Plotting and Visualization with R
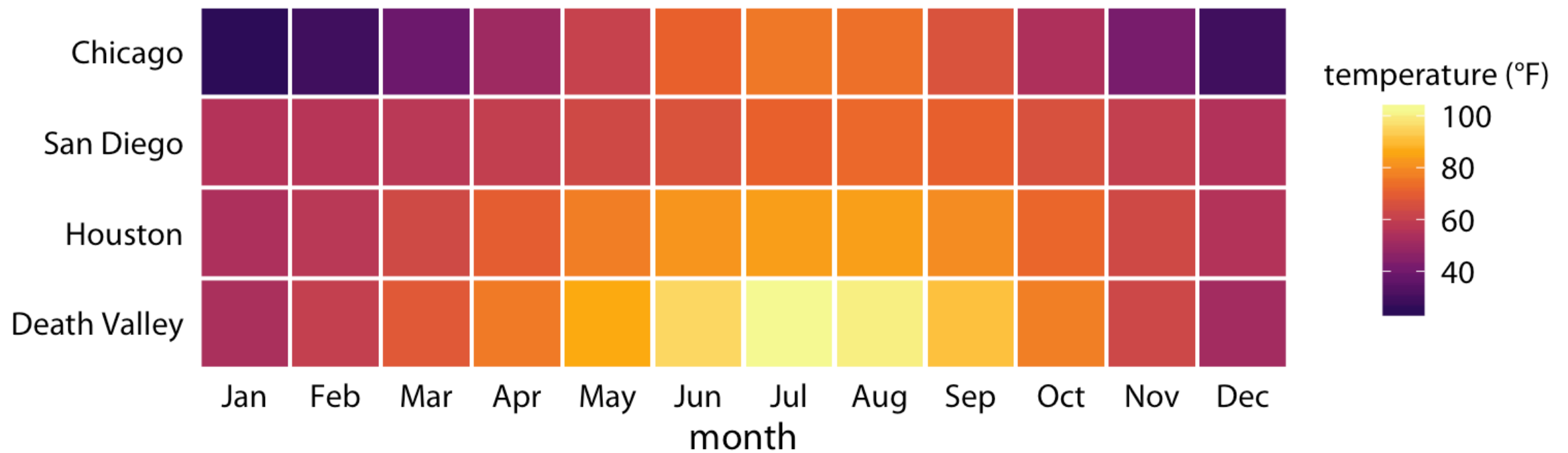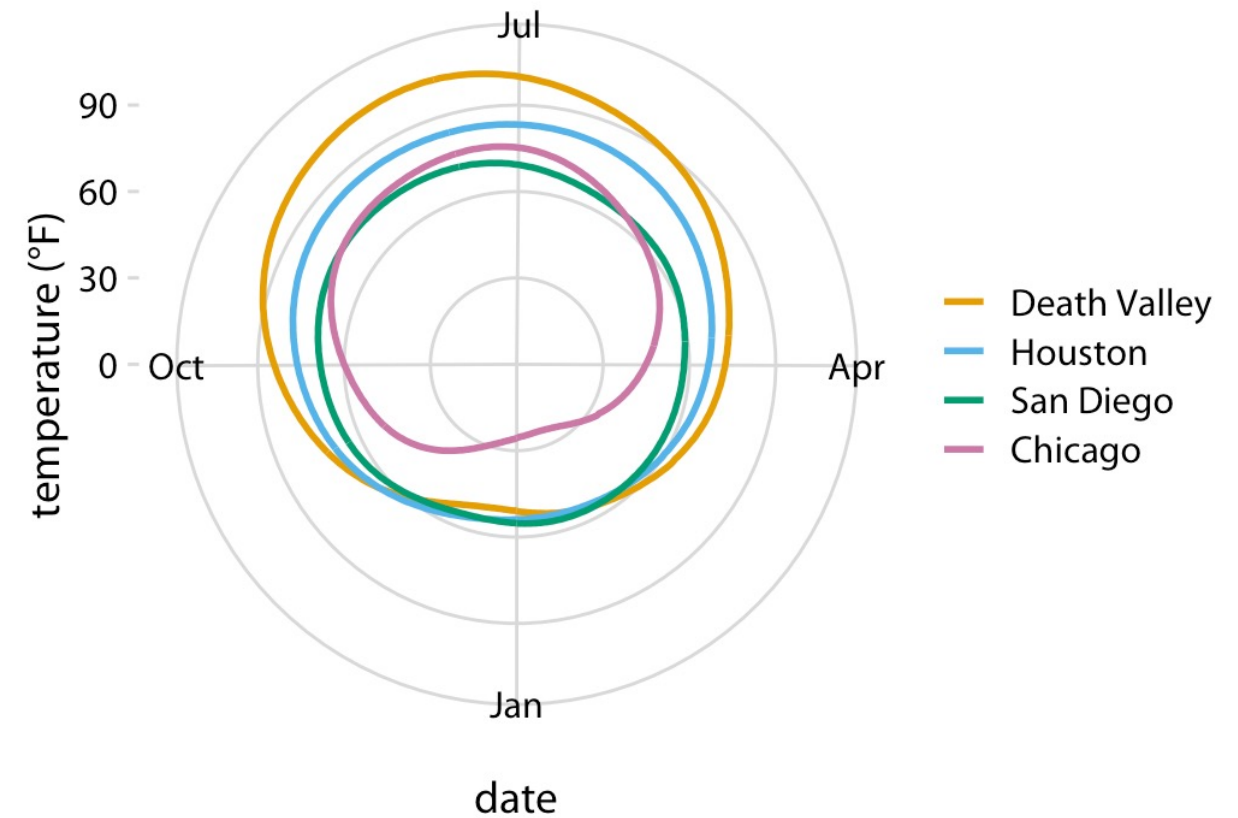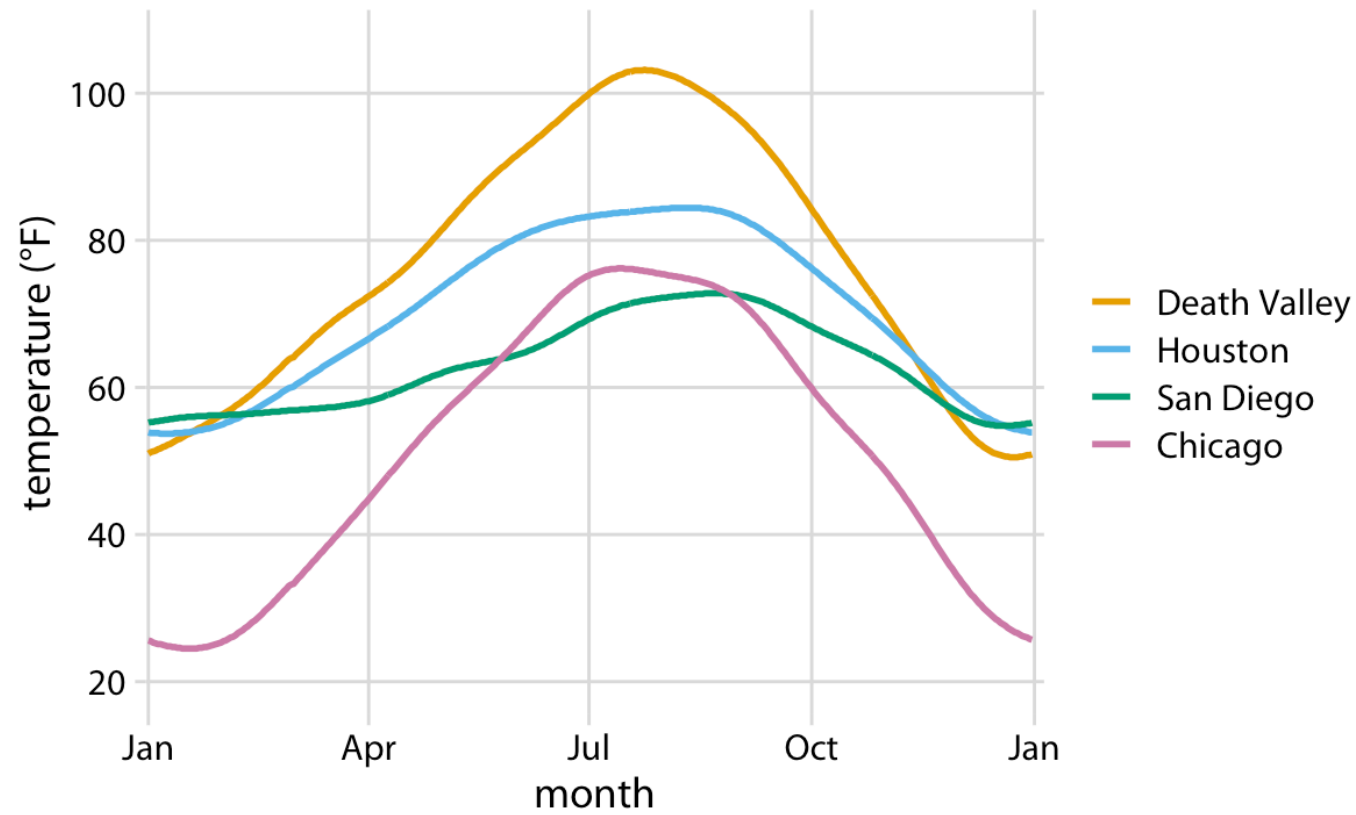
