

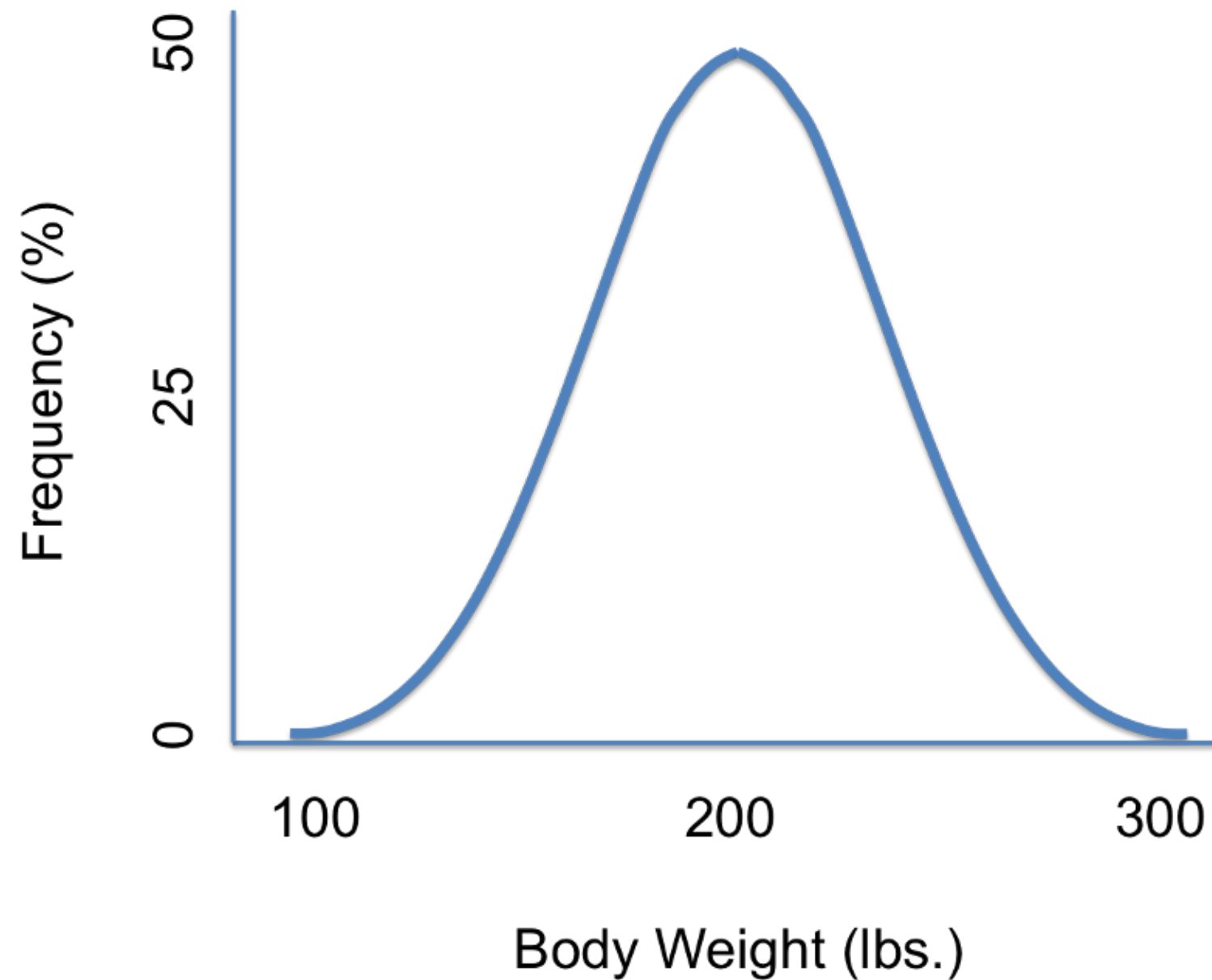
Visualizing Distributions

INTRODUCTION TO STATISTICS IN SPREADSHEETS



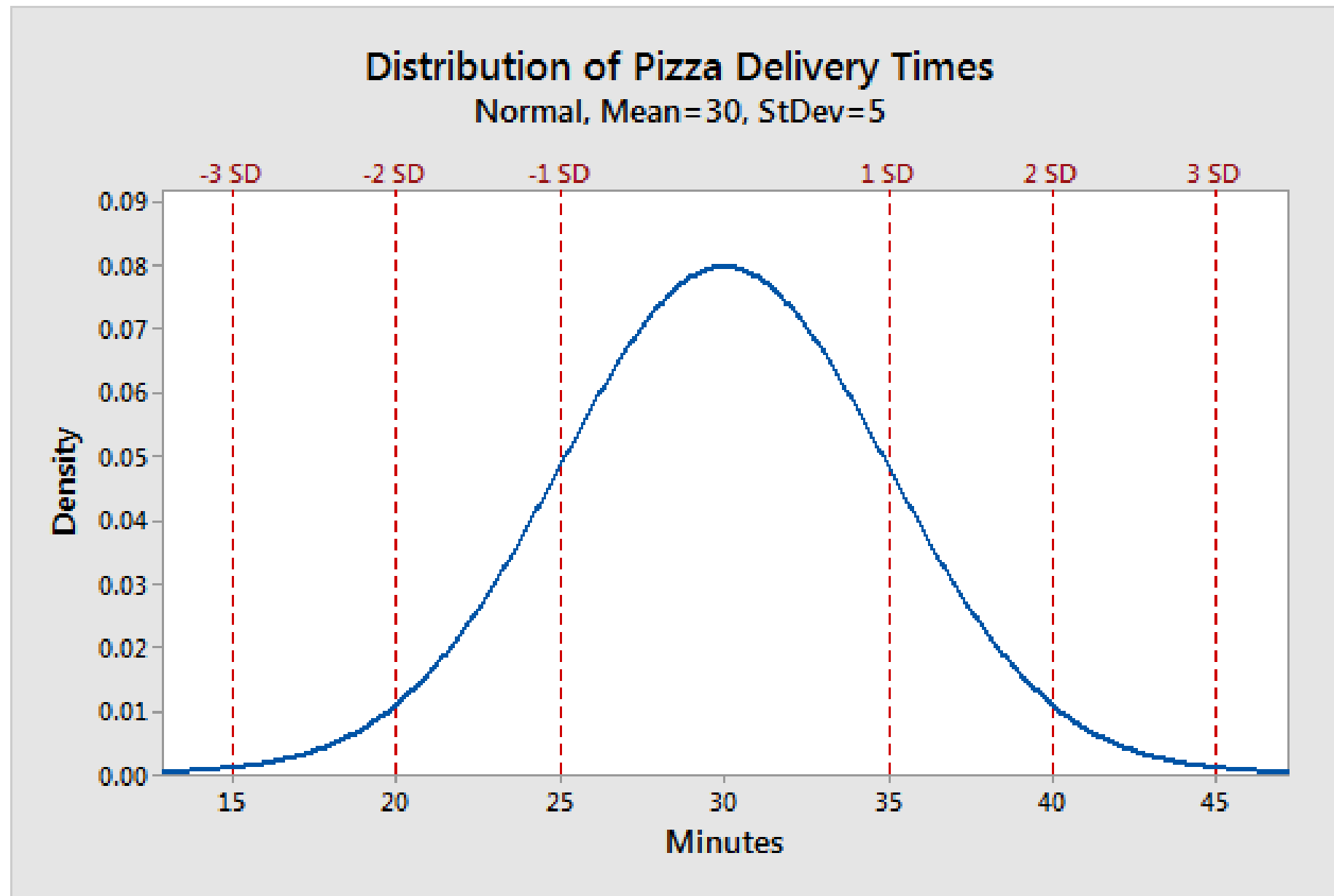
Ted Kwartler
