

Scatter plots

DATA VISUALIZATION FOR EVERYONE



Richie Cotton

Curriculum Architect at DataCamp

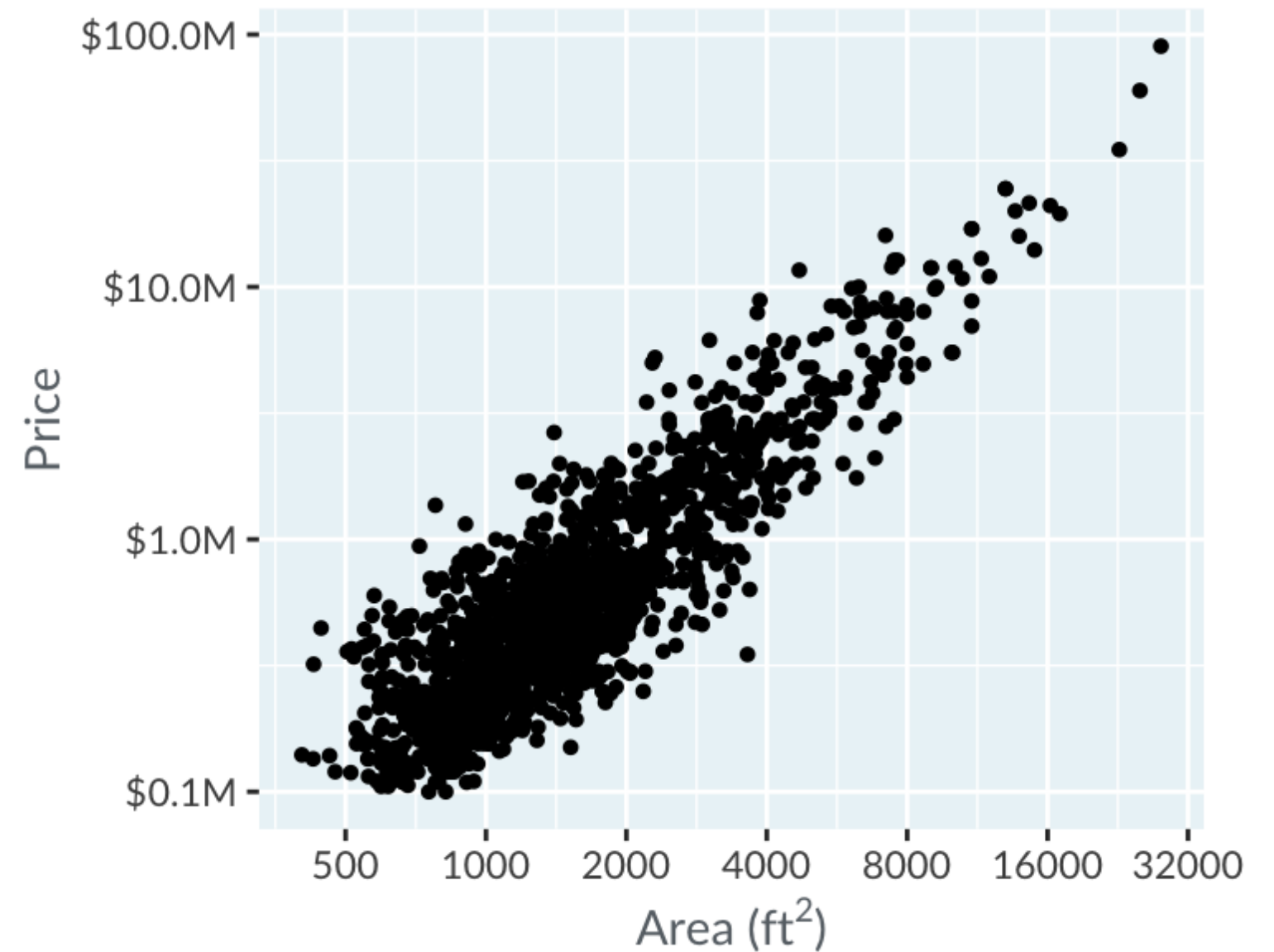
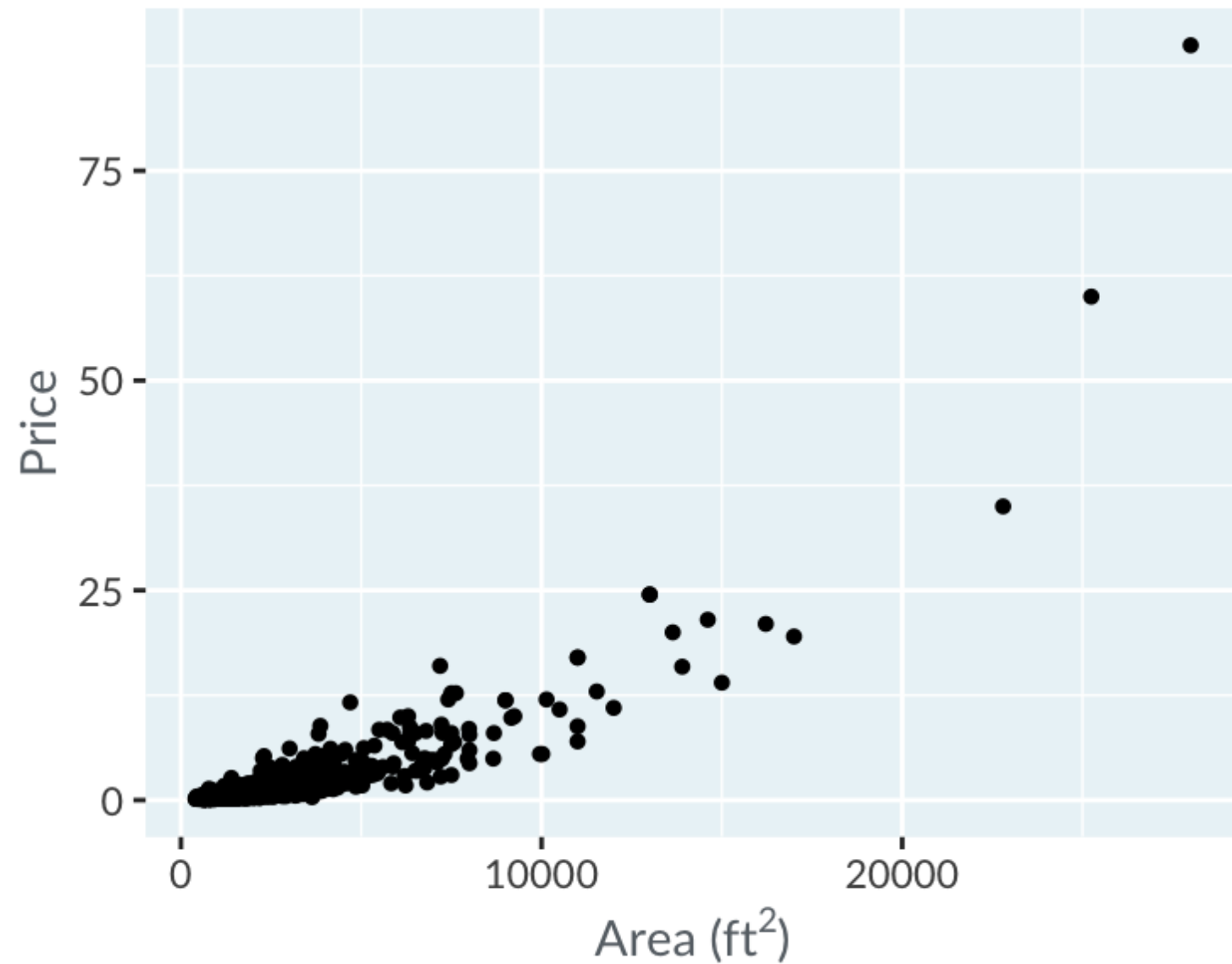
When should you use a scatter plot?

1. You have two continuous variables.
2. You want to answer questions about the relationship between the two variables.

Los Angeles County home prices

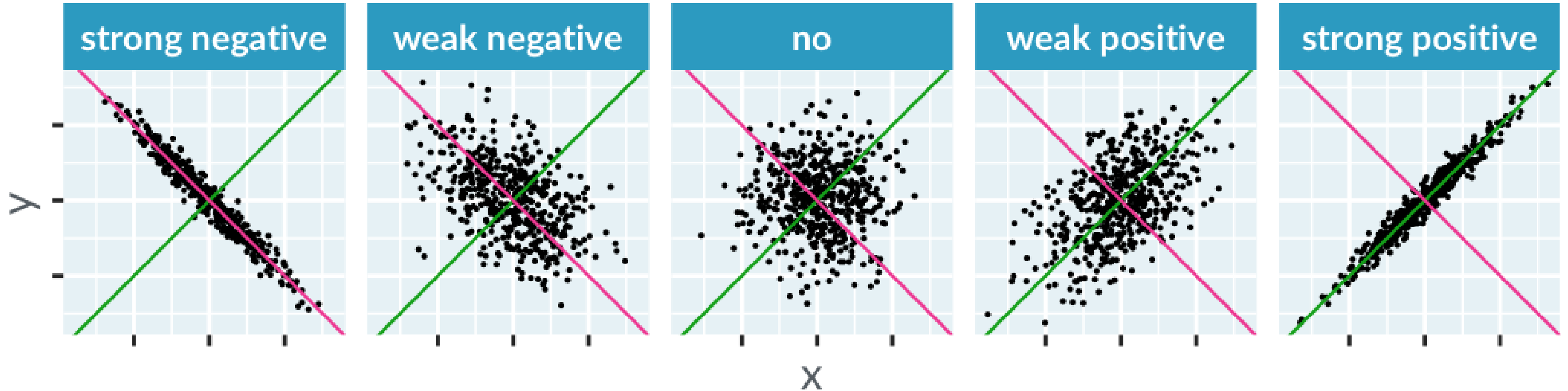
city	n_beds	price_musd	area_sqft
Long Beach	1	0.3250	846
Beverly Hills	3	2.1950	2930
Santa Monica	2	0.5740	1037
Santa Monica	1	0.5990	576
Beverly Hills	5	3.9500	5600
Long Beach	4	0.2999	1571
Westwood	3	0.6950	1913