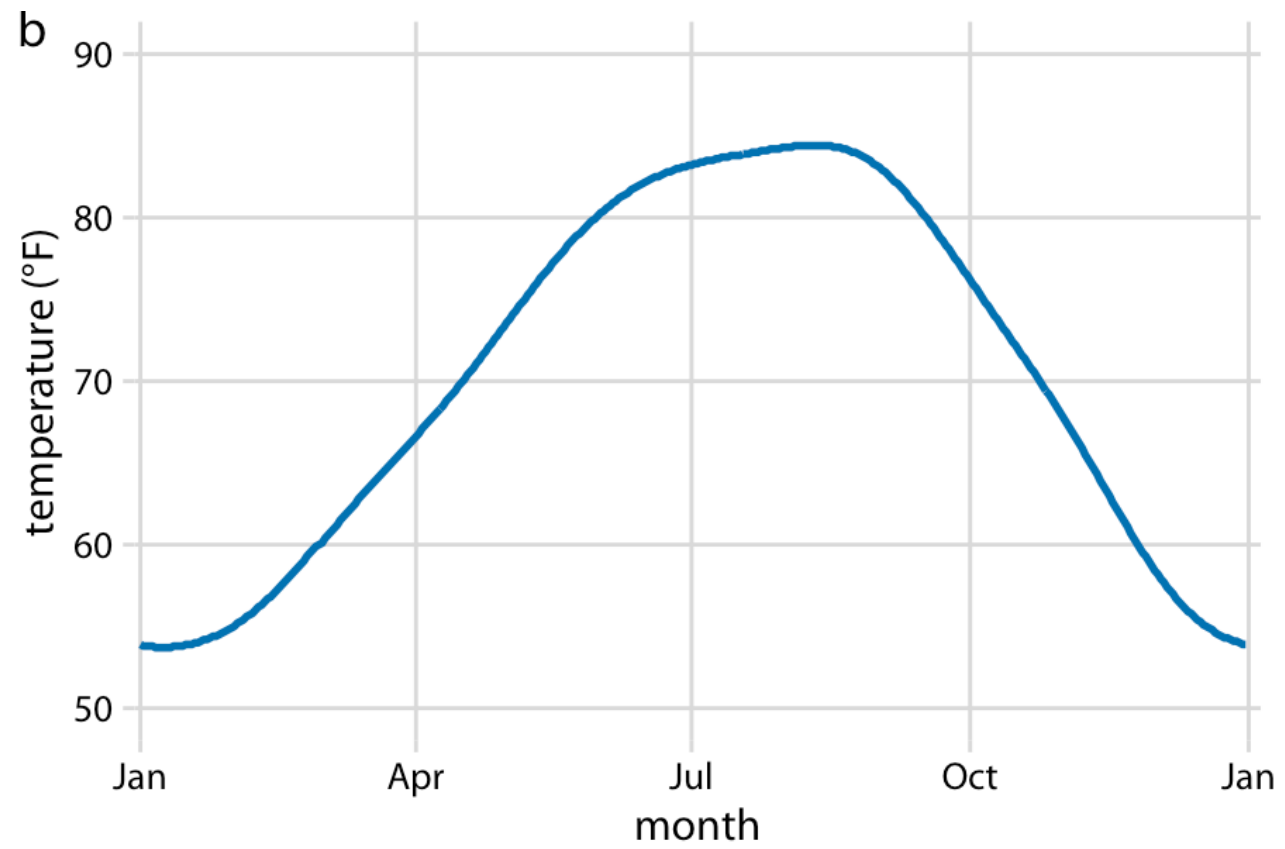https://r4ds.had.co.nz/data-visualisation.html
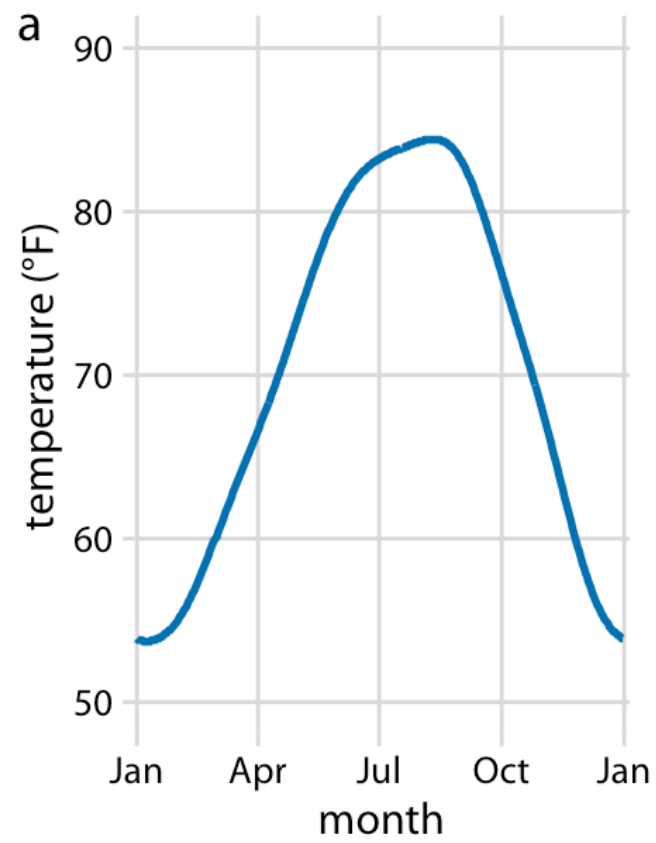