Data Dude

Common distribution



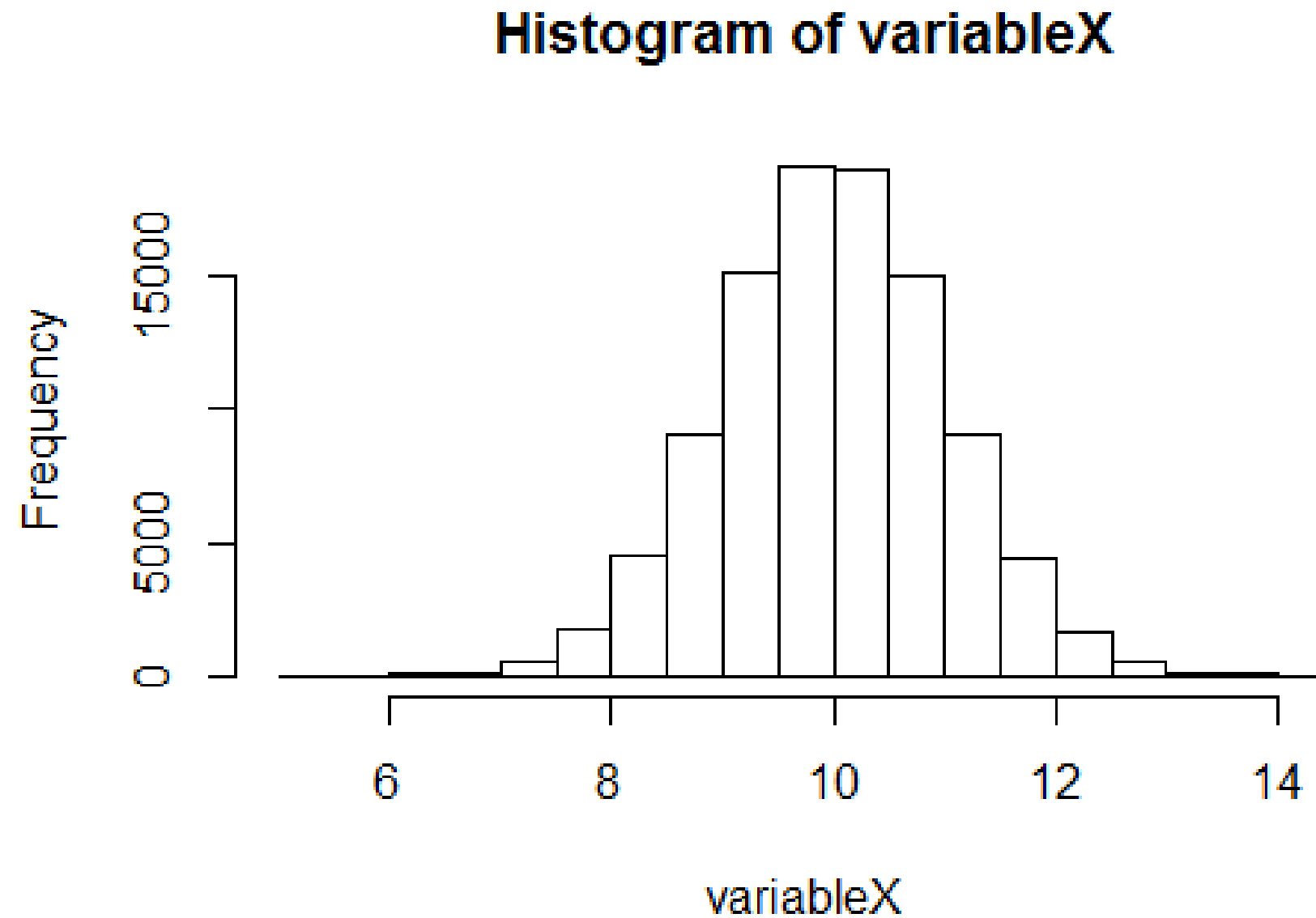
¹ http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/BS704_Probability/BS704_Probability8.html