Prices vs. area

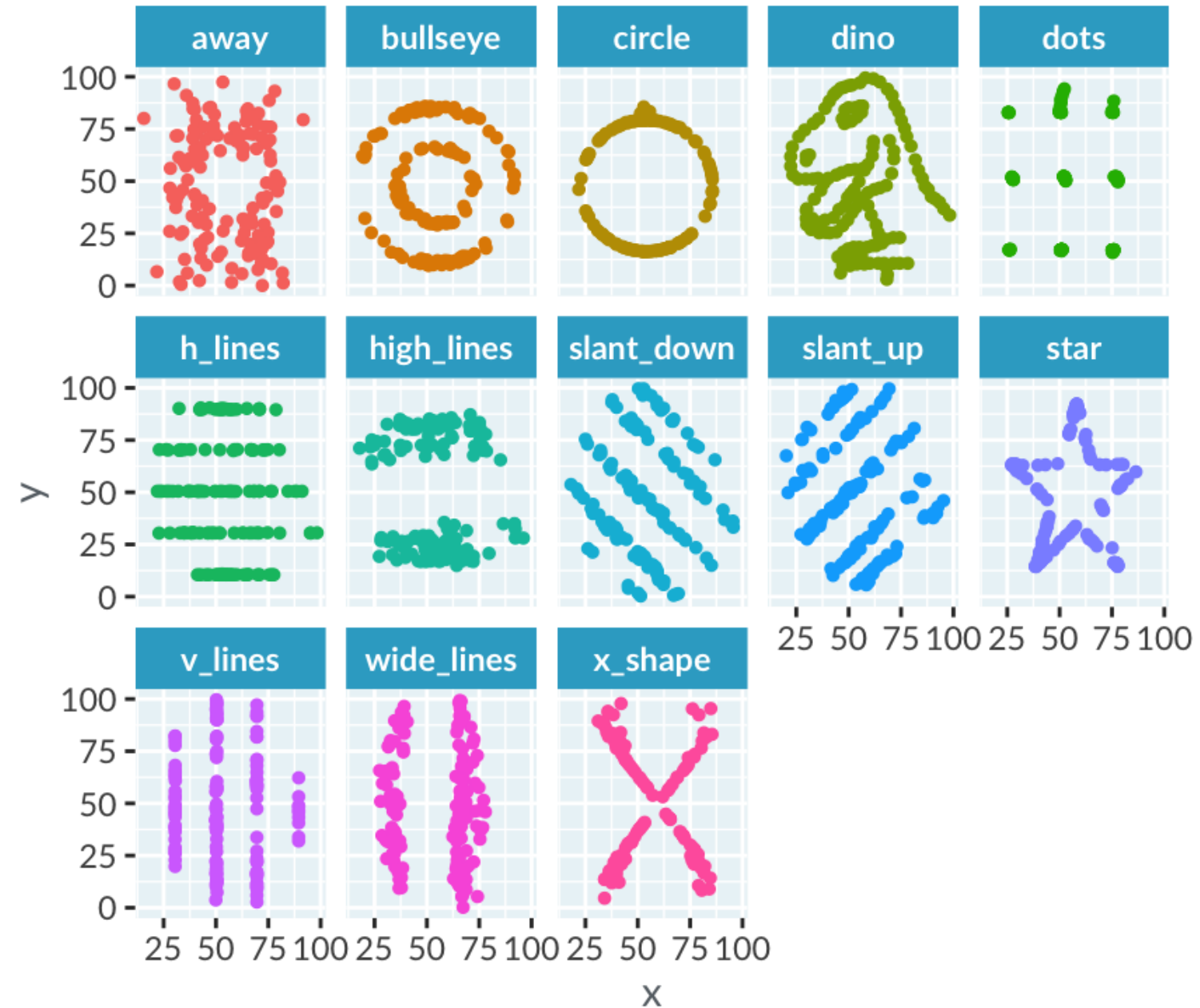


Correlation

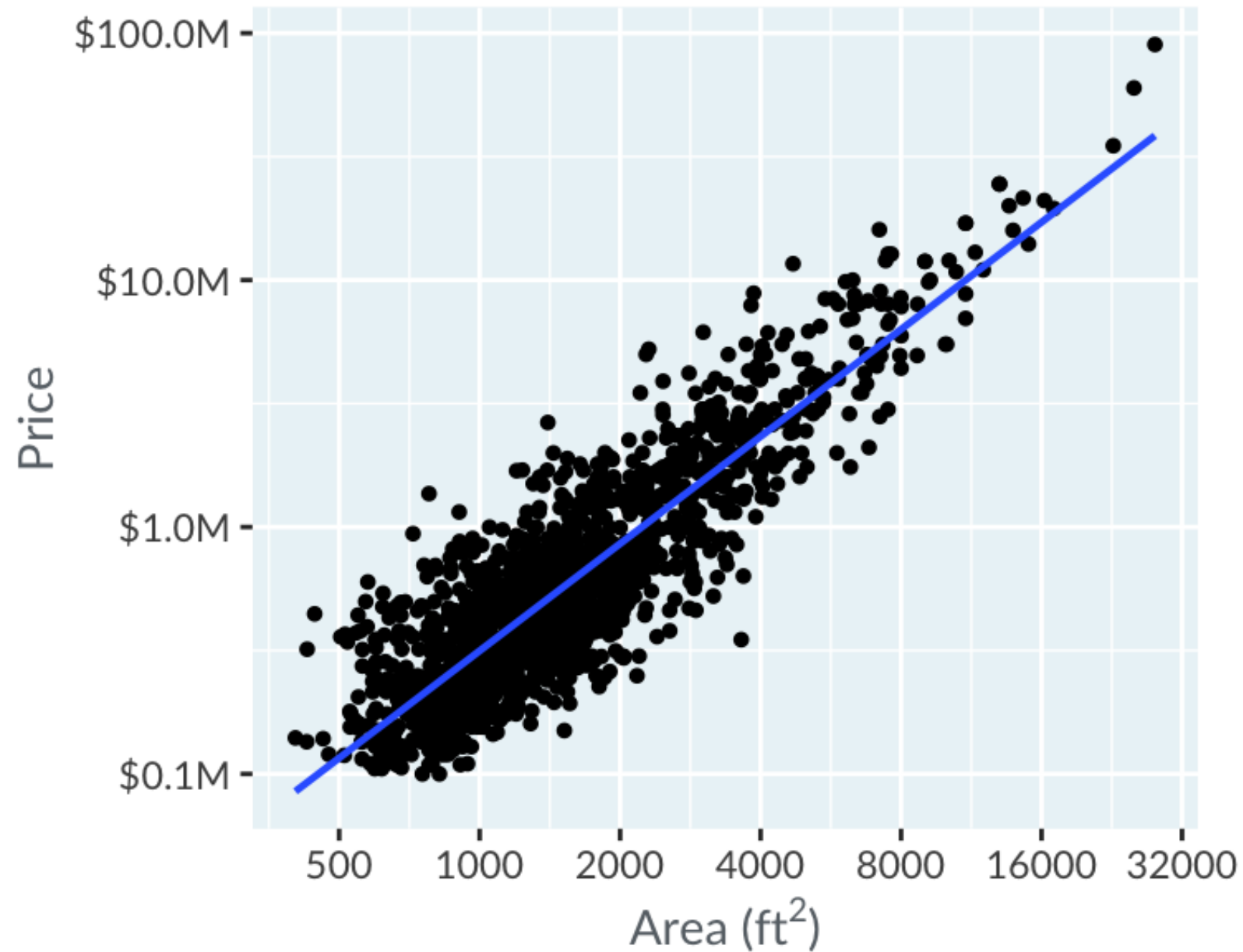
How close are you to being able to fit a straight line through the points?



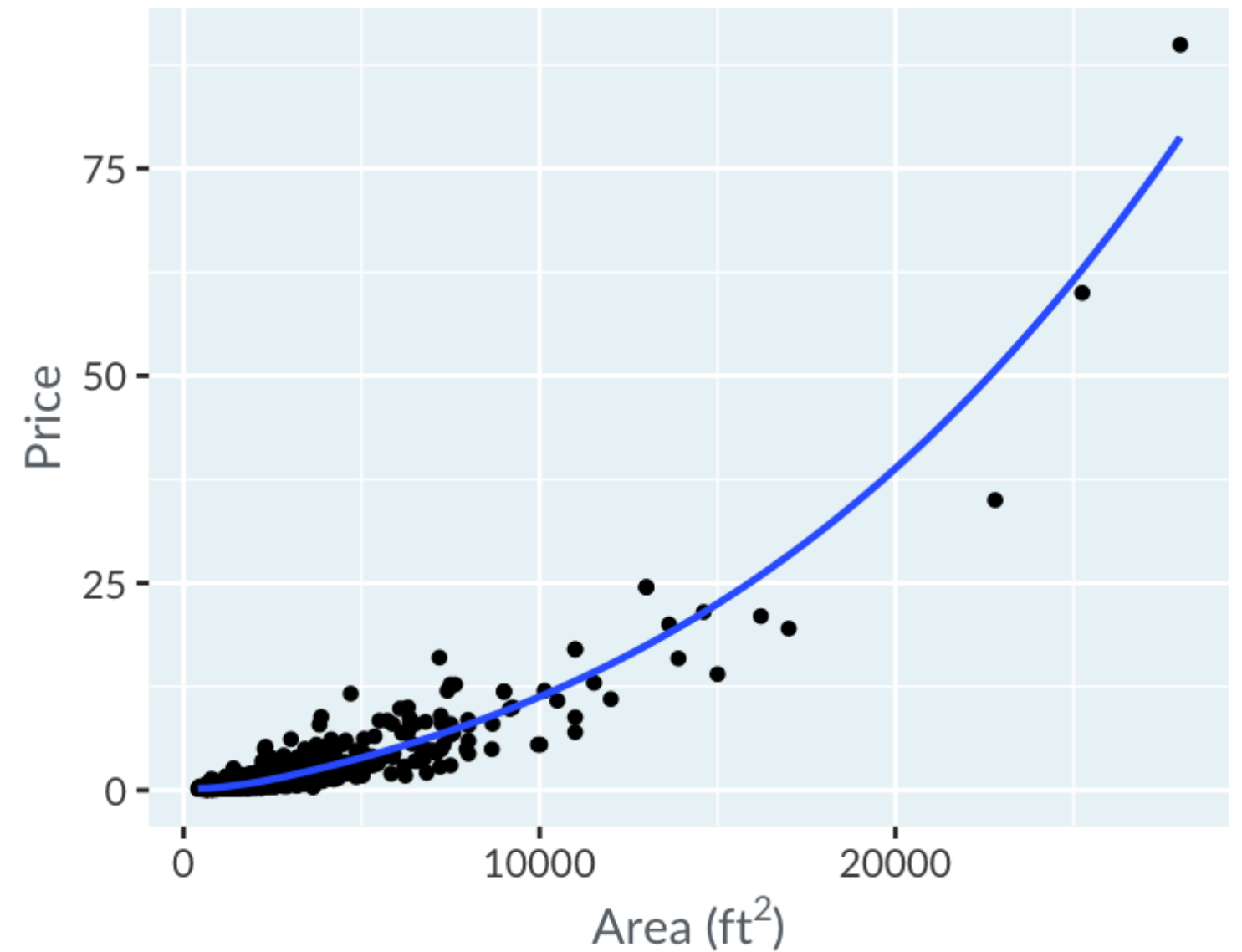
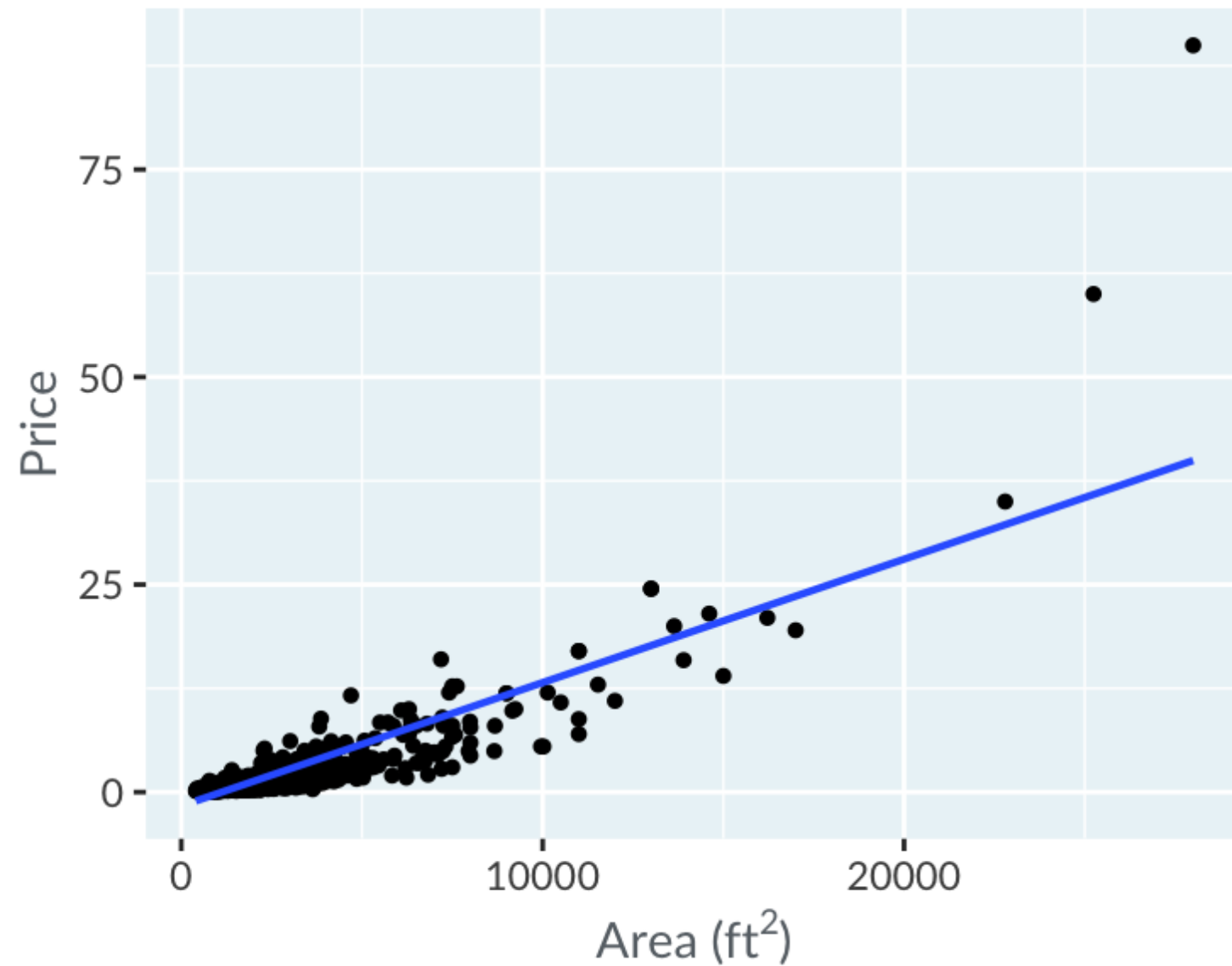
Sometimes correlation isn't helpful



Adding trend lines



Adding smooth trend lines



Let's practice!

