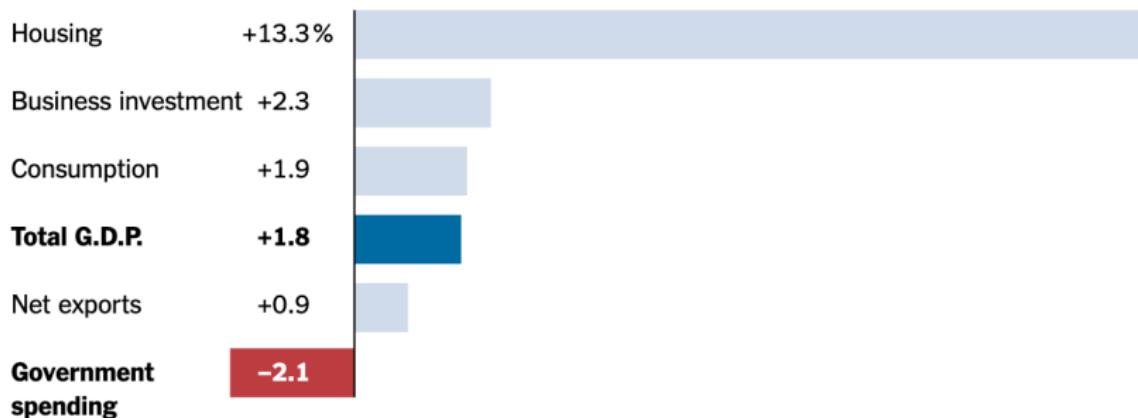
# Examples



# Examples

## An Unbalanced Recovery

Estimated growth or decline for 2013.



## Examples



# Examples



# Examples

## Lotto numbers, like a star