Another example

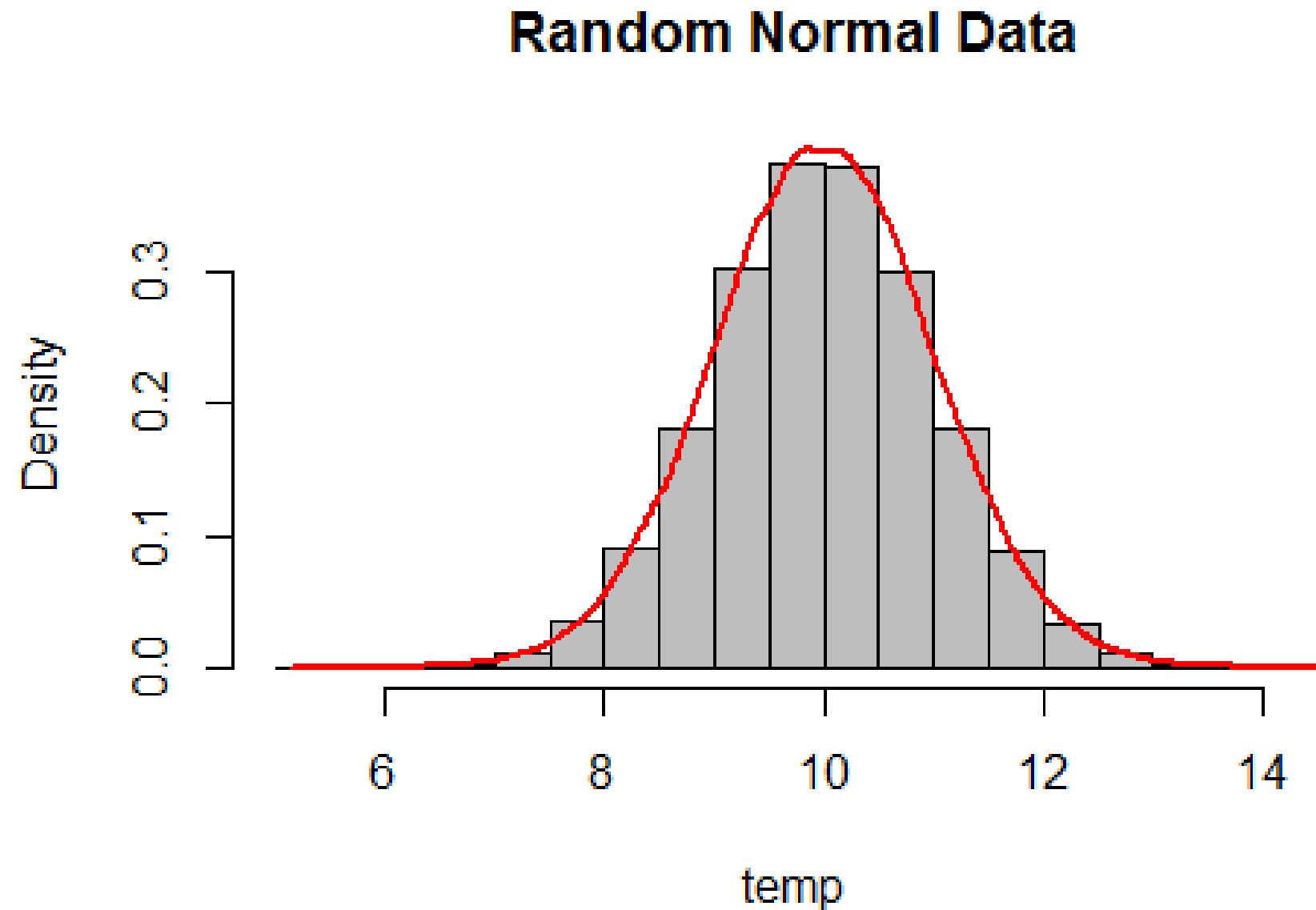


¹ <https://statisticsbyjim.com/basics/normal-distribution/>

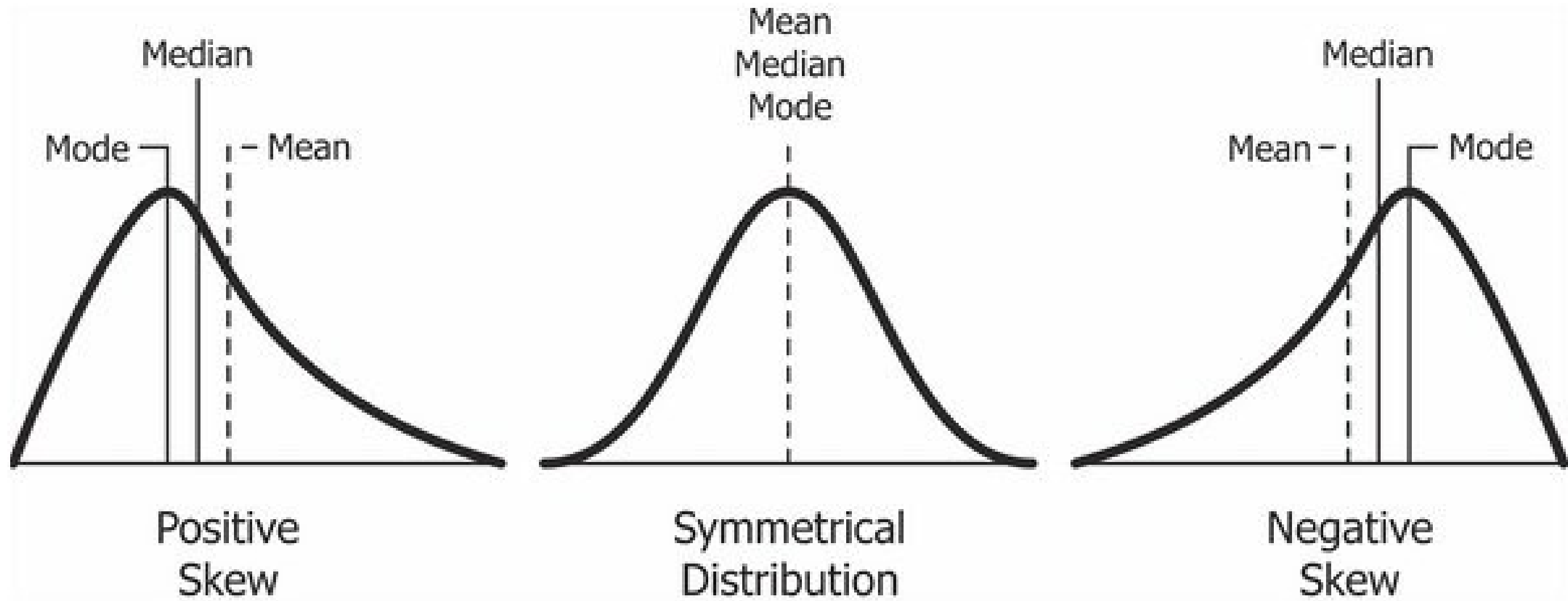
The Histogram



Comparing smoothed Density plot & histogram

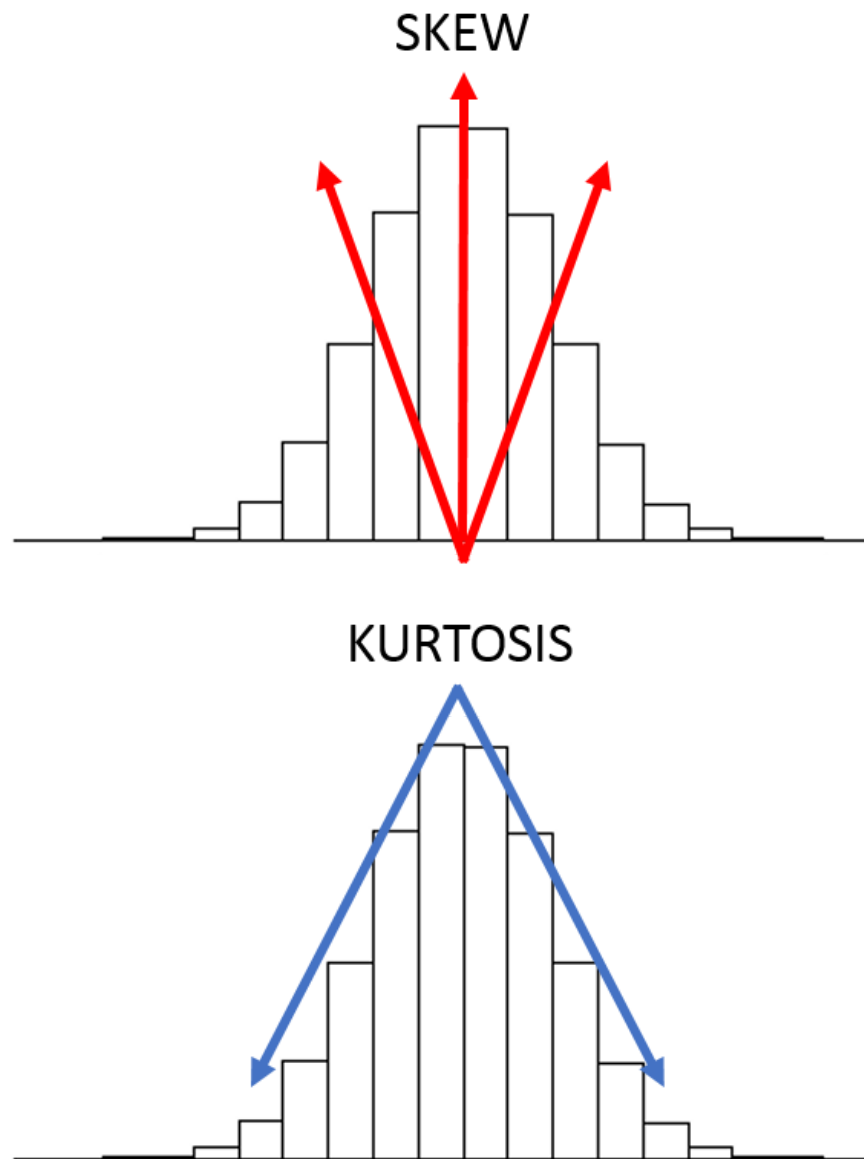


Other distributions



¹ <https://codeburst.io/2-important-statistics-terms-you-need-to-know-in-data-science-skewness-and-kurtosis-388fef94eeaa>

How normal is the data distribution?