DATA VISUALIZATION FOR EVERYONE

Line plots

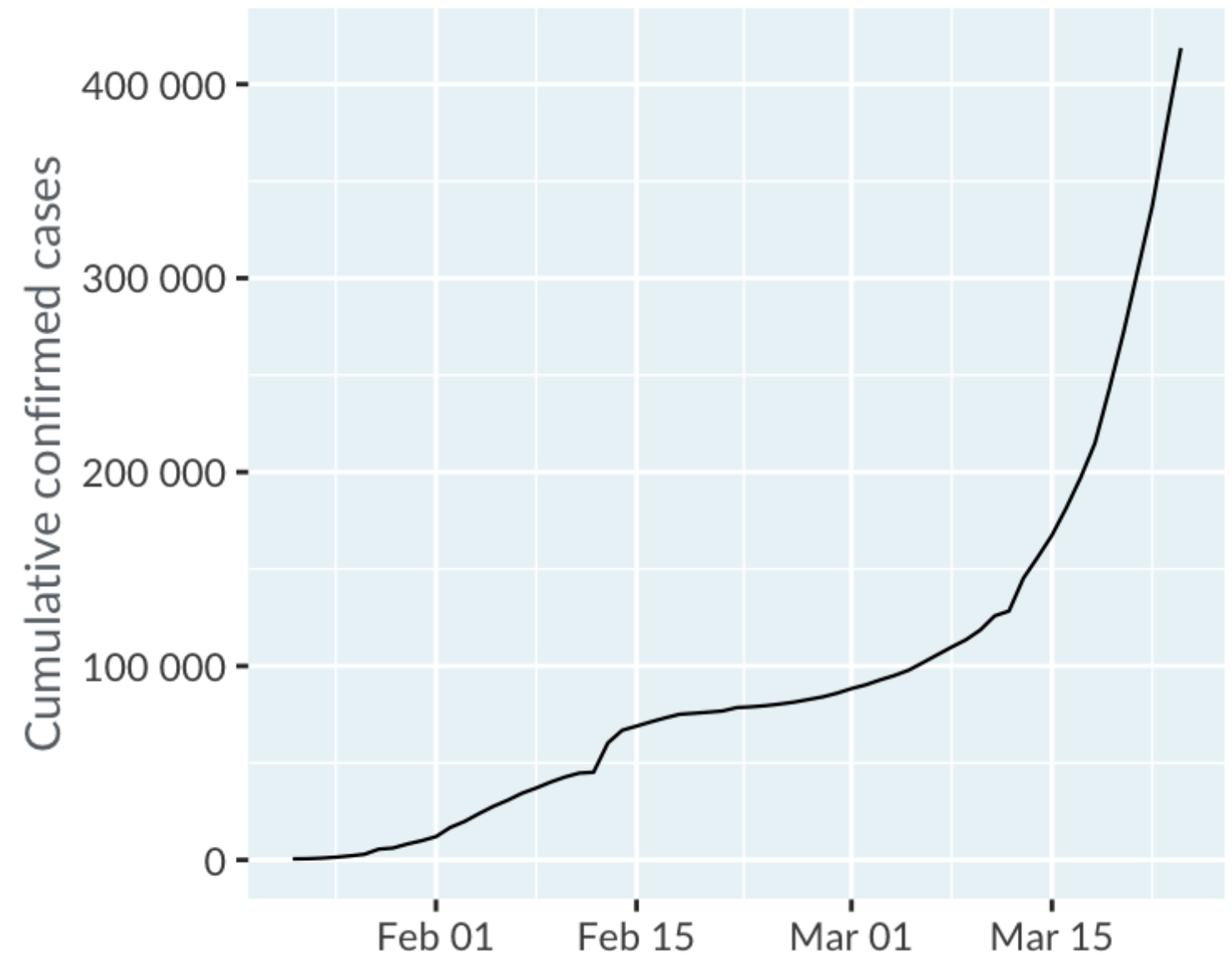
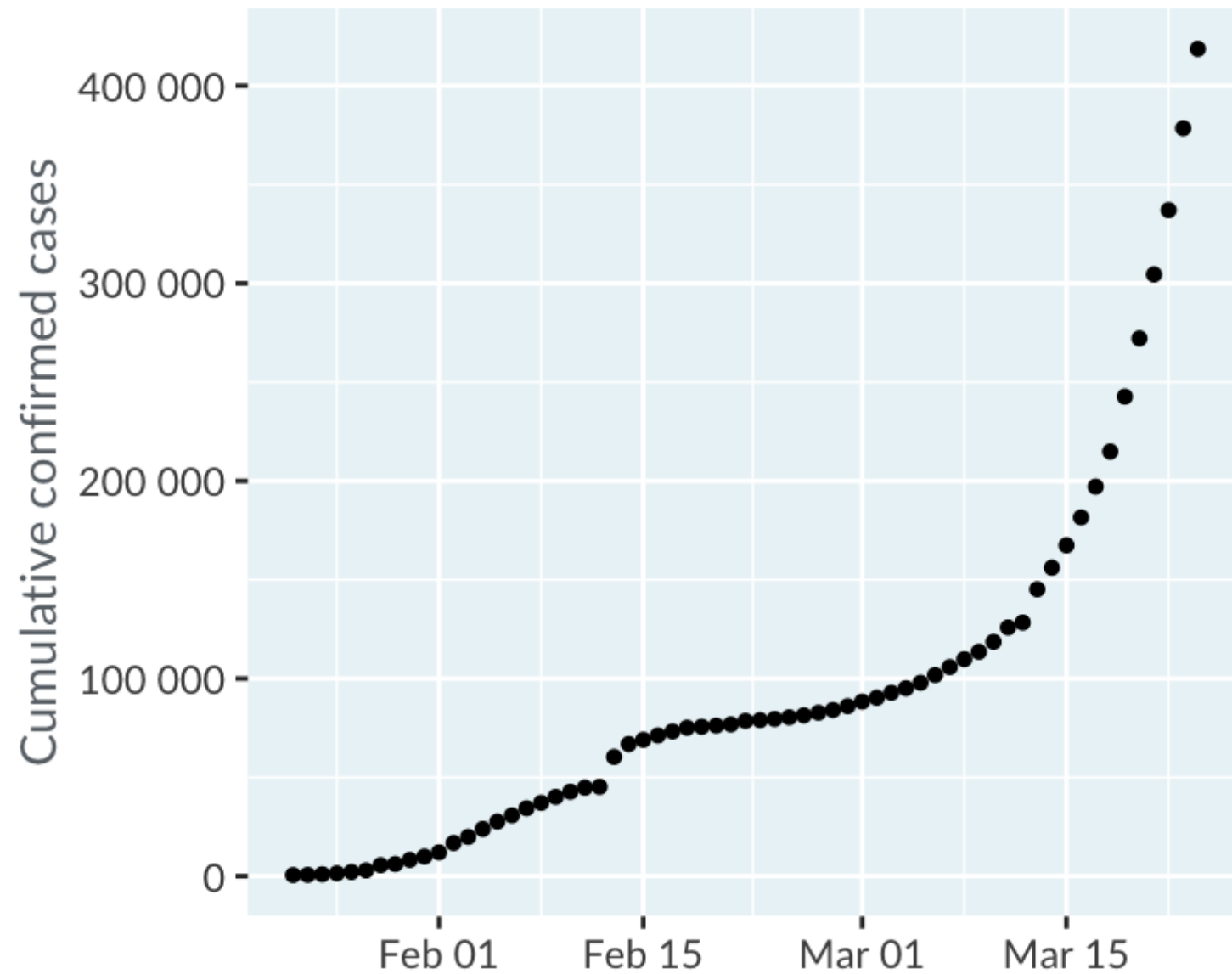
DATA VISUALIZATION FOR EVERYONE



Richie Cotton

Curriculum Architect at DataCamp

Worldwide COVID-19 coronavirus cases



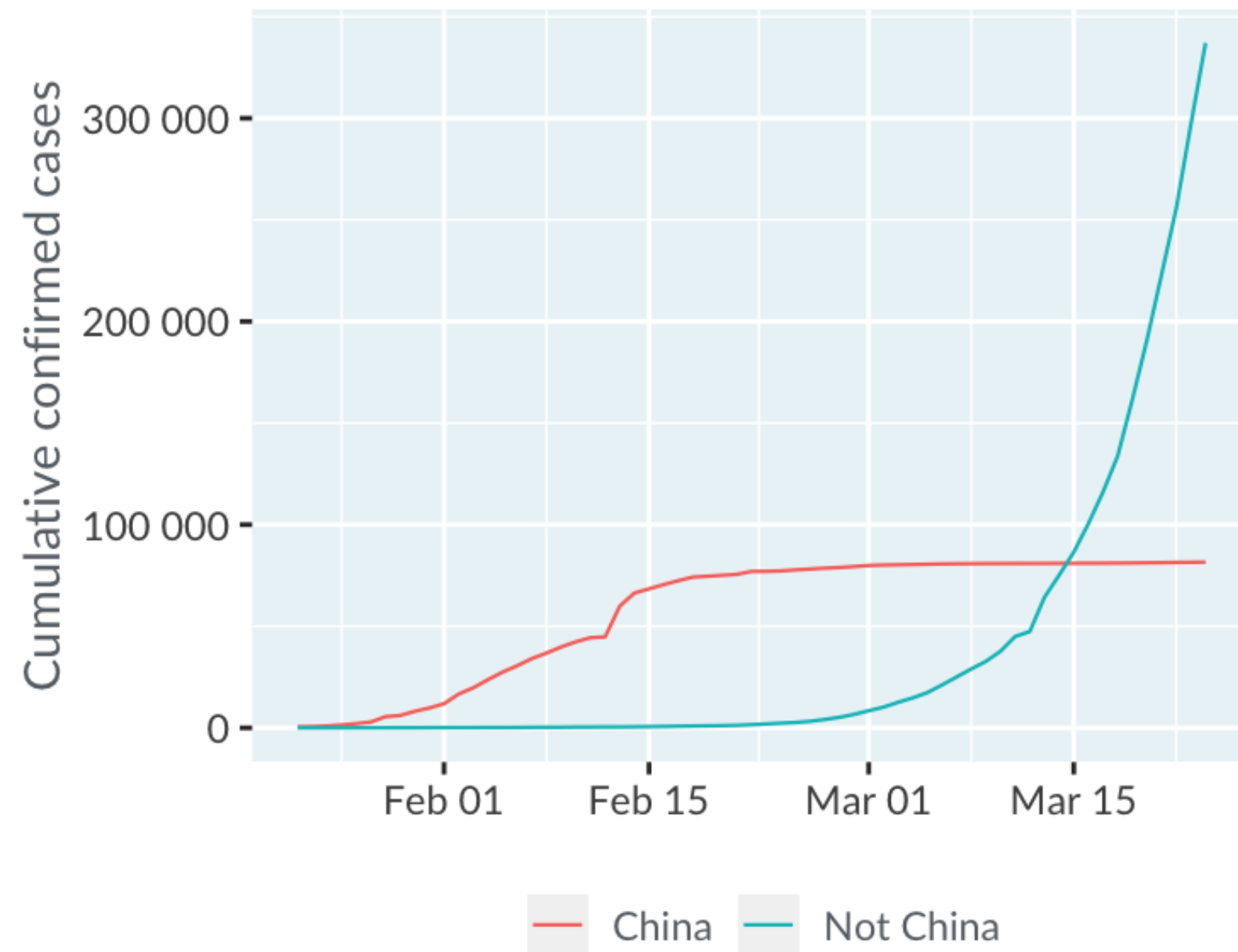
¹ <https://github.com/RamiKrispin/coronavirus>

When should you use a line plot?

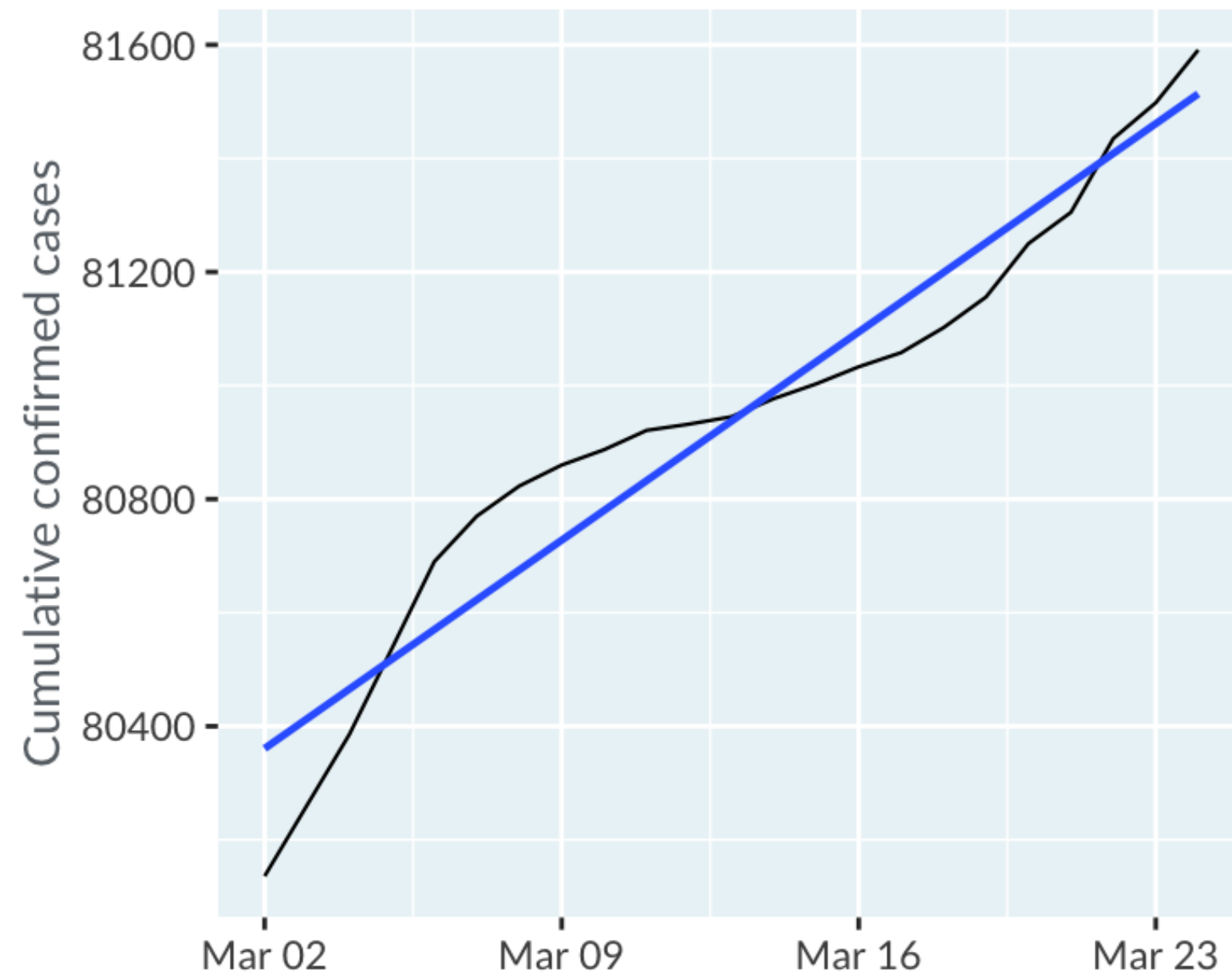
1. You have two continuous variables.
2. You want to answer questions about their relationship.
3. Consecutive observations are connected somehow.