https://is.gd/ggplot

Fundamentals of Data visualization

Alternative representations

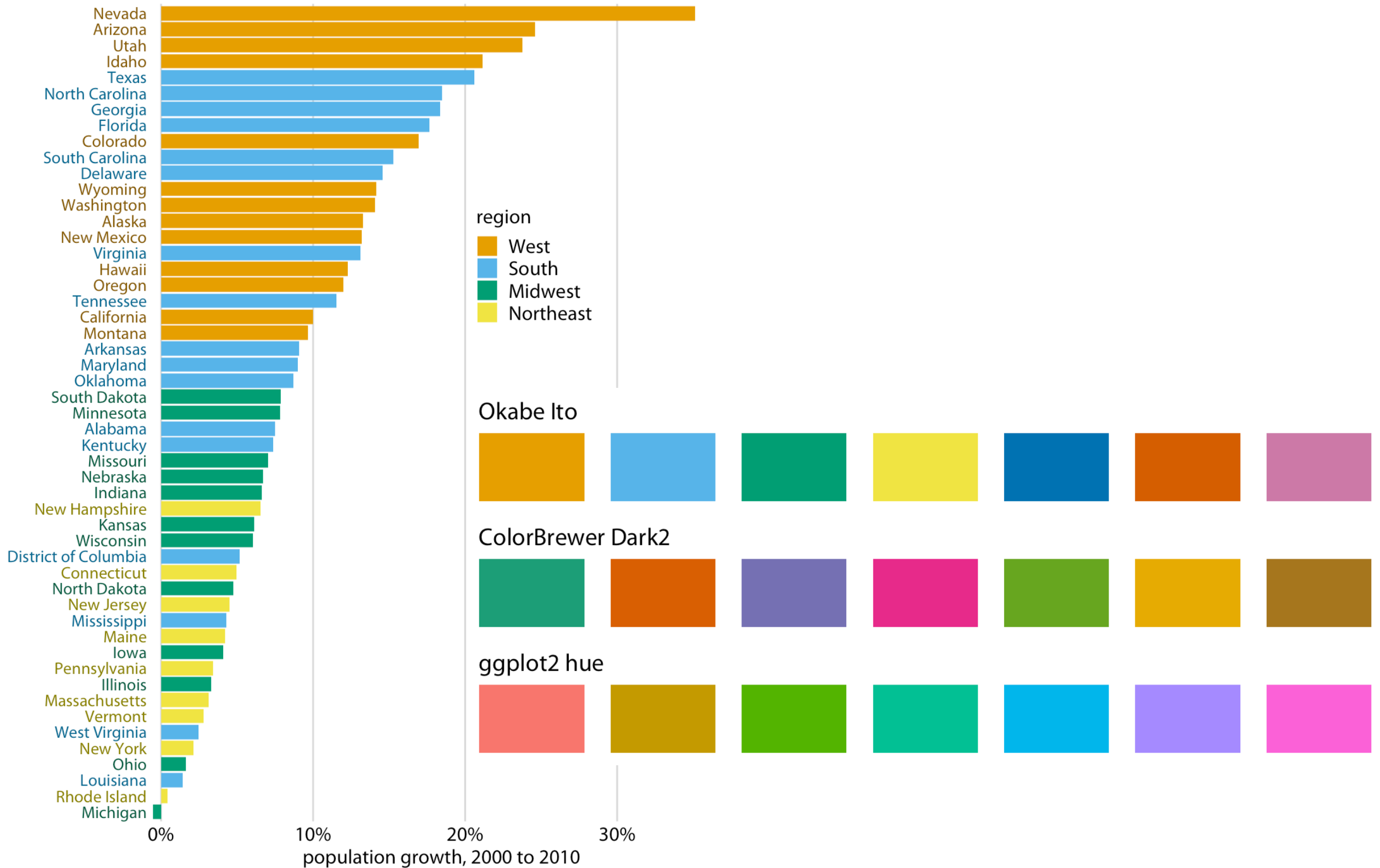# Aspect ratio