Between -2 & 2 are normal

```
=skew(A1:A10)
```

```
=kurt(A1:A10)
```



Undo, Redo, Print, Copy, Paste, 100%, \$, %, .0, .00, 123, Arial, 10, Bold, Italic, Underline, Fill color, Background color, Text color, Bulleted list, Numbered list, Decrease indent, Increase indent, Find and replace, Link, Insert link, Chart, Filter, Sum

fx														
	A	B	C	D	E	F	G	H	I	J	K	L	M	
1	Savings													
2	1811.669													
3	1709.214													
4	2530.055													
5	1849.006													
6	2208.349													
7	1255.457													
8	860.8711													
9	867.0768													
10	1418.344													
11	1481.668													
12	1630.174													
13	959.3314													
14	684.3675													
15	1038.446													
16	969.2566													
17	996.1584													
18	831.3625													
19	1228.094													
20	1047.772													
21	1162.463													
22	1198.601													
23	1979.557													
24	717.1135													
25	1290.663													



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Savings												
2	1811.669												
3	1709.214												
4	2530.055												
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21	1162.463												
22	1198.601												
23	1979.557												
24	717.1135												
25	1290.663												



100% \$ % .0 .00 123 Arial 10 B I S A

fx

	A	B	C	D	E	F	G	H	I	J
1	Savings									
2	1811.669									
3	1709.214									
4	2530.055									
5	1849.006									
6	2208.349									
7	1255.457									
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17	996.1584									
18	831.3625									
19	1228.094									
20	1047.772									
21	1162.463									
22	1198.601									
23	1979.557									
24	717.1135									
25	1290.663									

No data



Chart editor



Setup

Customize

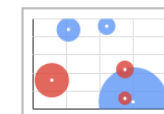
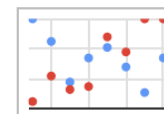
Chart type



Histogram chart



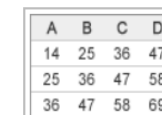
Scatter



Map



Other





100% \$ % .0 .00 123 Arial 10 B I S A

fx

	A	B	C	D	E	F	G	H	I	J
1	Savings									
2	1811.669									
3	1709.214									
4	2530.055									
5	1849.006									
6	2208.349									
7	1255.457									
8	860.8711									
9	867.0768									
10	1418.344									
11	1481.668									
12	1630.174									
13	959.3314									
14	684.3675									
15	1038.446									
16	969.2566									
17	996.1584									
18	831.3625									
19	1228.094									
20	1047.772									
21	1162.463									
22	1198.601									
23	1979.557									
24	717.1135									
25	1290.663									

No data



Chart editor



Setup

Customize

Chart type



Histogram chart

Data range

A2:A101



X-AXIS

Add X-axis



SERIES

Add Series

☐ Switch rows / columns☐ Use row 887 as headers☐ Use column L as labels



100% \$ % .0 .00 123 Arial 10 B I S A

fx

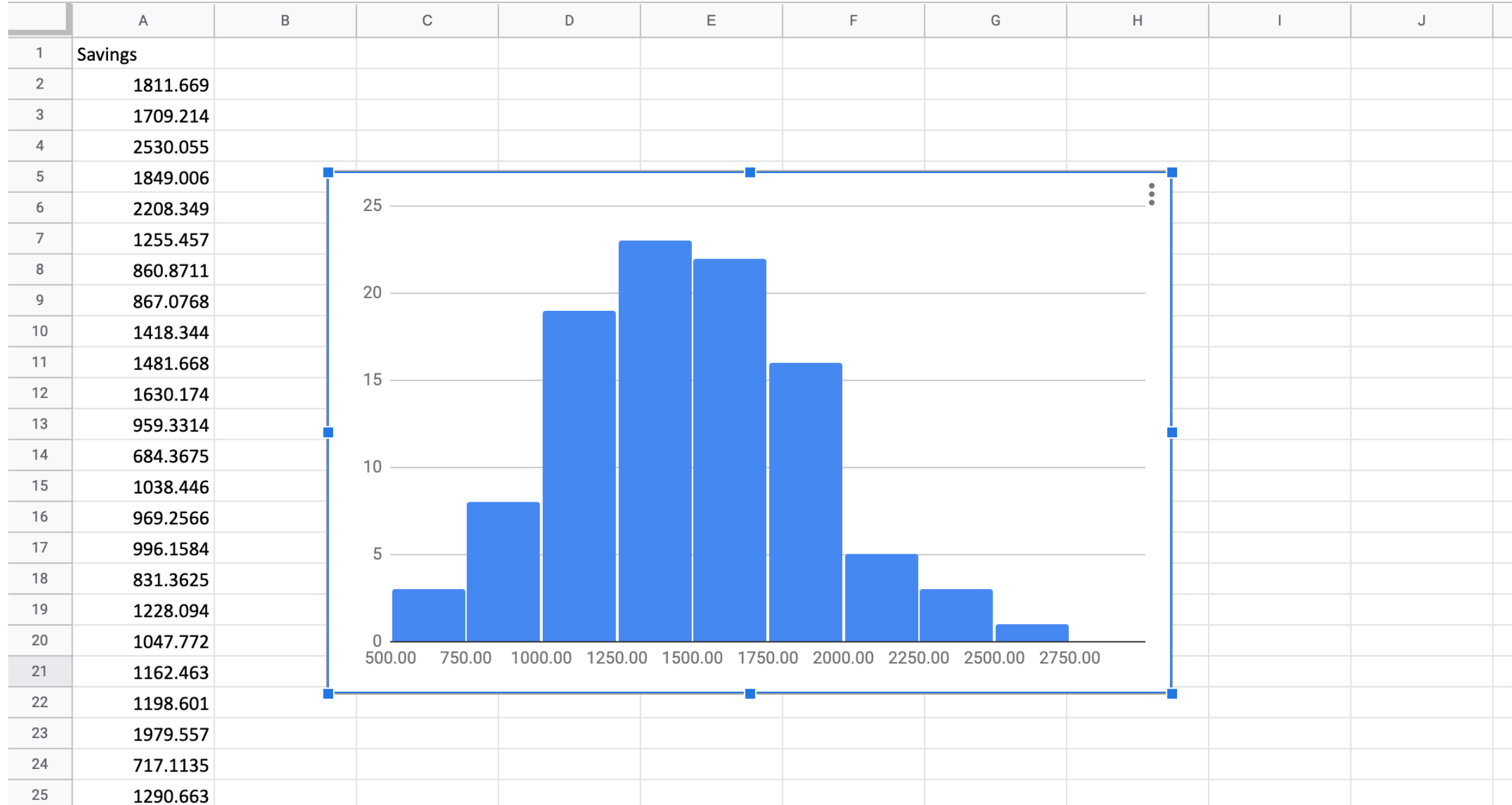


Chart editor



Setup

Customize

Chart type

Histogram chart

Data range

A2:A101

X-AXIS

Add X-axis

SERIES

123 A2:A101

Add Series

- ☐ Switch rows / columns
- ☐ Use row 2 as headers
- ☐ Use column A as labels

Let's practice!