Usually, but not always, the x-axis is dates or times.

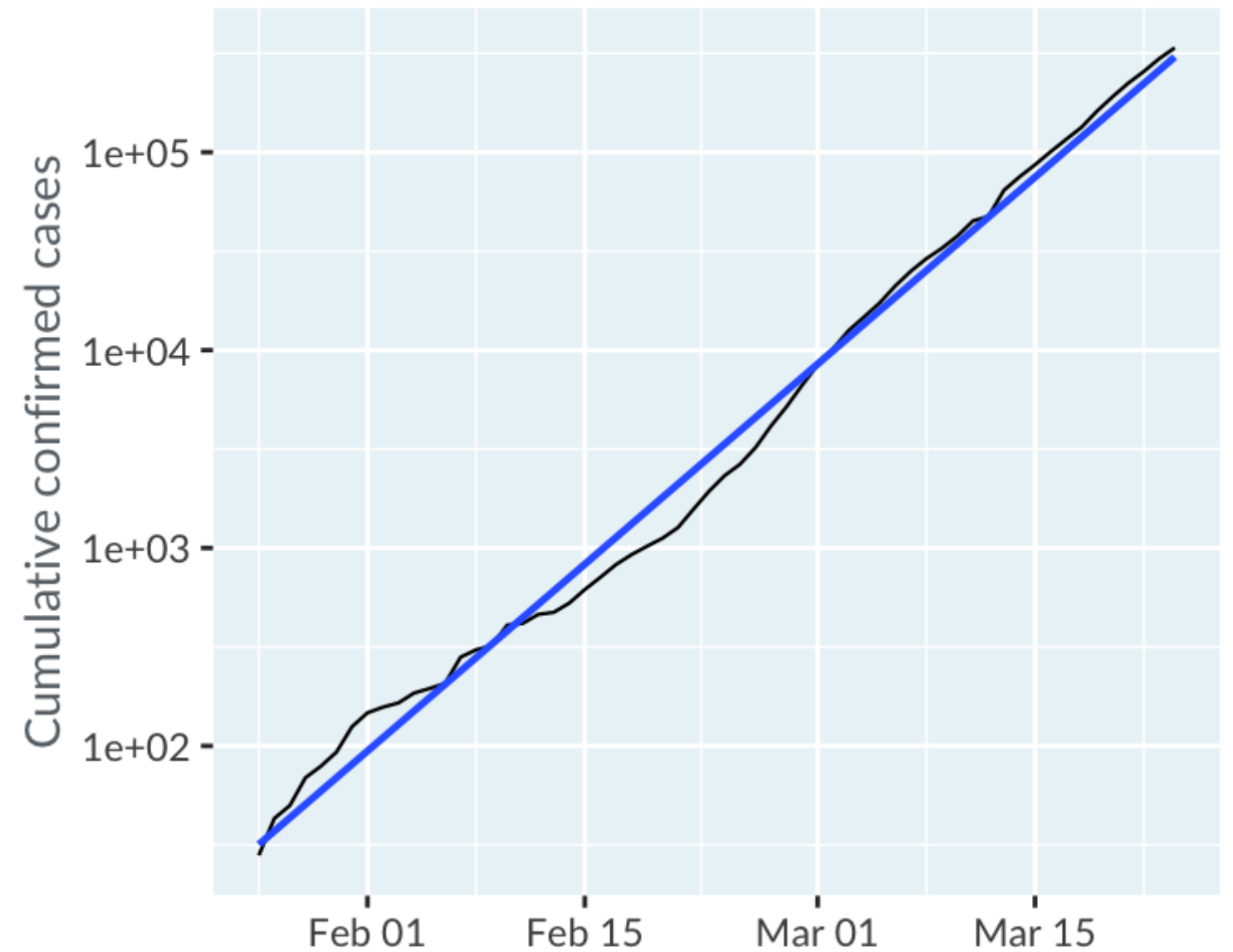
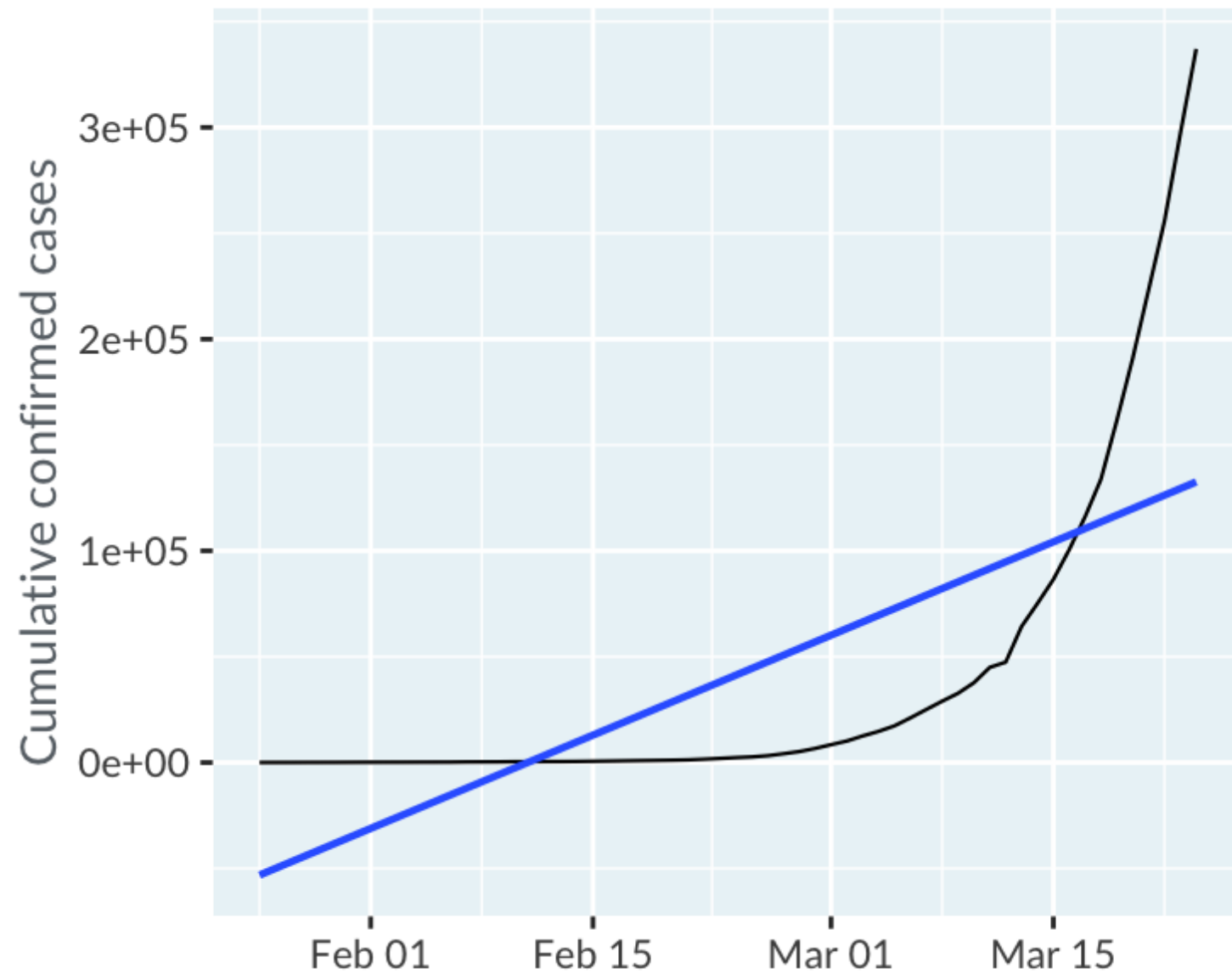
Comparing multiple lines