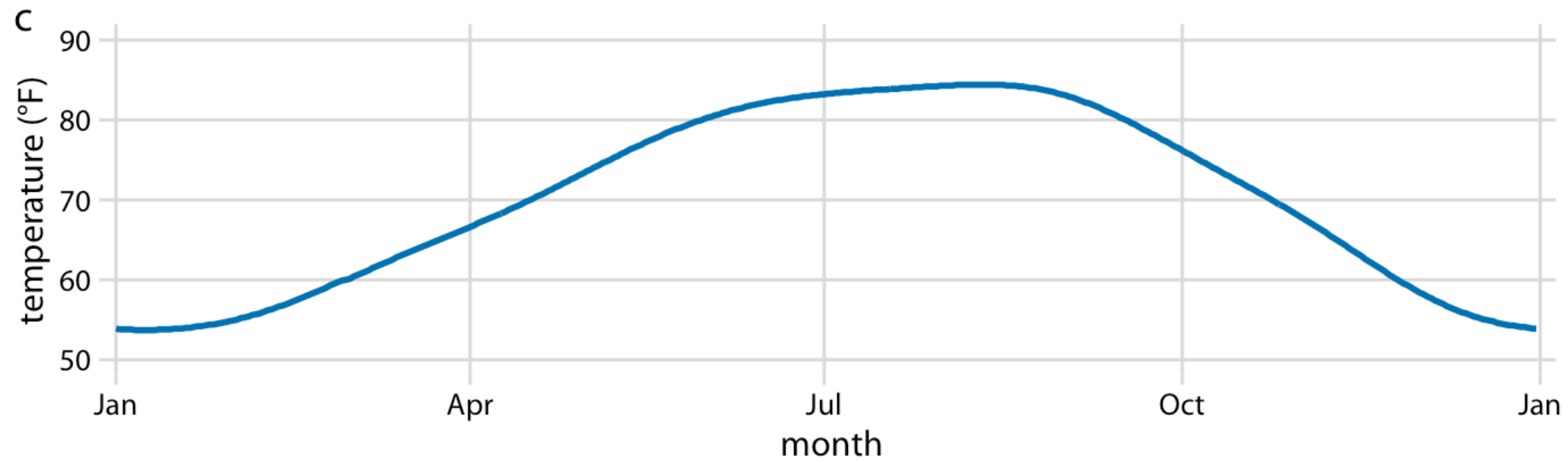
Scaling axes
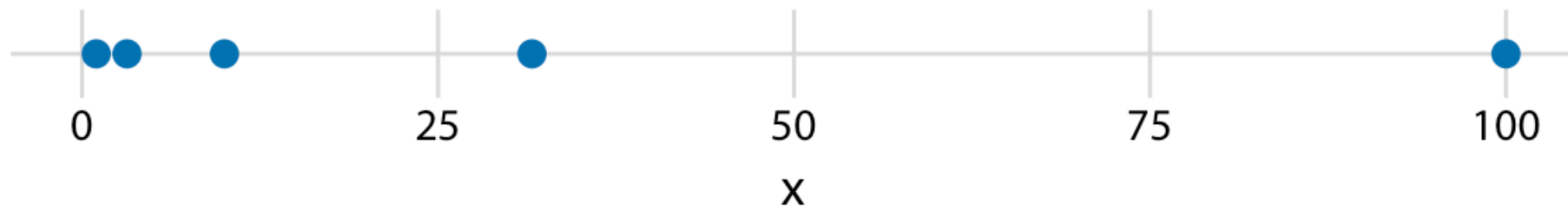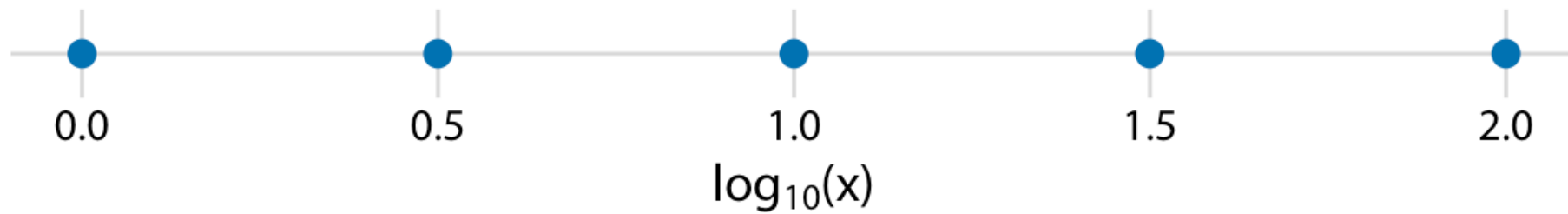