INTRODUCTION TO STATISTICS IN SPREADSHEETS

Scatterplots

INTRODUCTION TO STATISTICS IN SPREADSHEETS



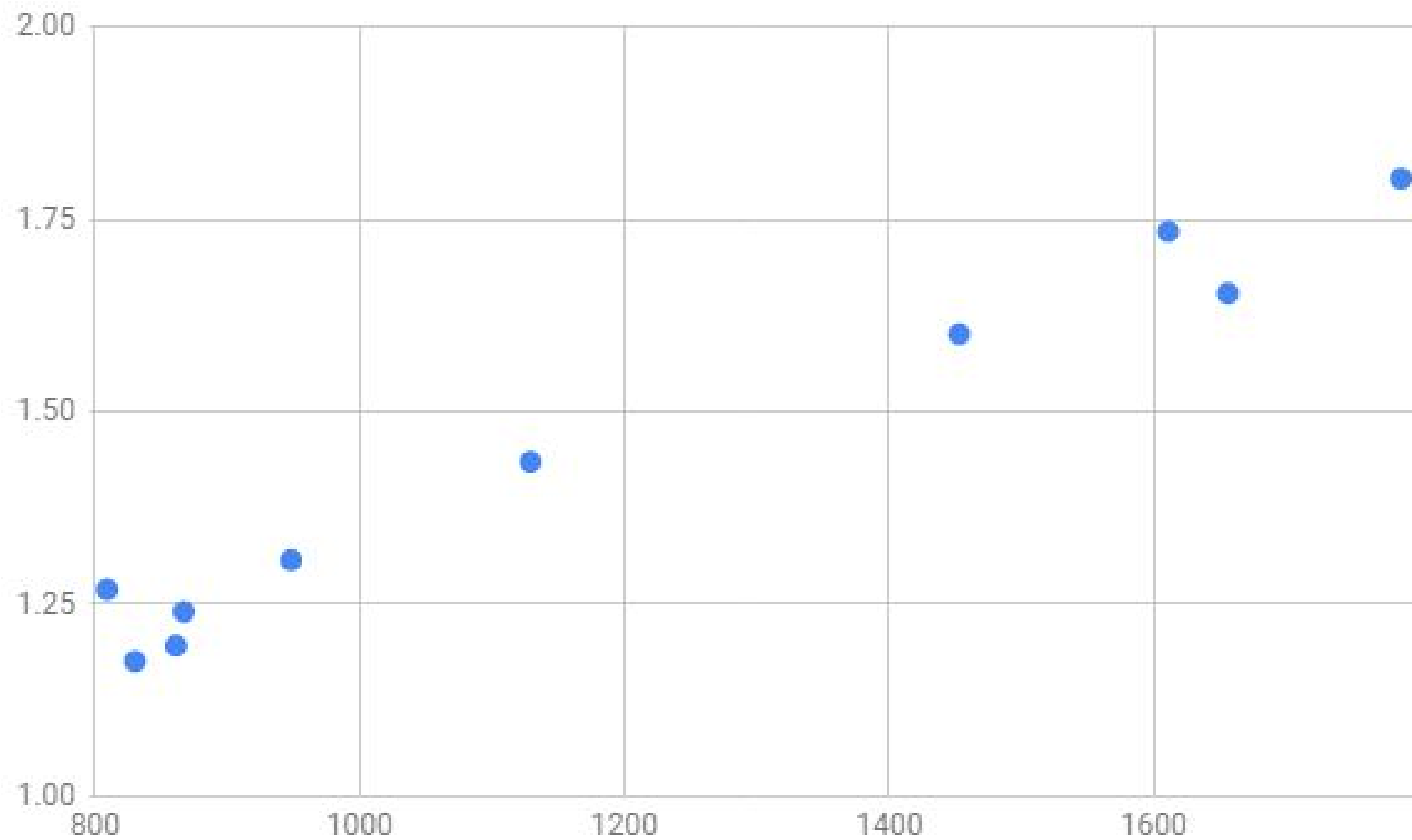
Ted Kwartler
Data Dude

Don't be scatter brained

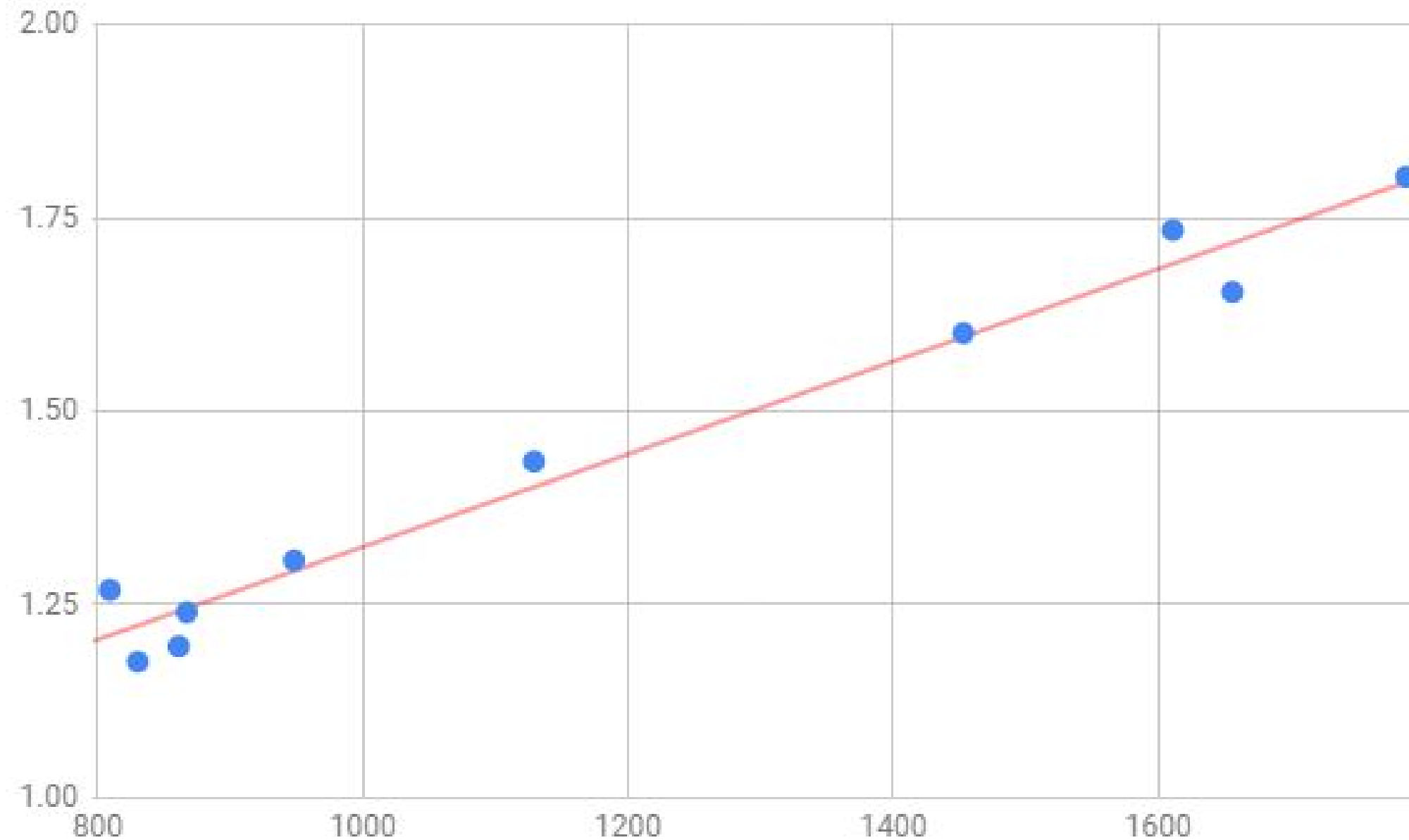
	A	B
1	ComputeScienceDoctorates	USArcadeRevenue_Billions
2	809	1.27
3	830	1.18
4	861	1.20
5	867	1.24
6	948	1.31
7	1129	1.44
8	1453	1.60
9	1611	1.73
10	1656	1.65
11	1787	1.80