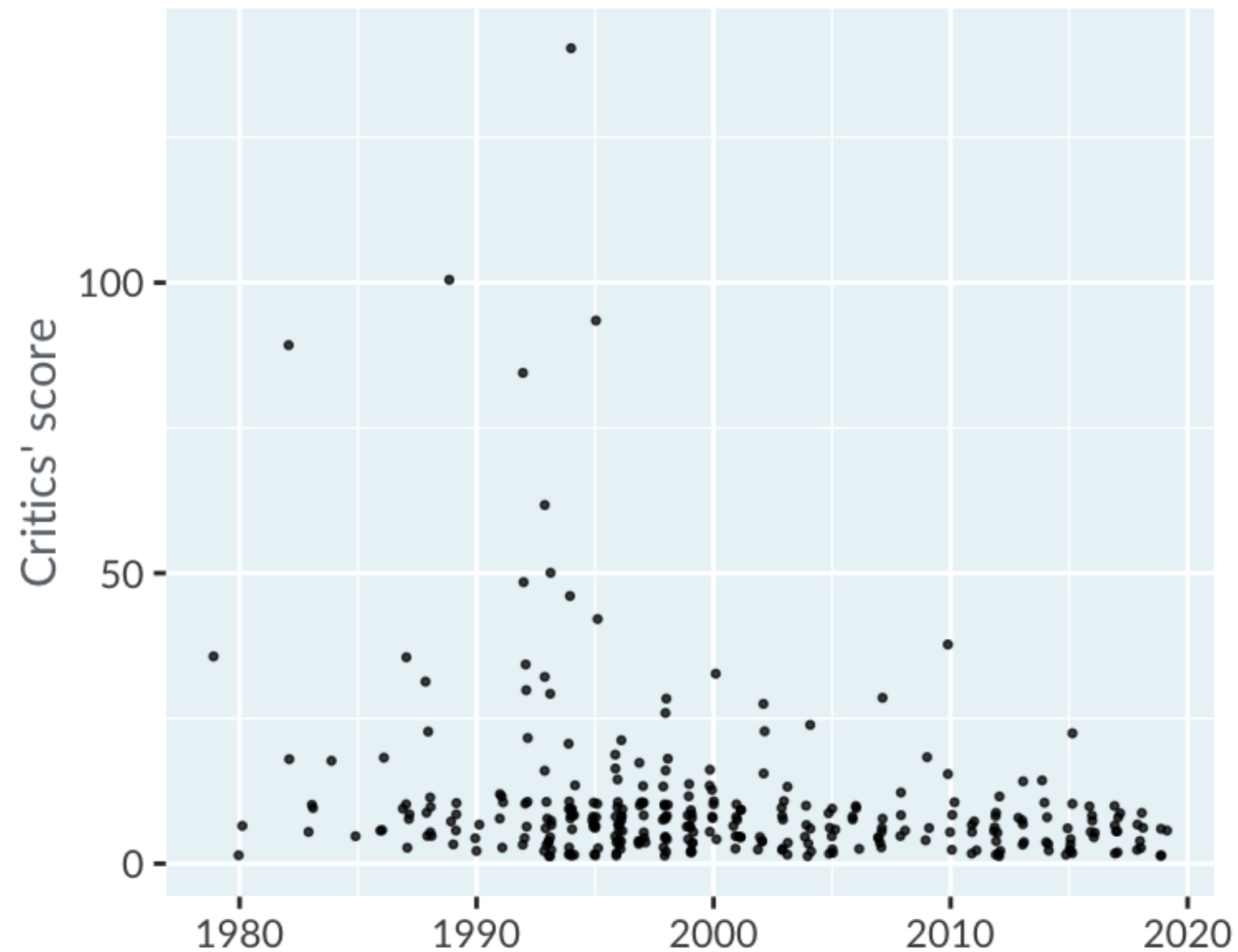
Trend lines



Trend lines + log scale

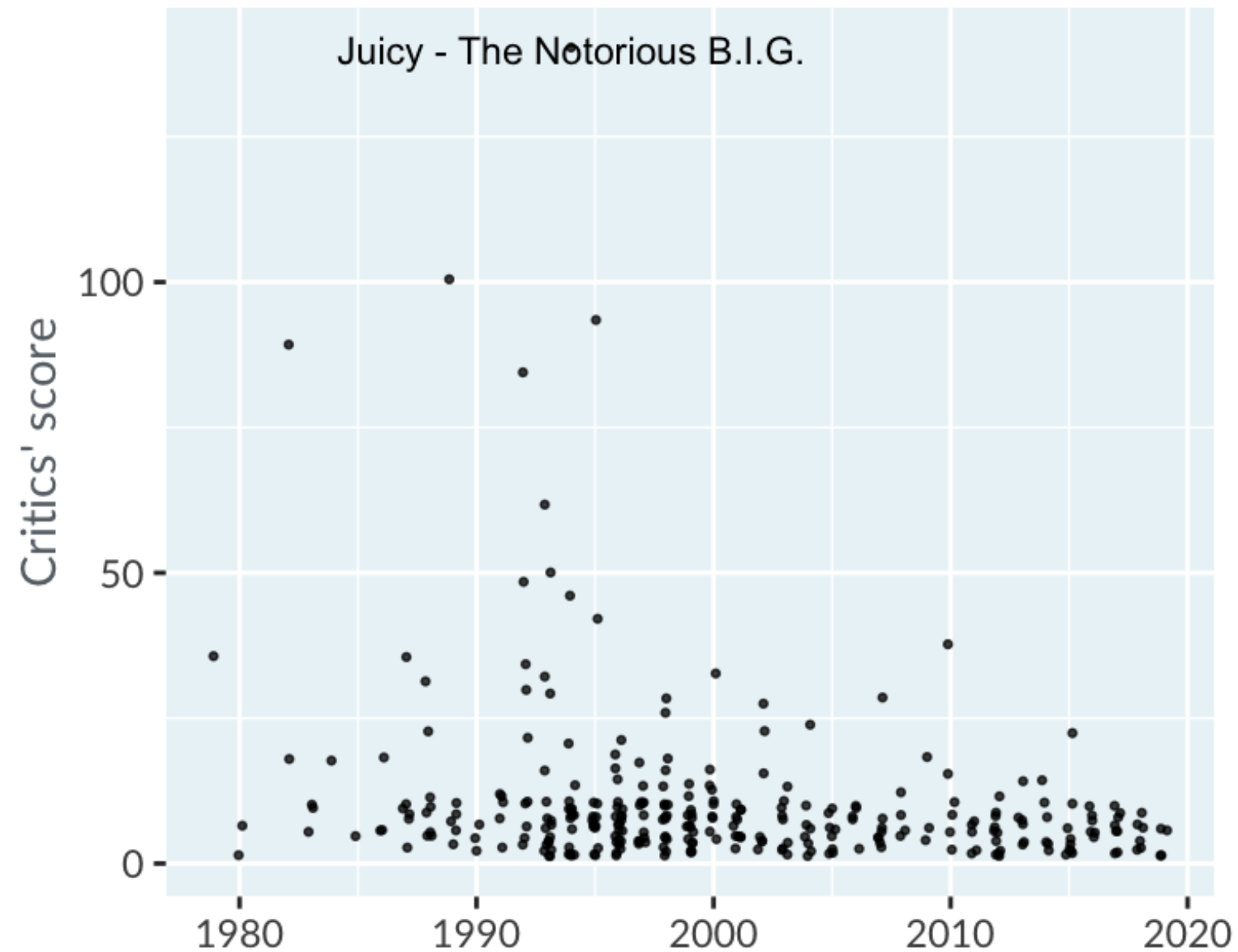


Time x-axis doesn't always imply line plot



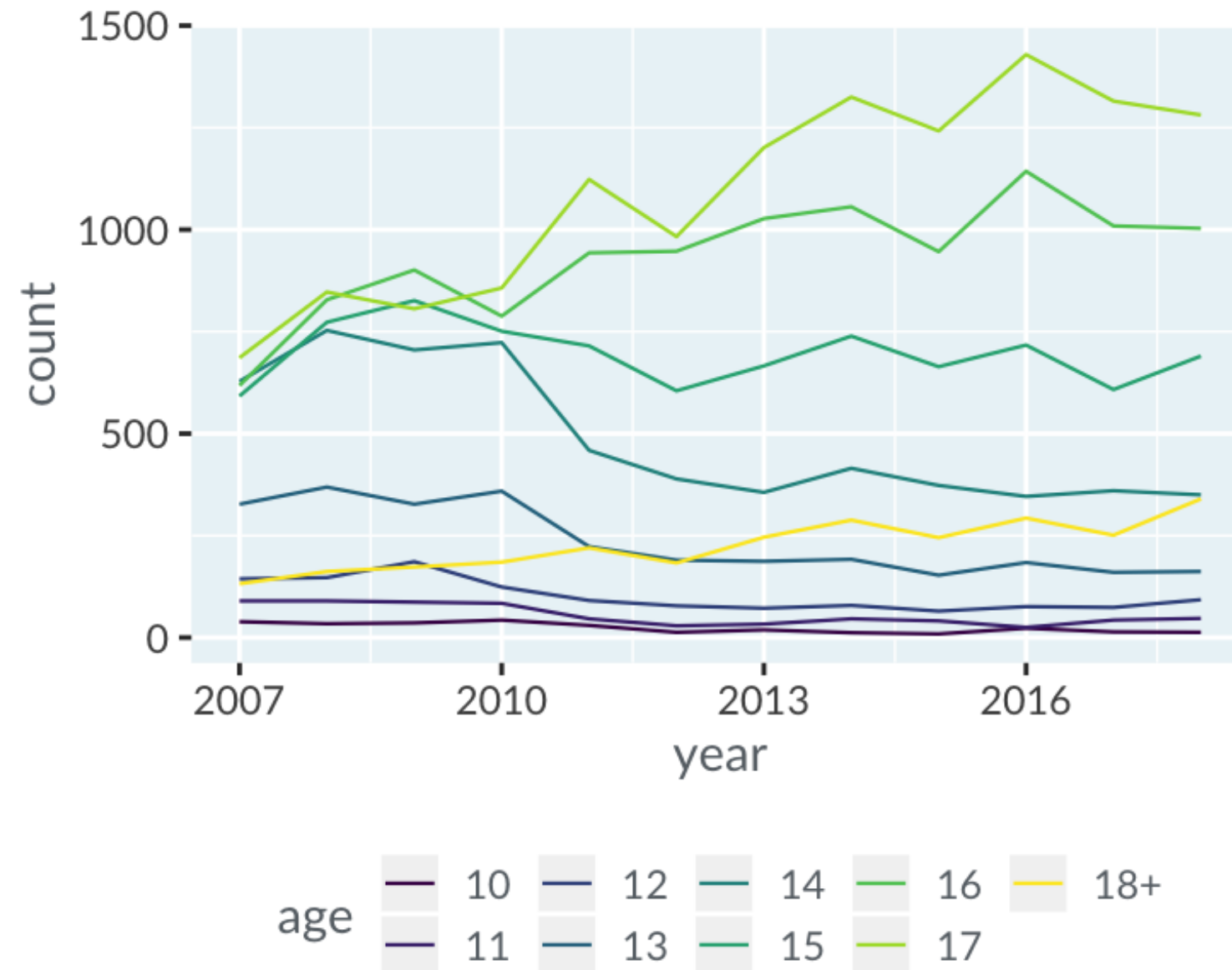
¹ <https://blog.datawrapperr.de/best-hip-hop-songs-of-all-time-visualized>

Time x-axis doesn't always imply line plot



¹ <https://blog.datawrapperr.de/best-hip-hop-songs-of-all-time-visualized>

Time x-axis doesn't always imply line plot



¹ <https://opendata.swiss/en/dataset/statistik-der-jugendstrafrechtspflege-des-kantons-zuerich/resource/41430d20-d449-4a9b-bf91-3f9a16c9f229>

Let's practice!

DATA VISUALIZATION FOR EVERYONE

Bar plots

DATA VISUALIZATION FOR EVERYONE



Richie Cotton

Curriculum Architect at DataCamp

When should you use a bar plot?

Most common cases:

1. You have a categorical variable.
2. You want counts or percentages for each category.

Occasionally:

1. You want another numeric score for each category, and need to include zero in the plot.

When will I, will I be famous?
I can't answer, I can't answer that

Bros – "When will I be famous?"

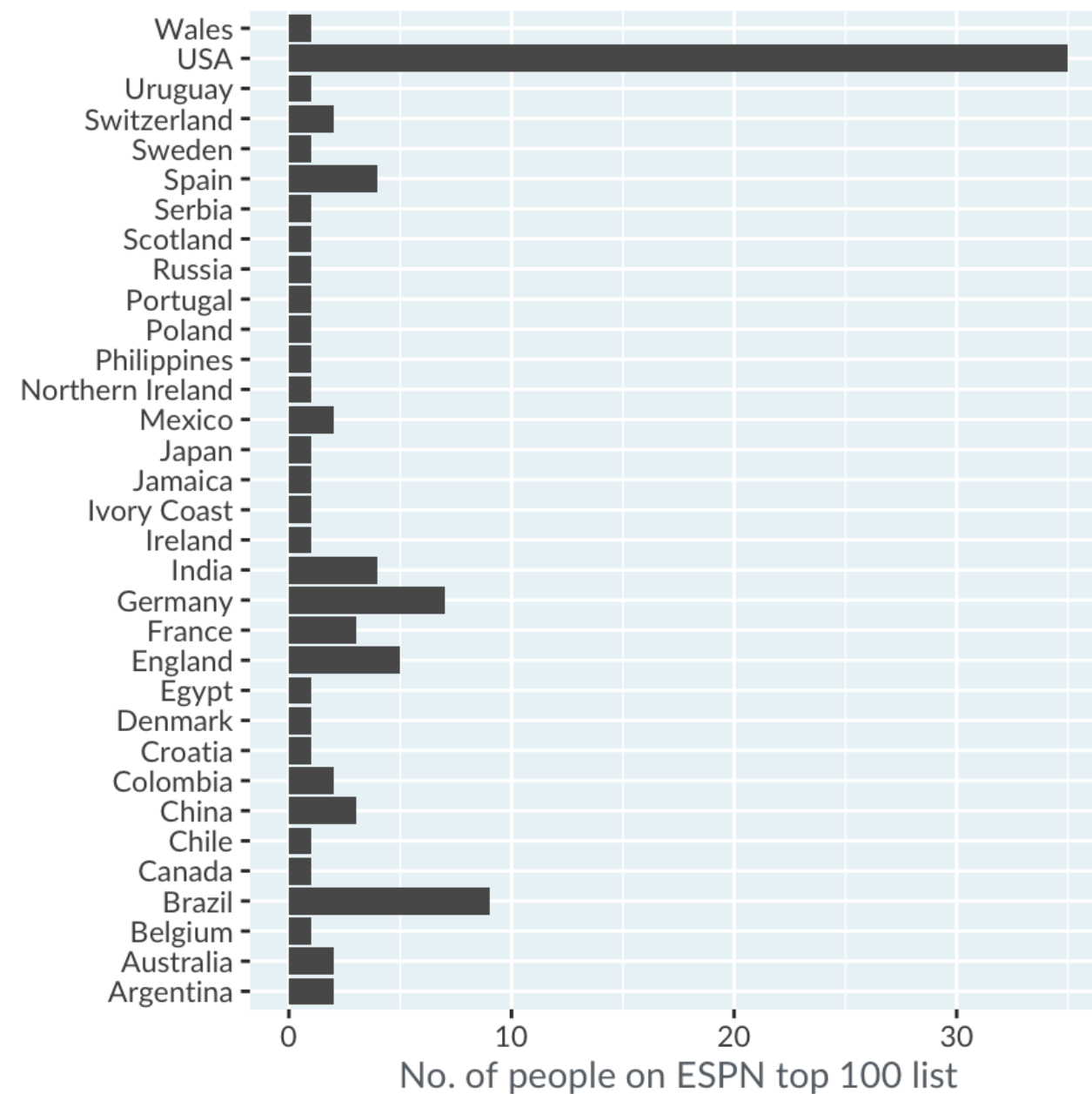


ESPN 100 most famous athletes from 2017

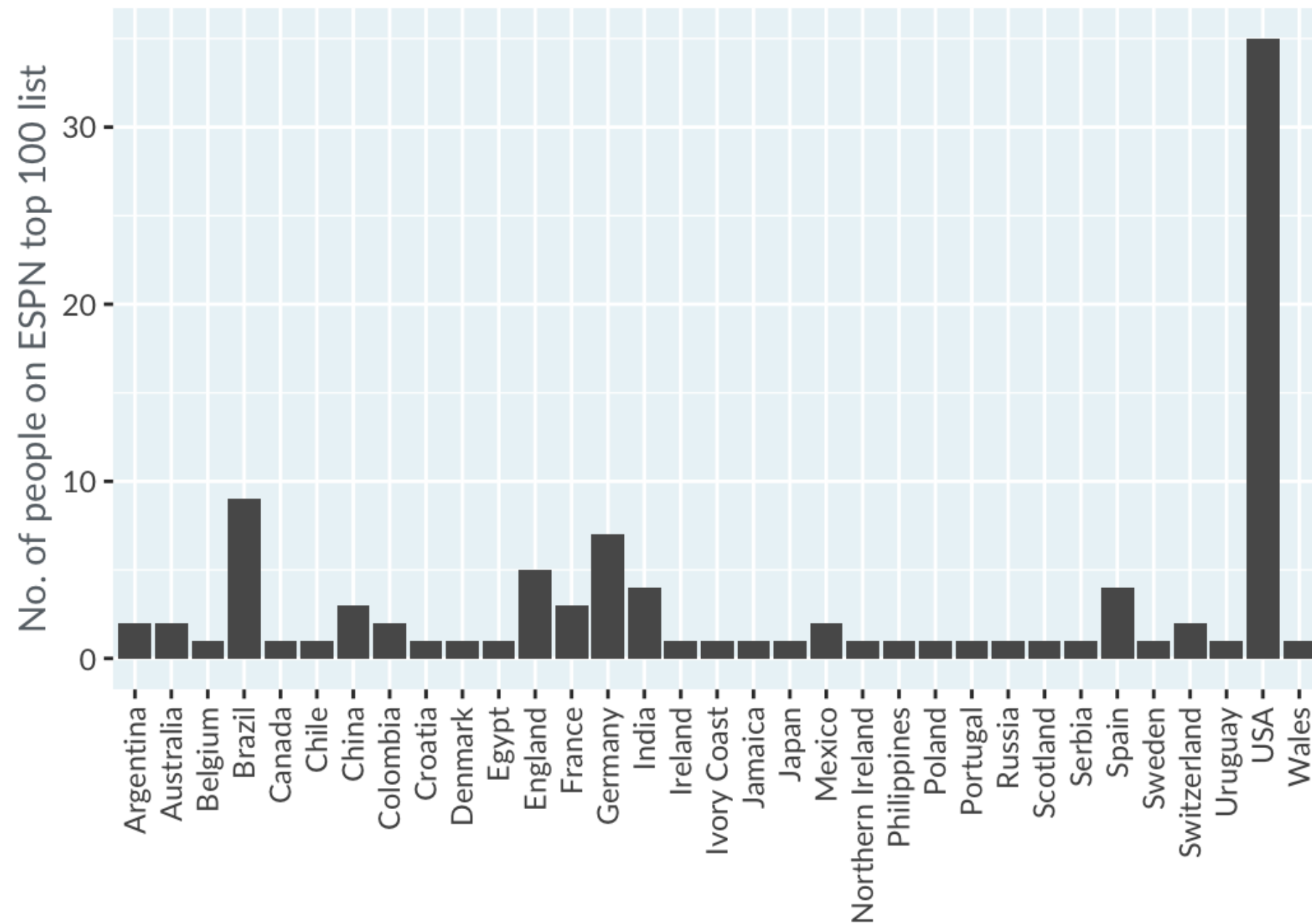
Rank	Last Name	First Name	Sport	Country
1	Ronaldo	Cristiano	Soccer	Portugal
2	James	LeBron	Basketball	USA
3	Messi	Lionel	Soccer	Argentina
4	Federer	Roger	Tennis	Switzerland
5	Mickelson	Phil	Golf	USA
...