Scaling axes
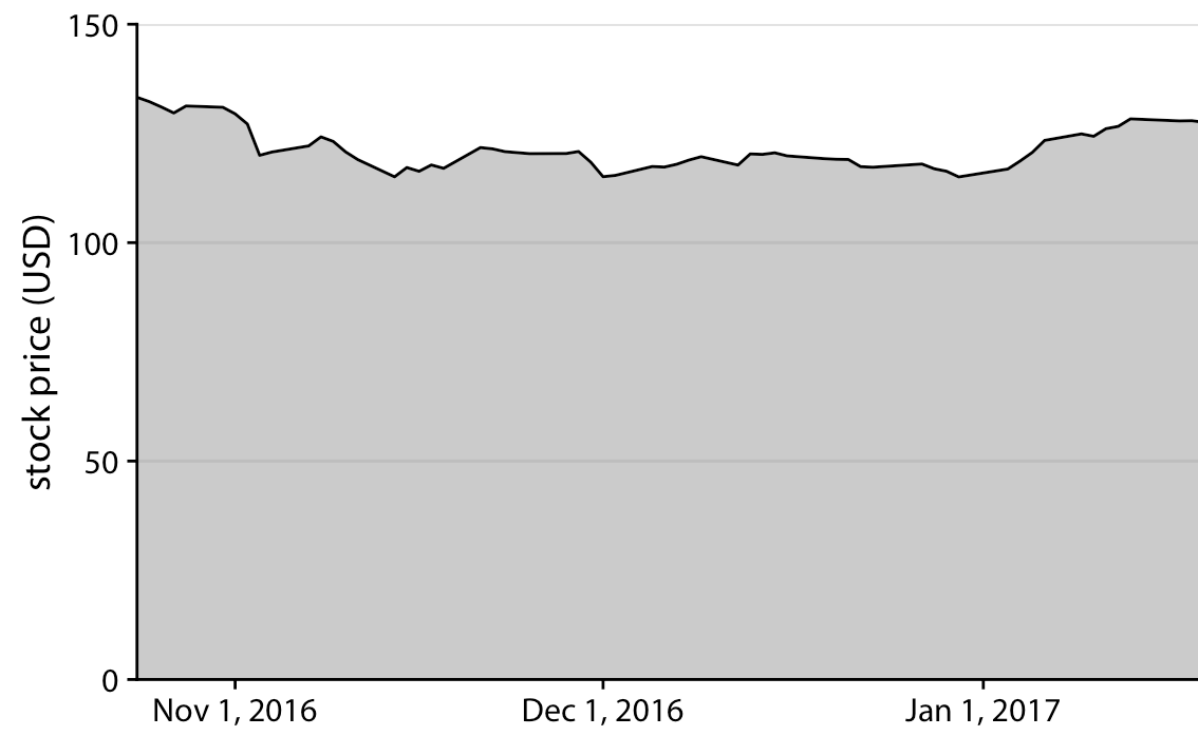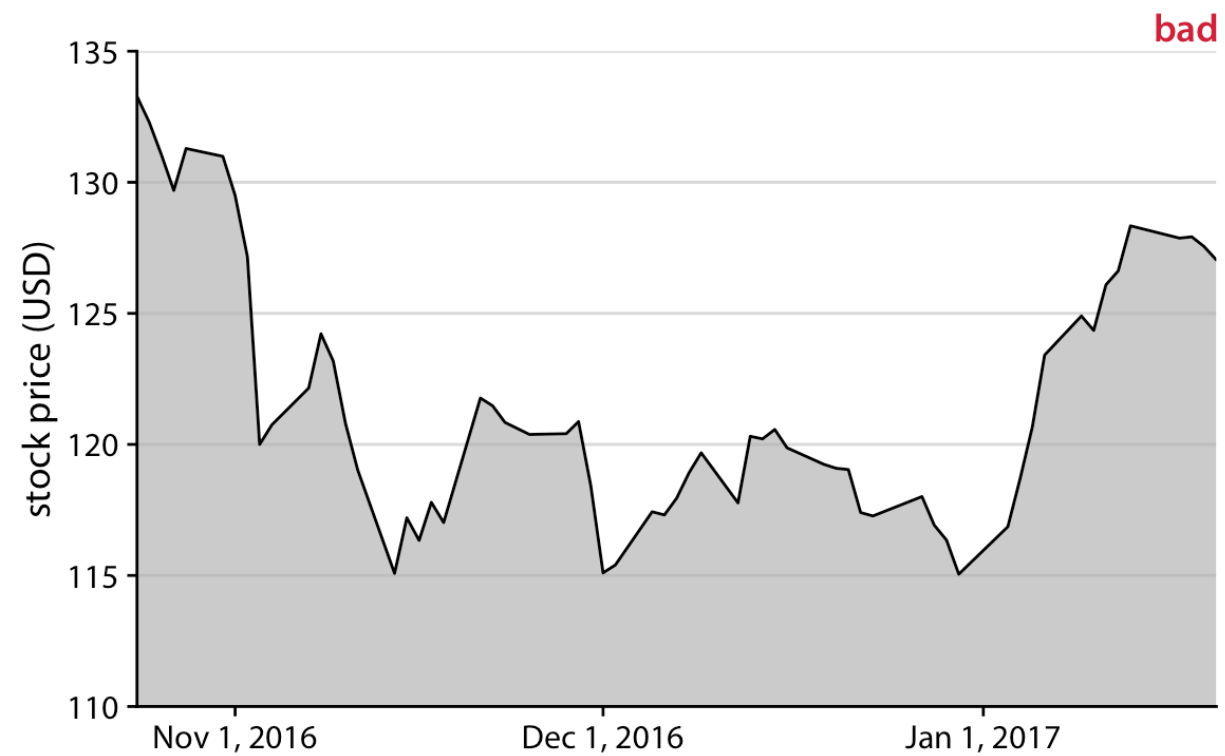
Color scales – three uses