¹ <https://tylervigen.com/spurious-correlations>

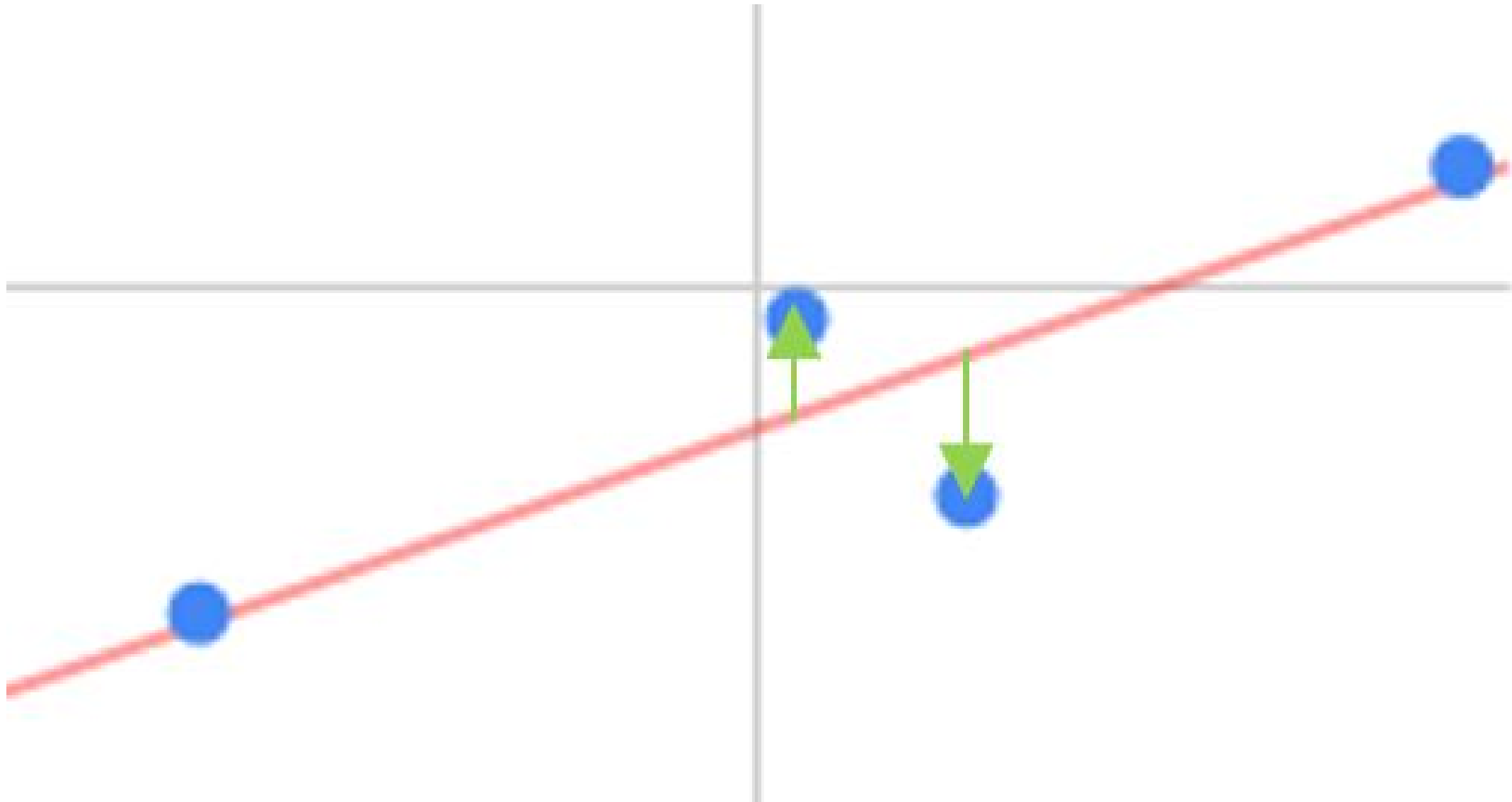
Aha! There is a correlation!



Making your imagination real



How did that work?



Stats about the trendline

LINE ESTIMATE

```
=LINEST(rangeX, rangeY)
```

Let's practice!