¹ <https://data.world/wesmagee/2017-espn-world-fame-100>

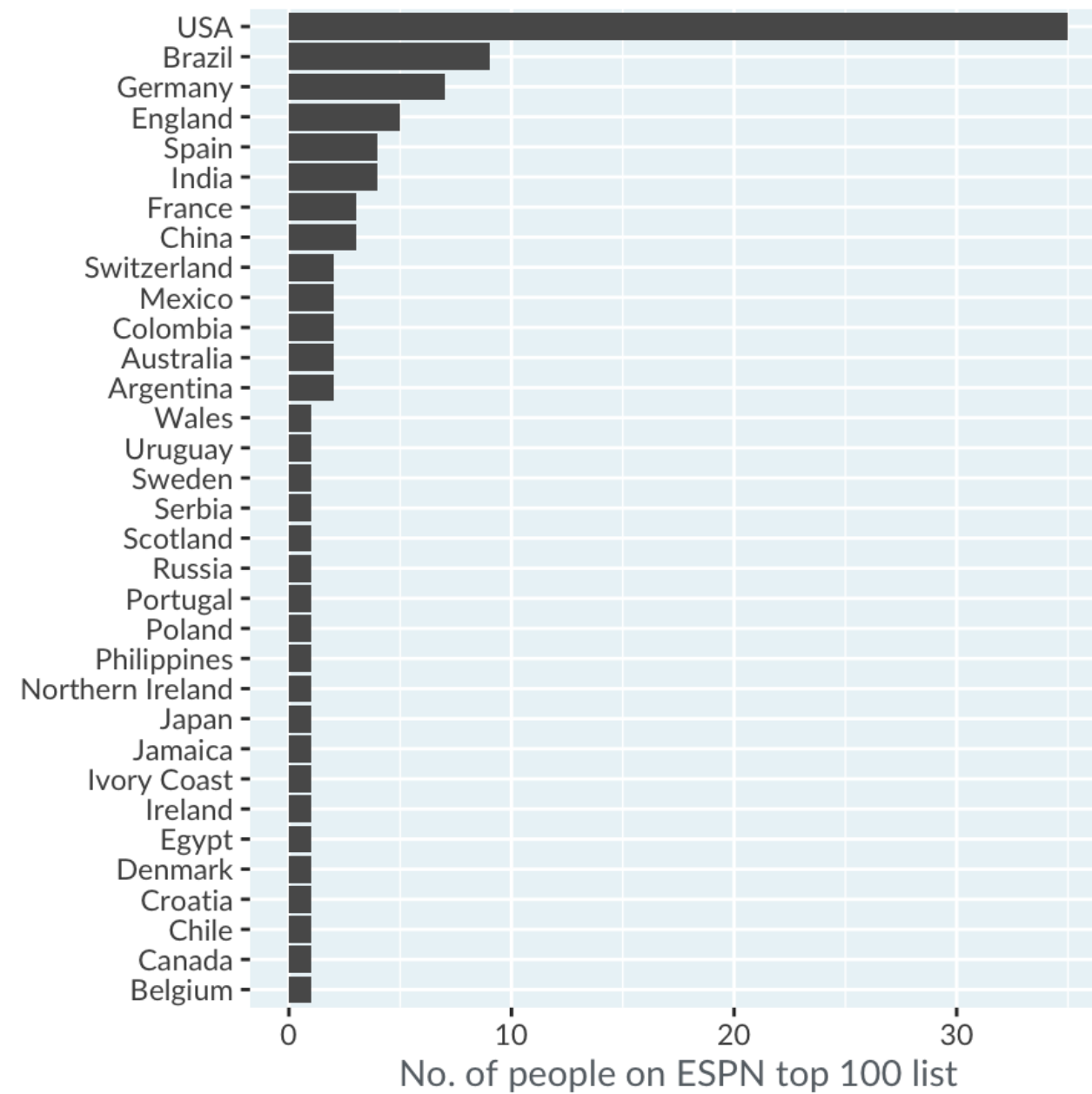
Bar plot of counts by country



Vertical bars



Sorting by count

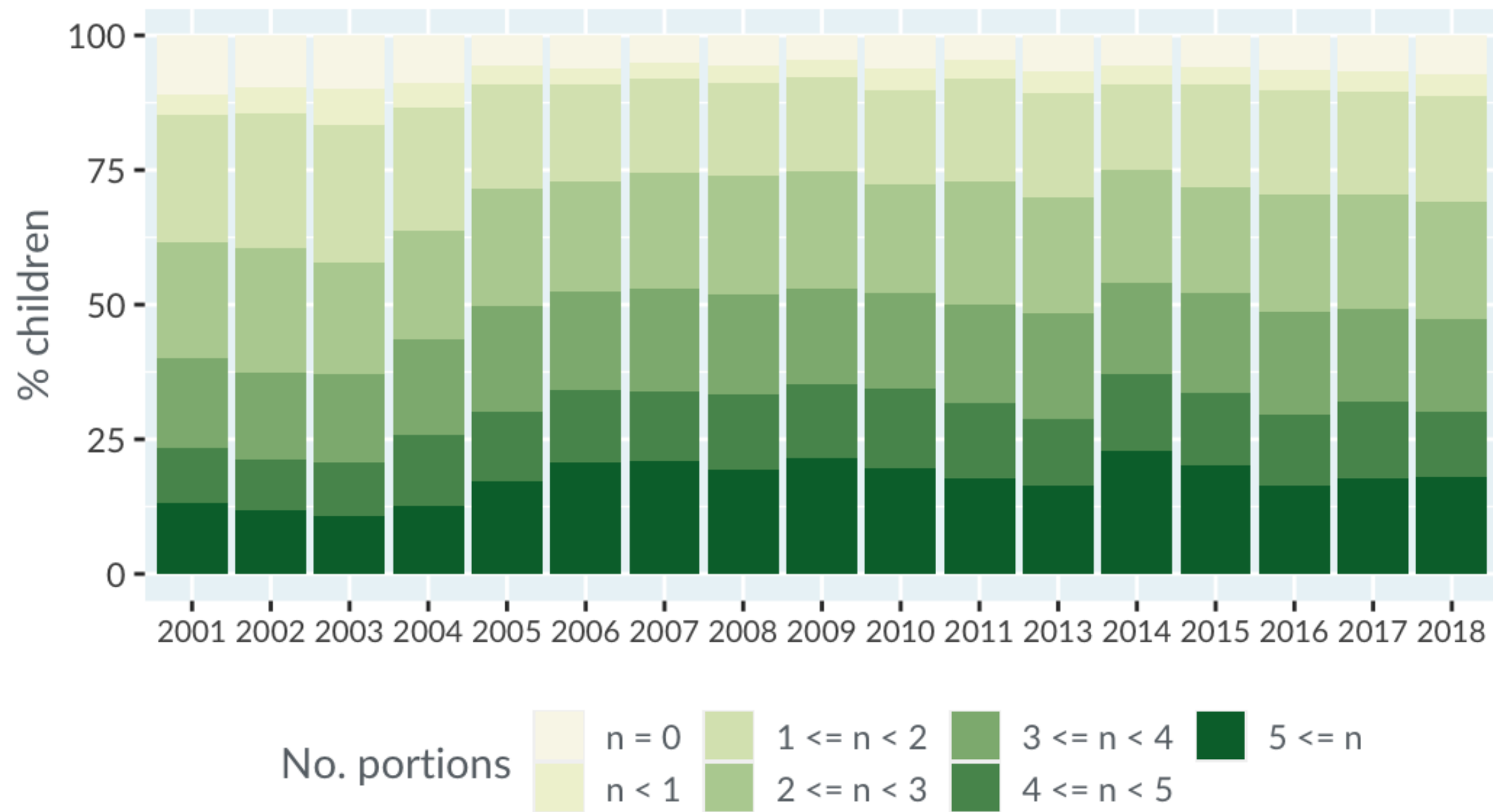


Children's fruit and veg consumption

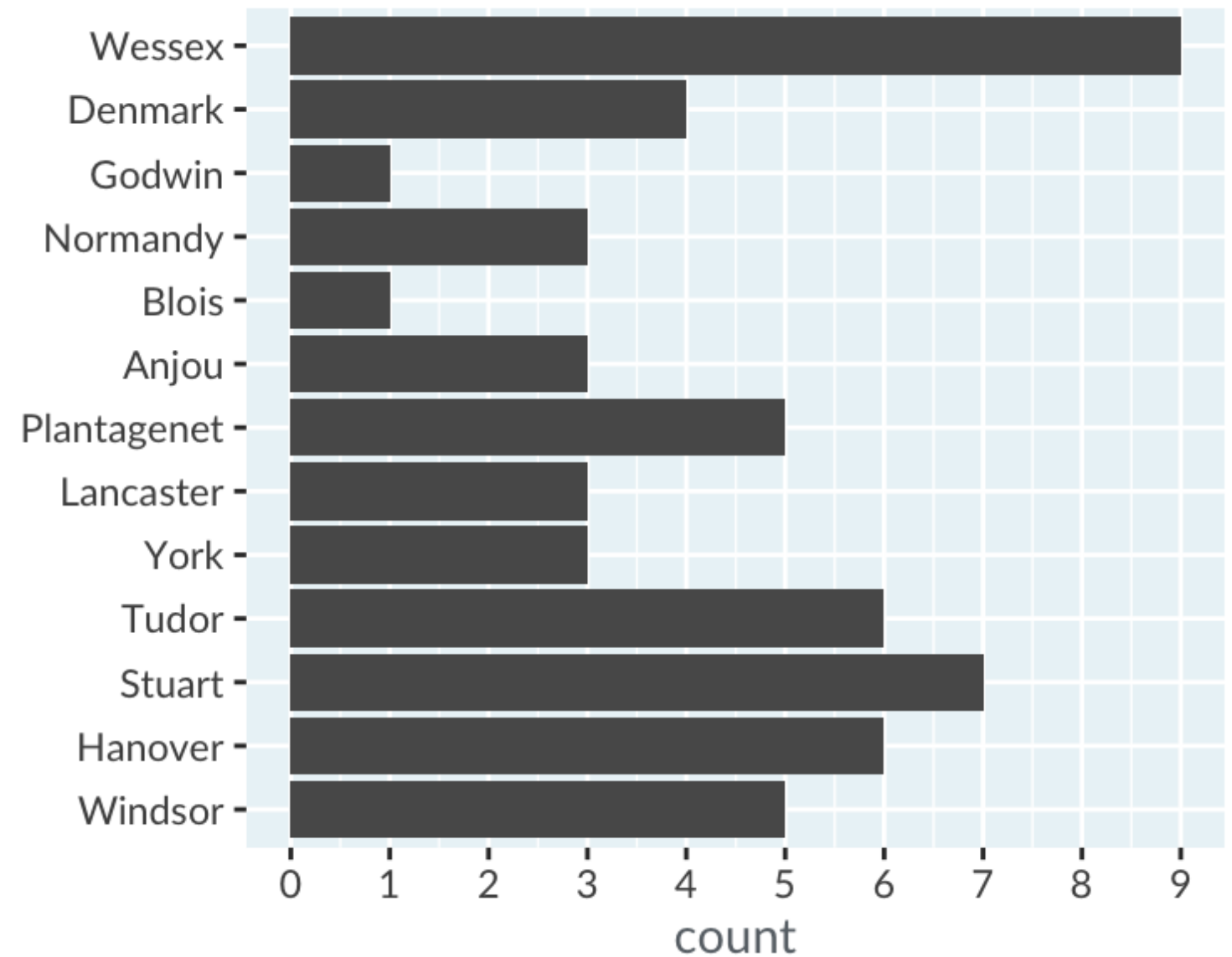
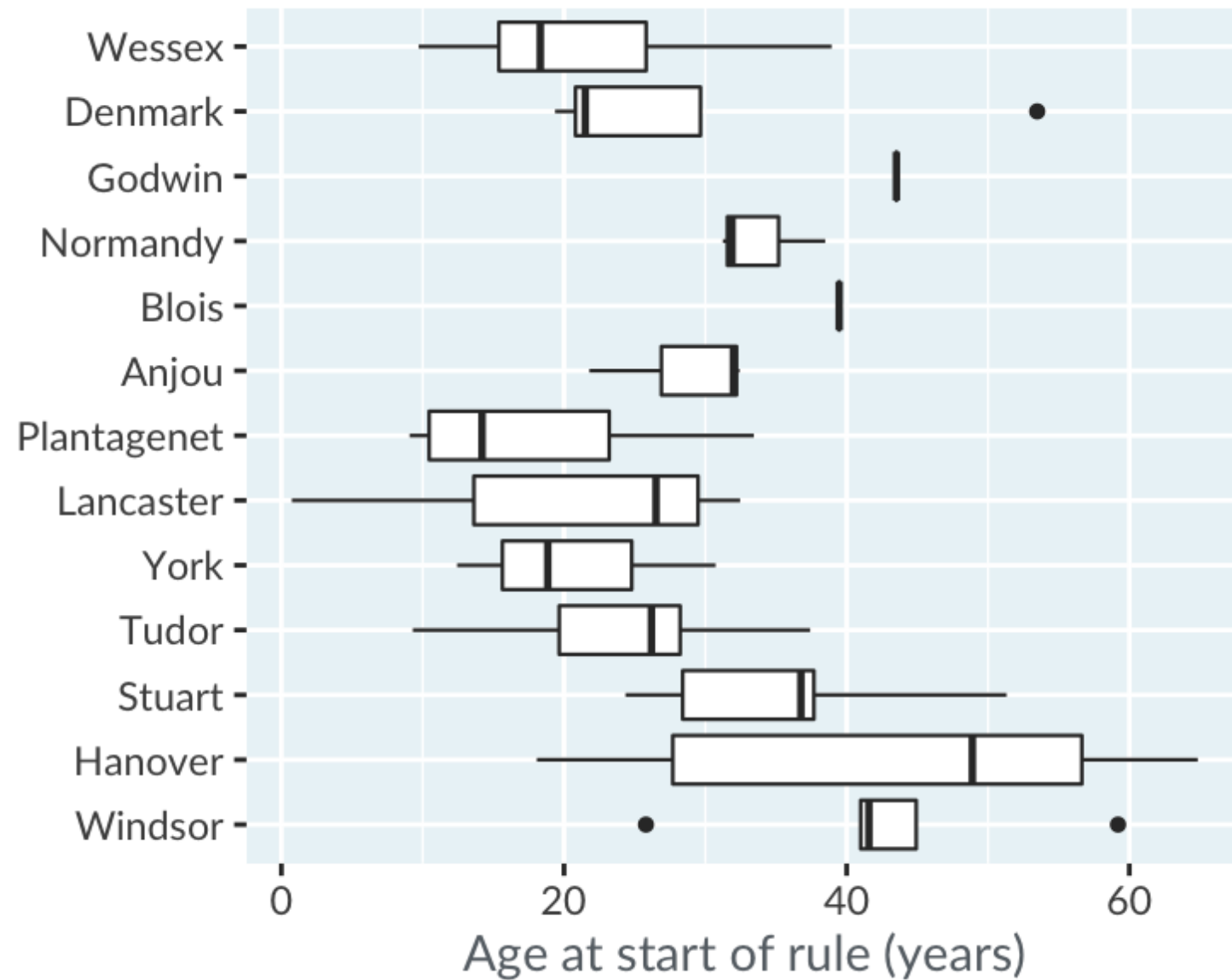
n_portions	year	pct_children
n = 0	2001	10.921779
n < 1	2001	3.843093
1 <= n < 2	2001	23.659102
...
4 <= n < 5	2018	12.28728
5 <= n	2018	17.87497