1) To distinguish between groups

2) To represent data values

3) To highlight
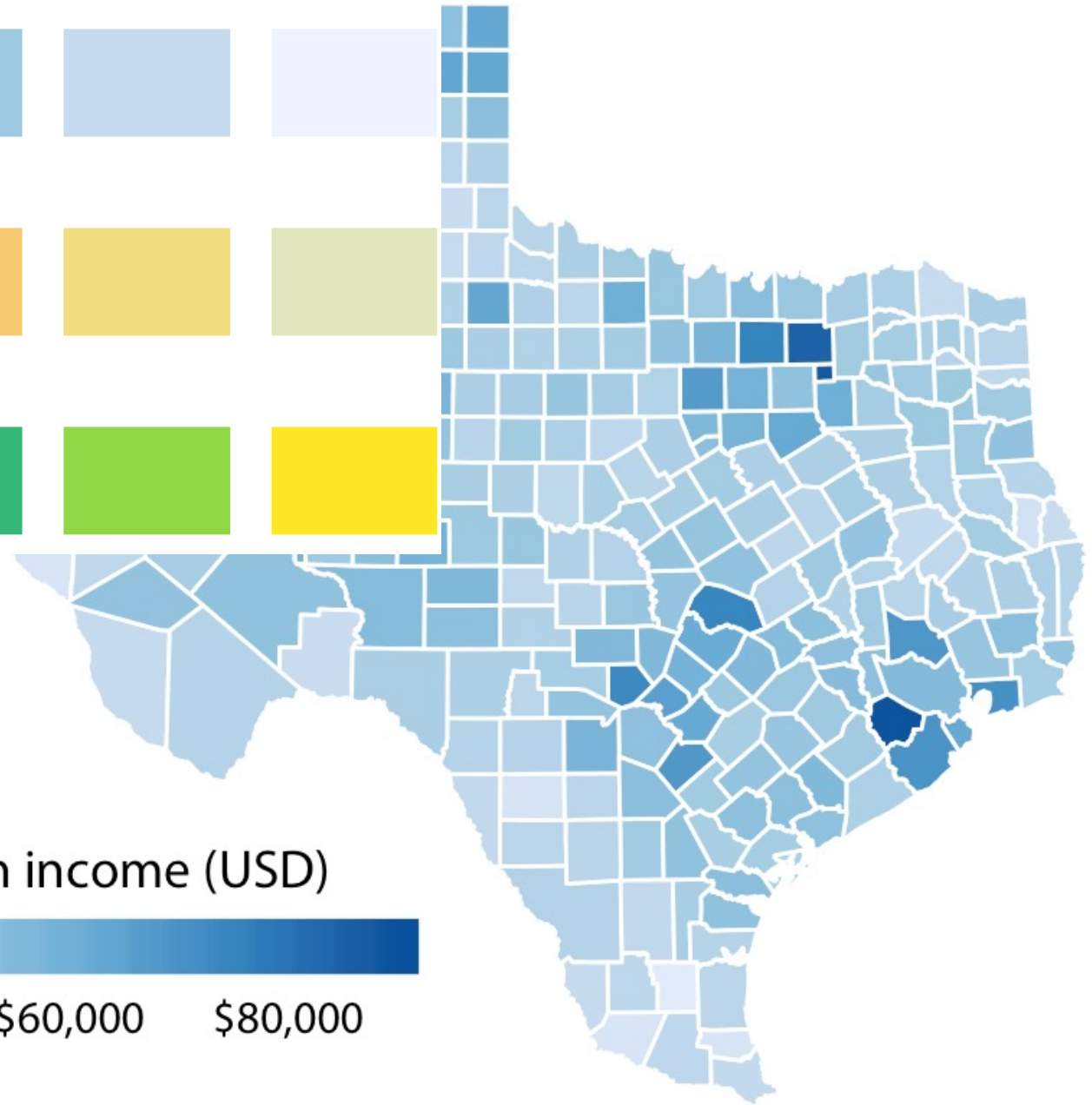