INTRODUCTION TO STATISTICS IN SPREADSHEETS

Bar charts

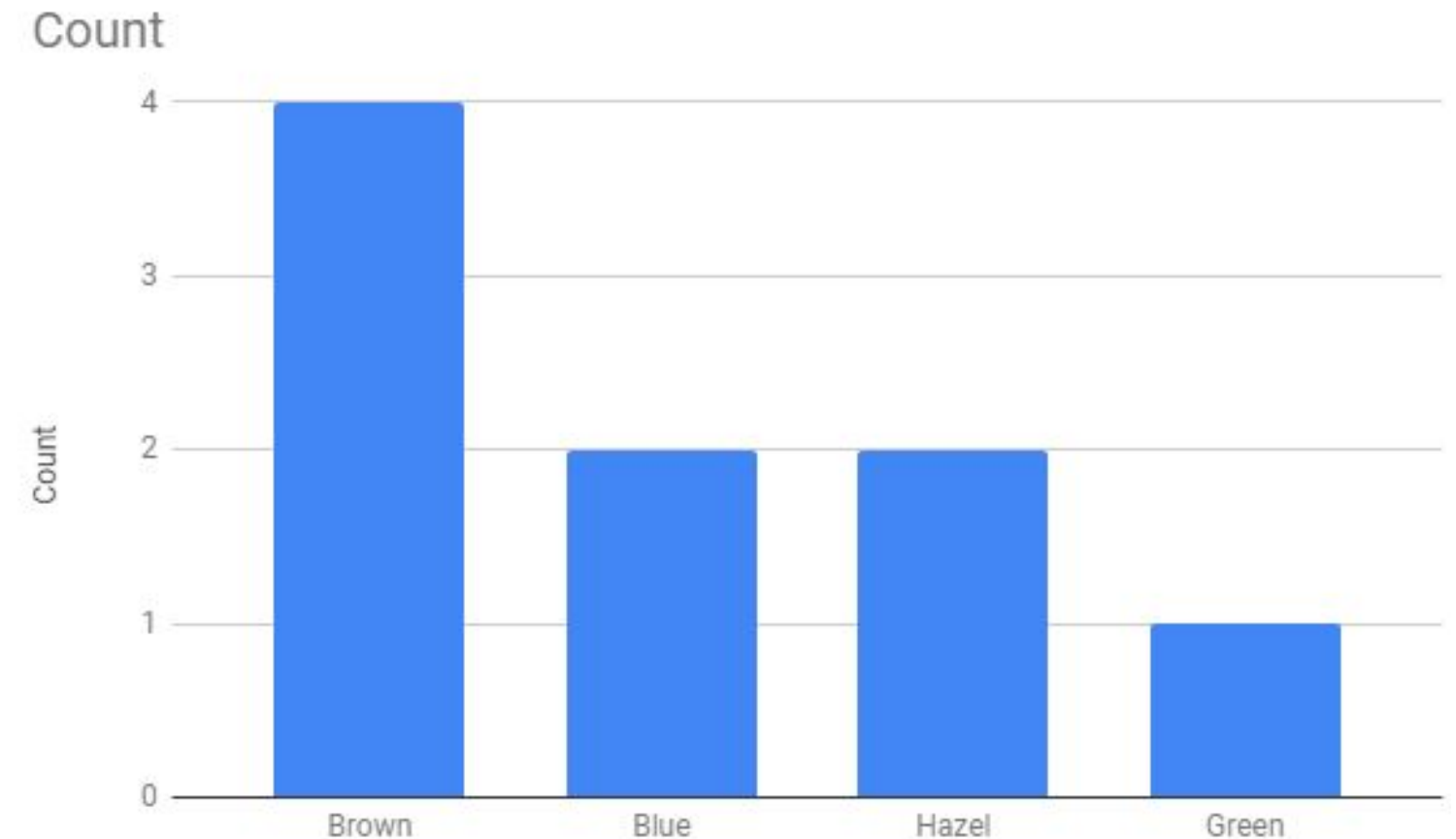
INTRODUCTION TO STATISTICS IN SPREADSHEETS



Ted Kwartler
Data Dude

How do you visualize non-numerics?

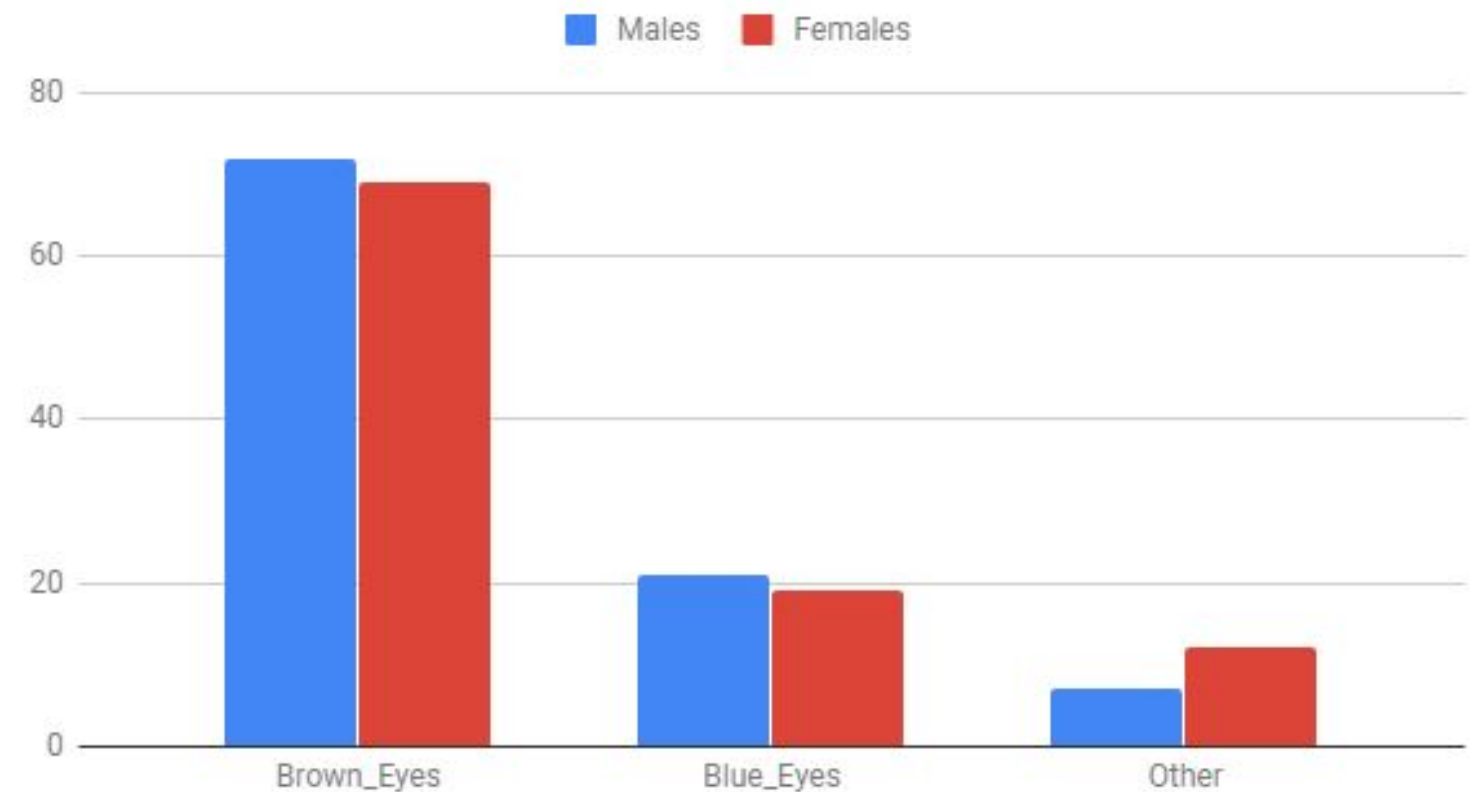
Brown
Brown
Brown
Brown
Blue
Blue
Hazel
Hazel
Green



Geeked Up Off Them Bars!!