¹ <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2018/health-survey-for-england-2018-data-tables>

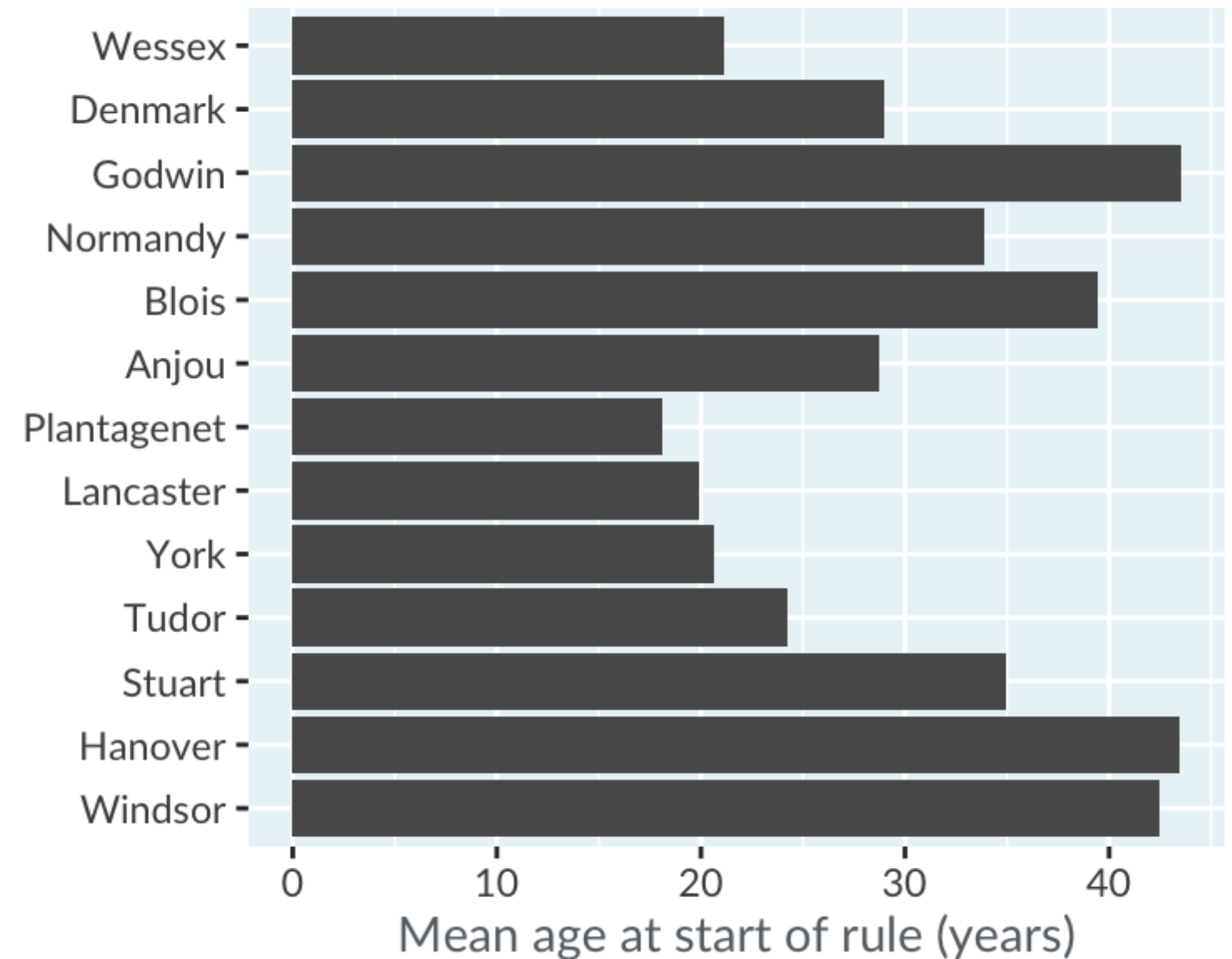
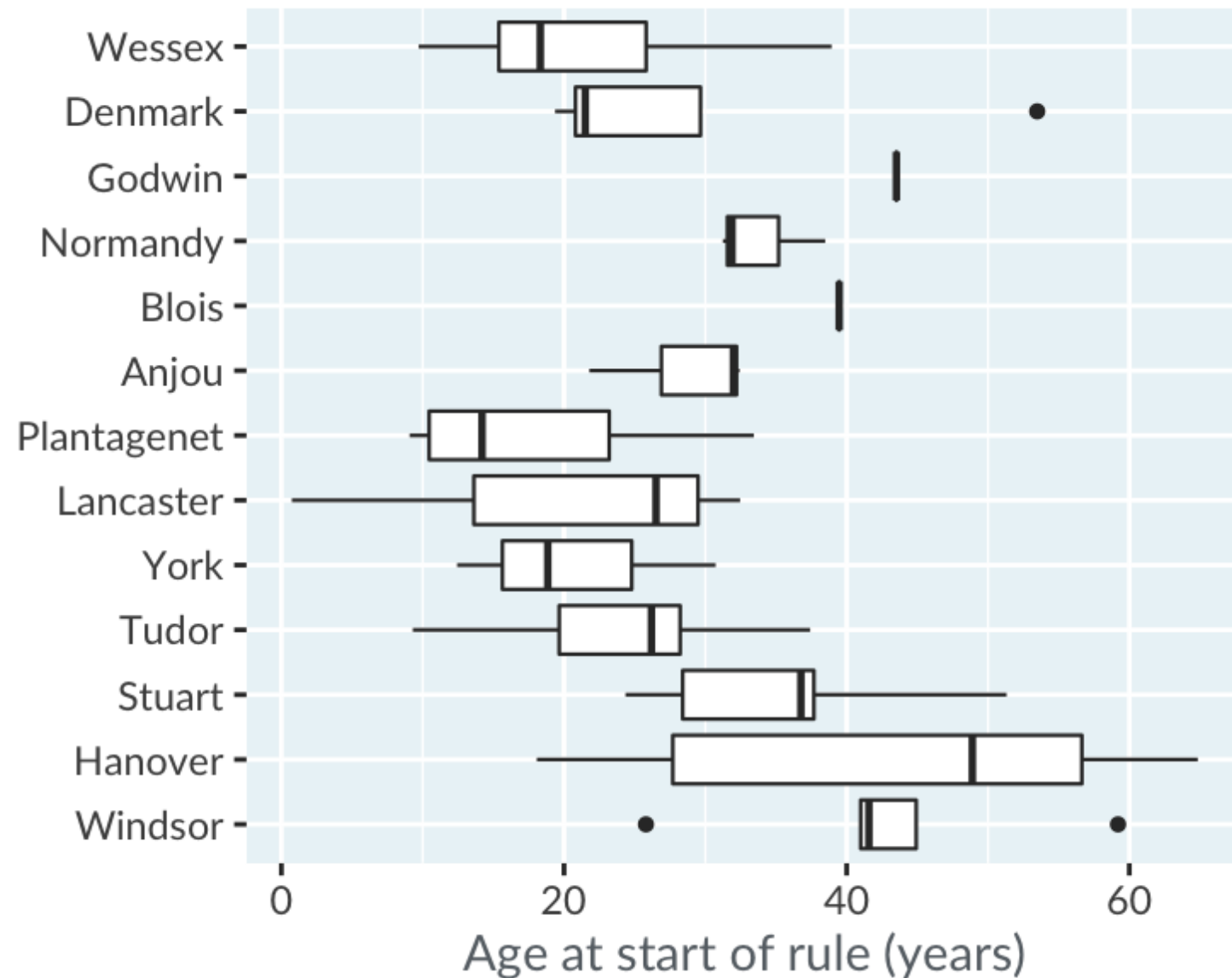
Stacking bars



Bar plots vs. box plots



Other metrics than counts



Let's practice!