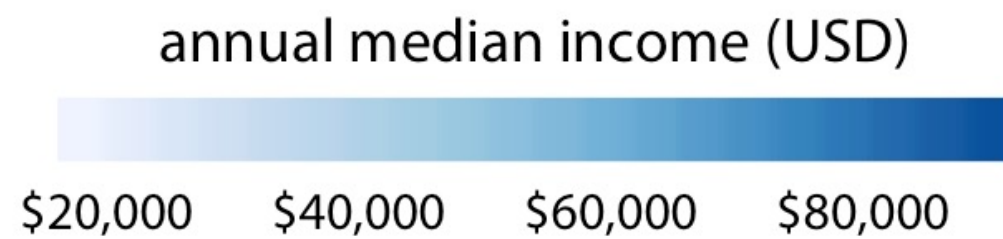
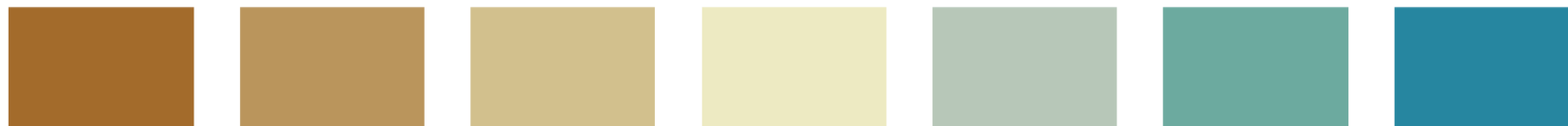# Color to distinguish

Color to represent data values