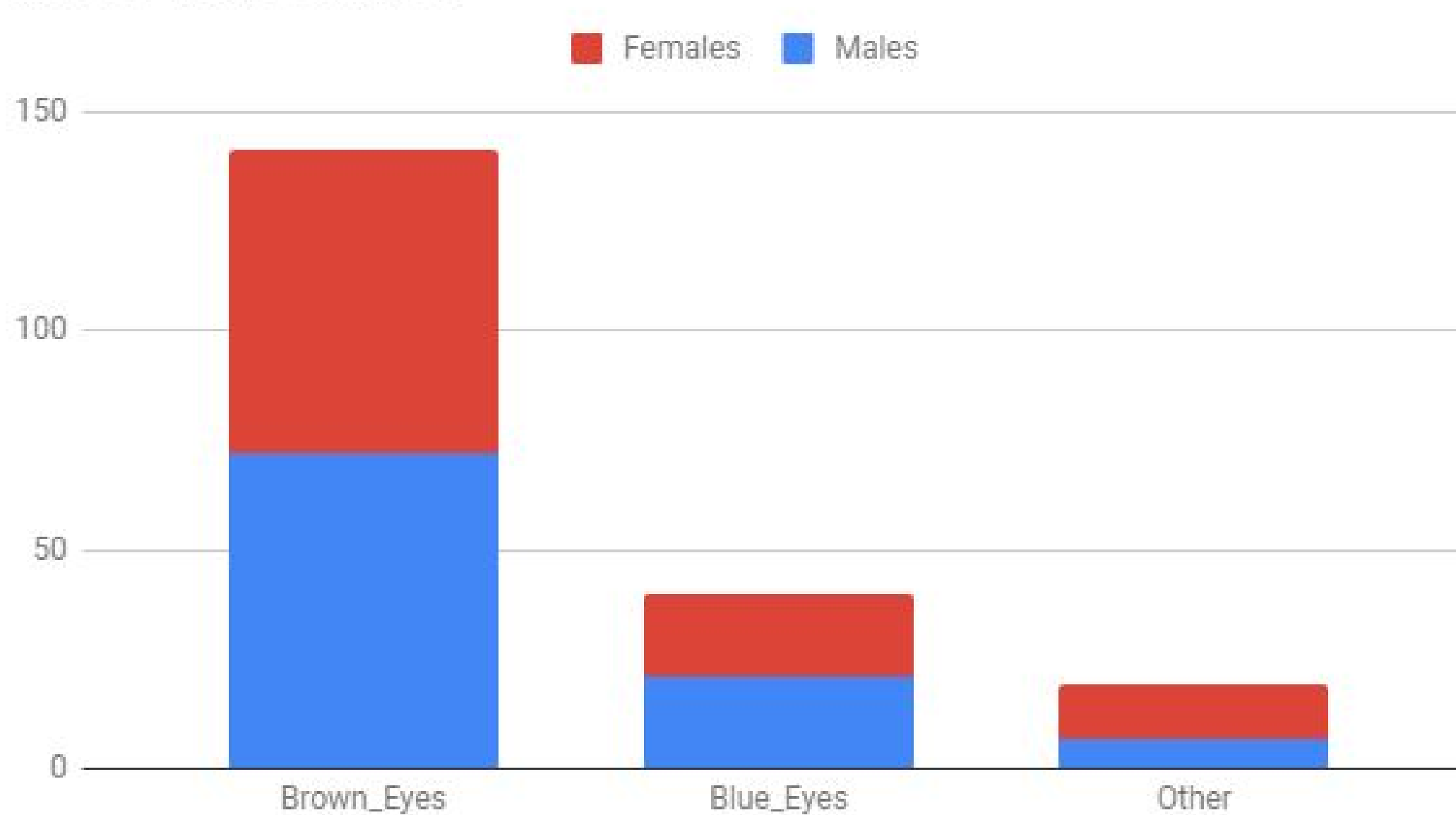
	Brown_Eyes	Blue_Eyes	Other
Males	72	21	7
Females	69	19	12

Males and Females



Still another way

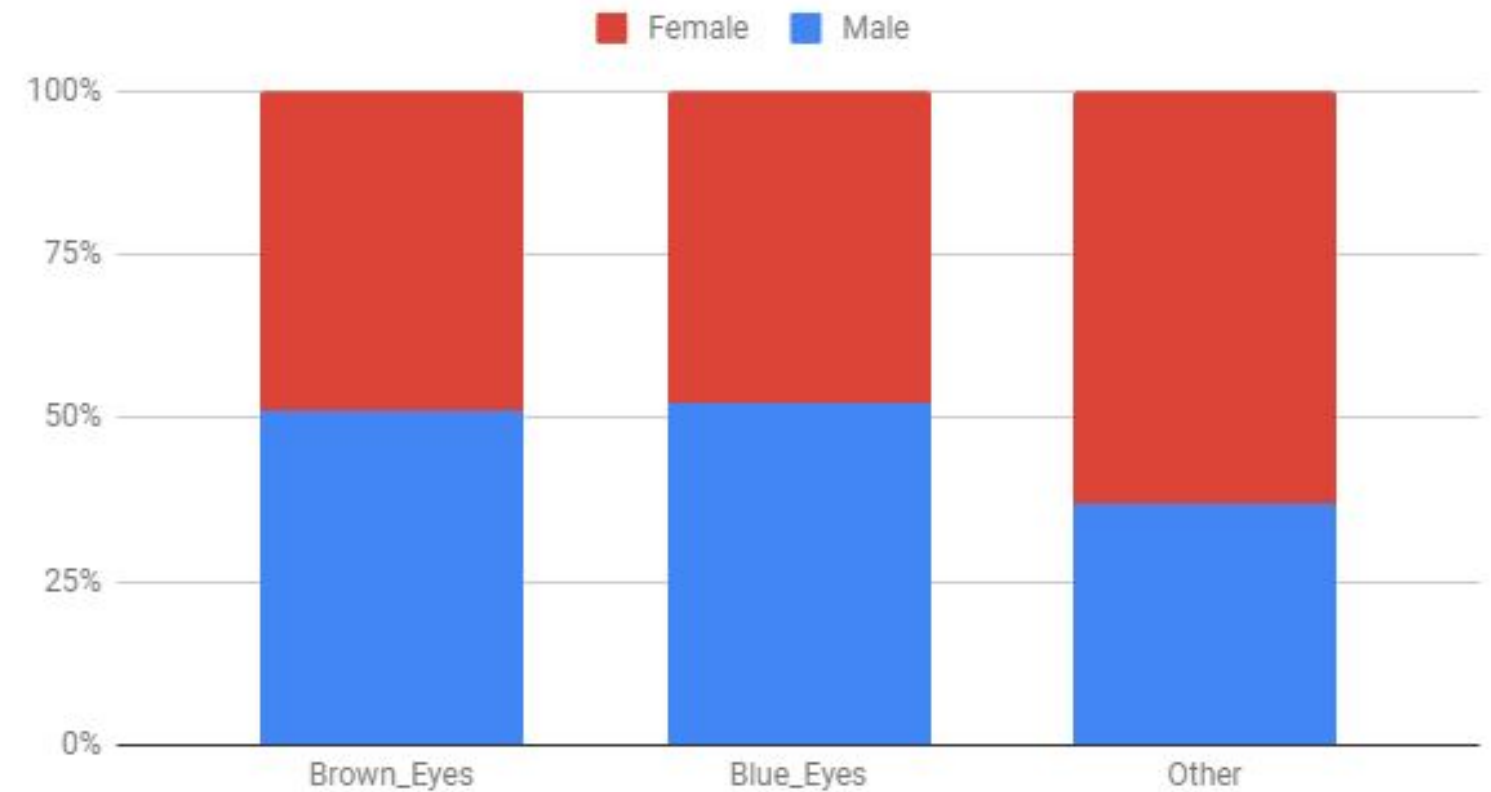
Males and Females



Proportional Stacked charts

	Brown_Eyes	Blue_Eyes	Other
Males	72	21	7
Females	69	19	12

Male and Female



Categories in an analysis

Category	Competitive.
SportingGoods	0
SportingGoods	1
SportingGoods	0
SportingGoods	1

...

Toys/Hobbies	1
Toys/Hobbies	1
Toys/Hobbies	1
Toys/Hobbies	0

Let's practice!

INTRODUCTION TO STATISTICS IN SPREADSHEETS