DATA VISUALIZATION FOR EVERYONE

Dot plots

DATA VISUALIZATION FOR EVERYONE



Richie Cotton

Curriculum Architect at DataCamp

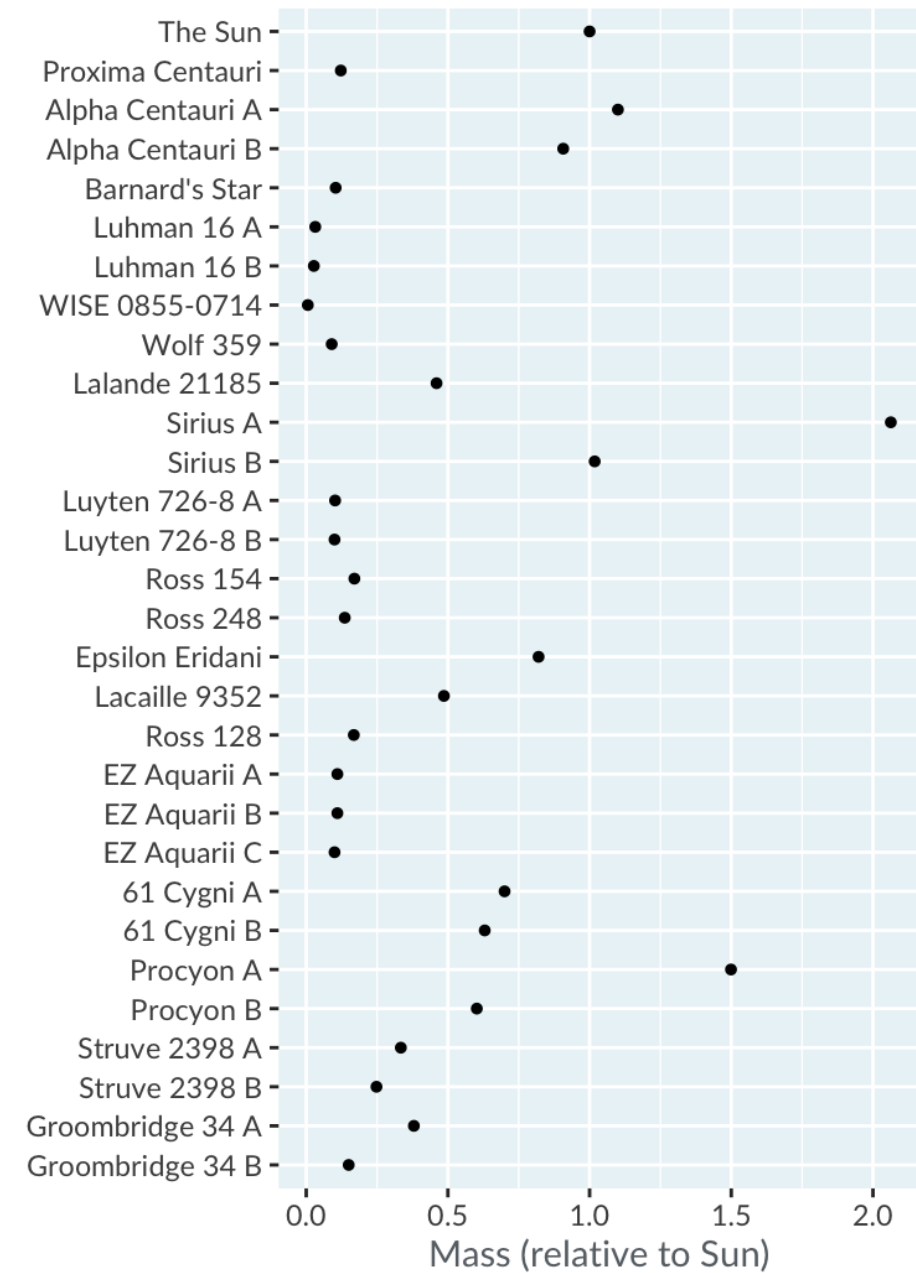
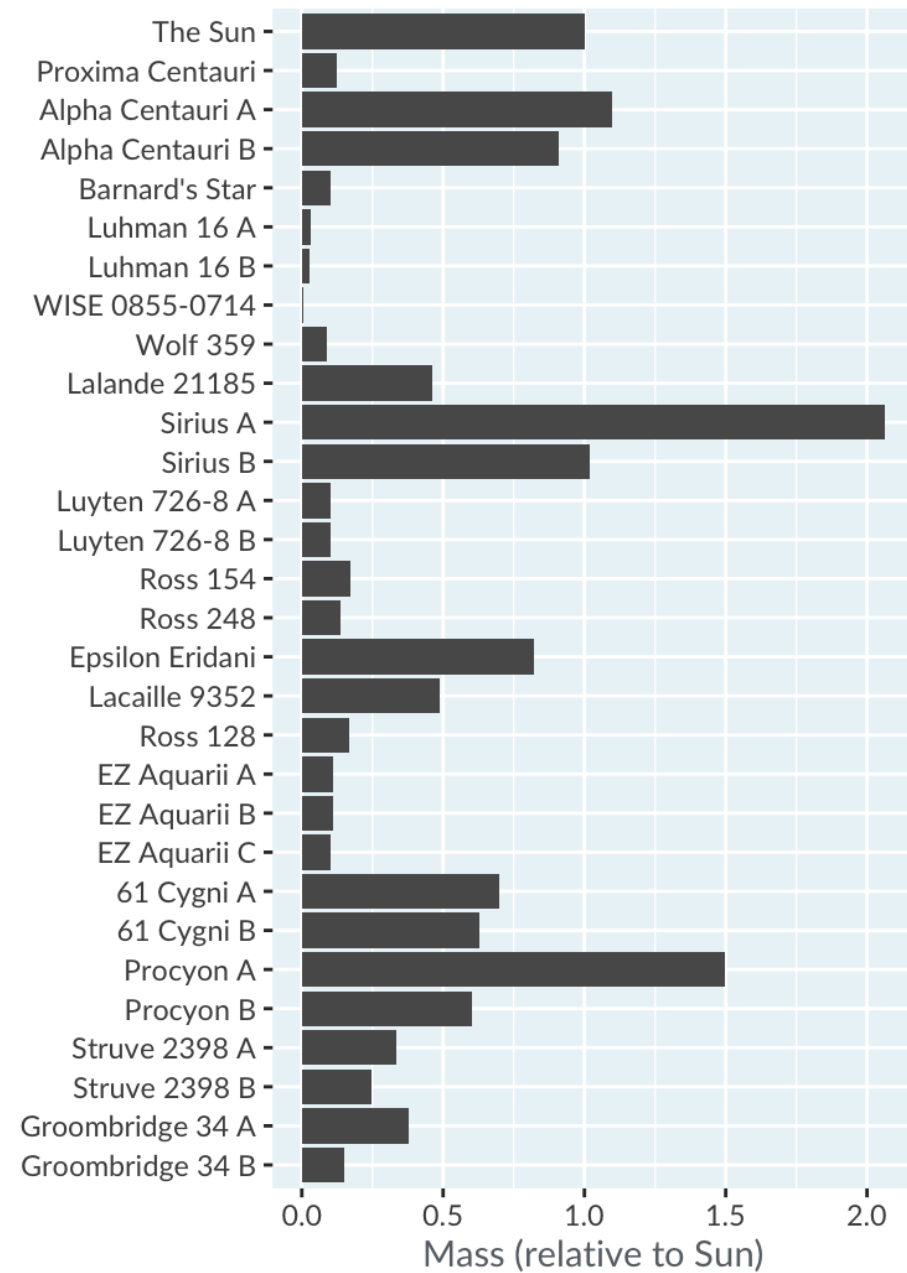
When should you use a dot plot?

1. You have a categorical variable.
2. You want to display numeric scores for each category on a log scale, or
3. You want to display multiple numeric scores for each category.

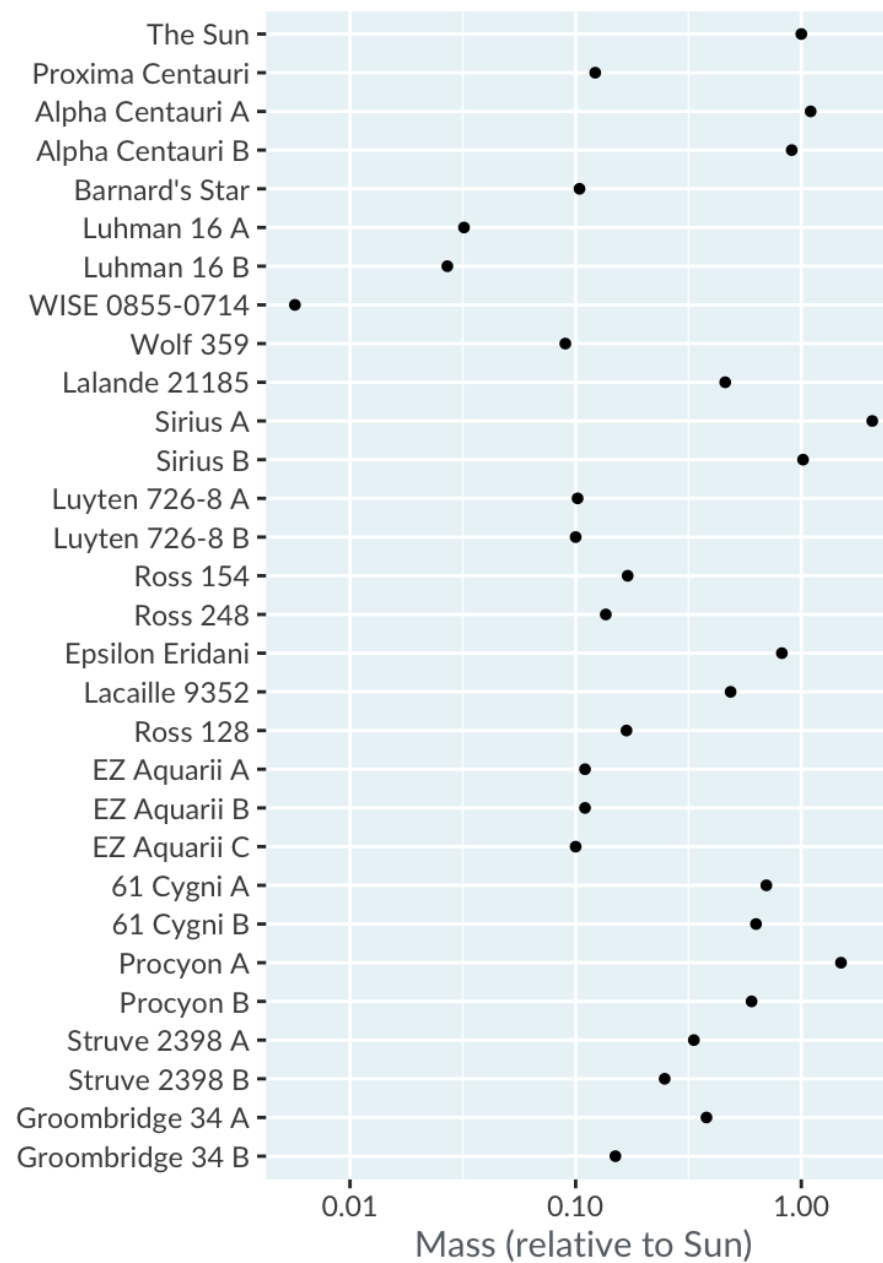
Nearby stars and brown dwarfs

star	distance_ly	mass_sm
The Sun	0.00000158	1.0000
Proxima Centauri	4.2441000	0.1221
Alpha Centauri A	4.3650000	1.1000
Alpha Centauri B	4.3650000	0.9070
Barnard's Star	5.9577000	0.1040
Luhman 16 A	6.5029000	0.0320
...

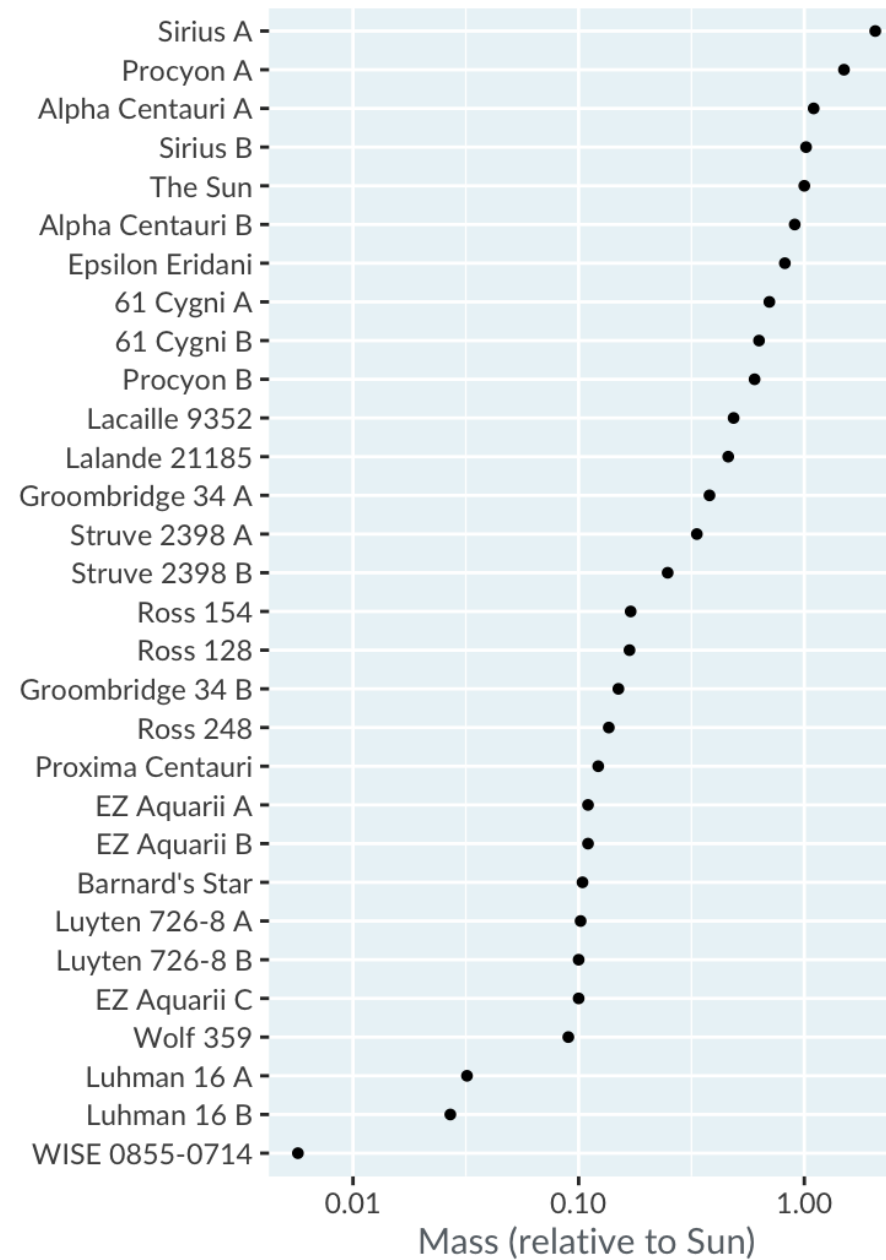
Bar plot vs. dot plot



Log scales



Sorting rows



Let's practice!

DATA VISUALIZATION FOR EVERYONE