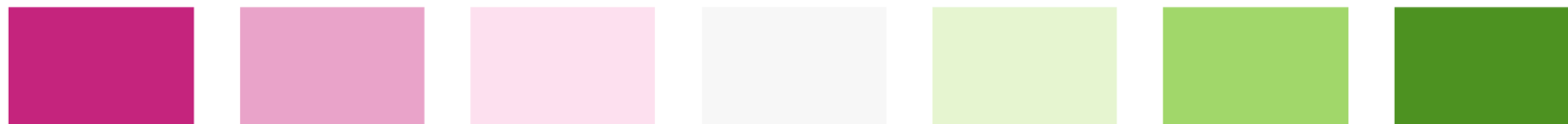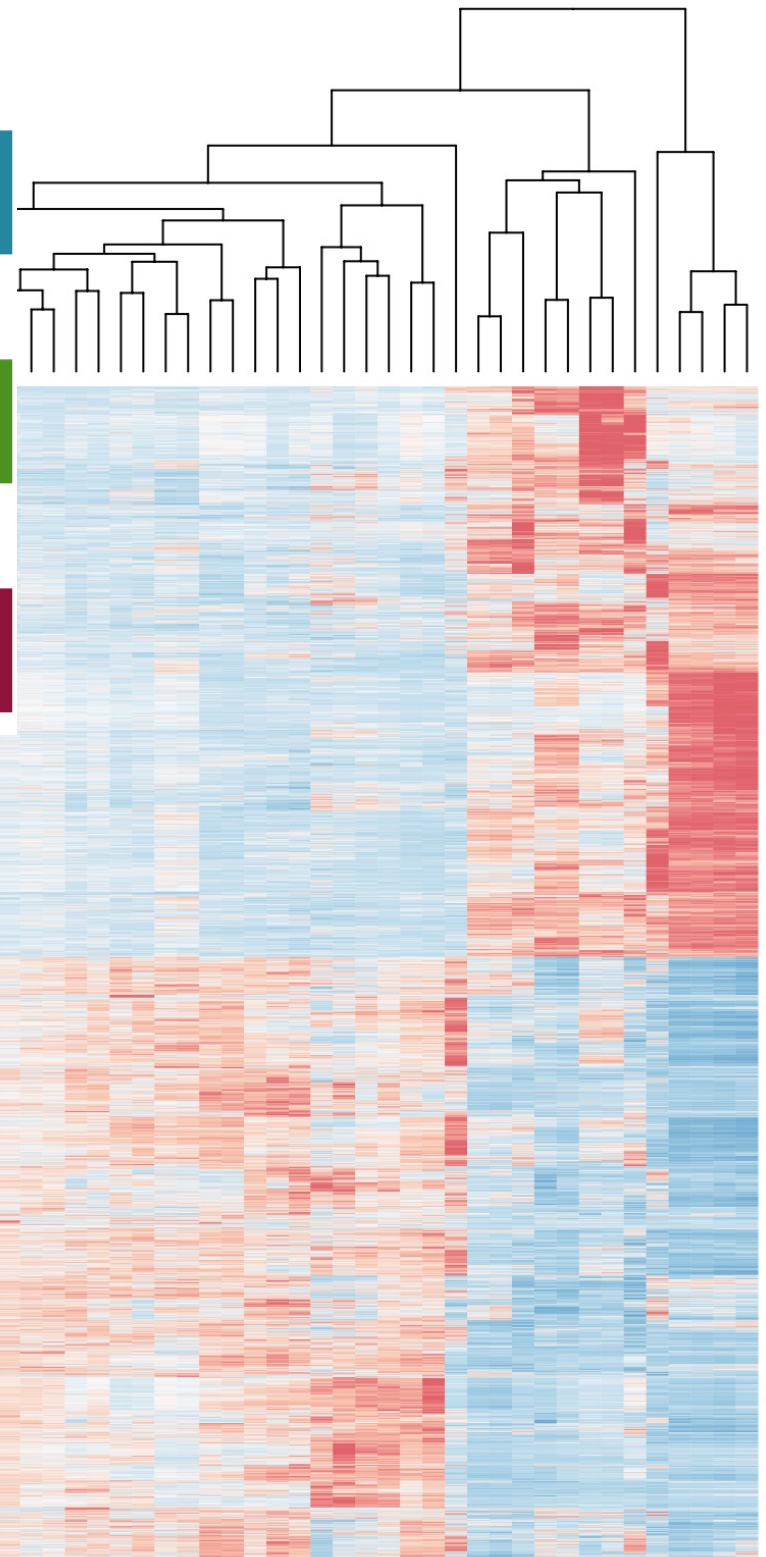# Color to represent data values

CARTO Earth

ColorBrewer PiYG

Blue-Red

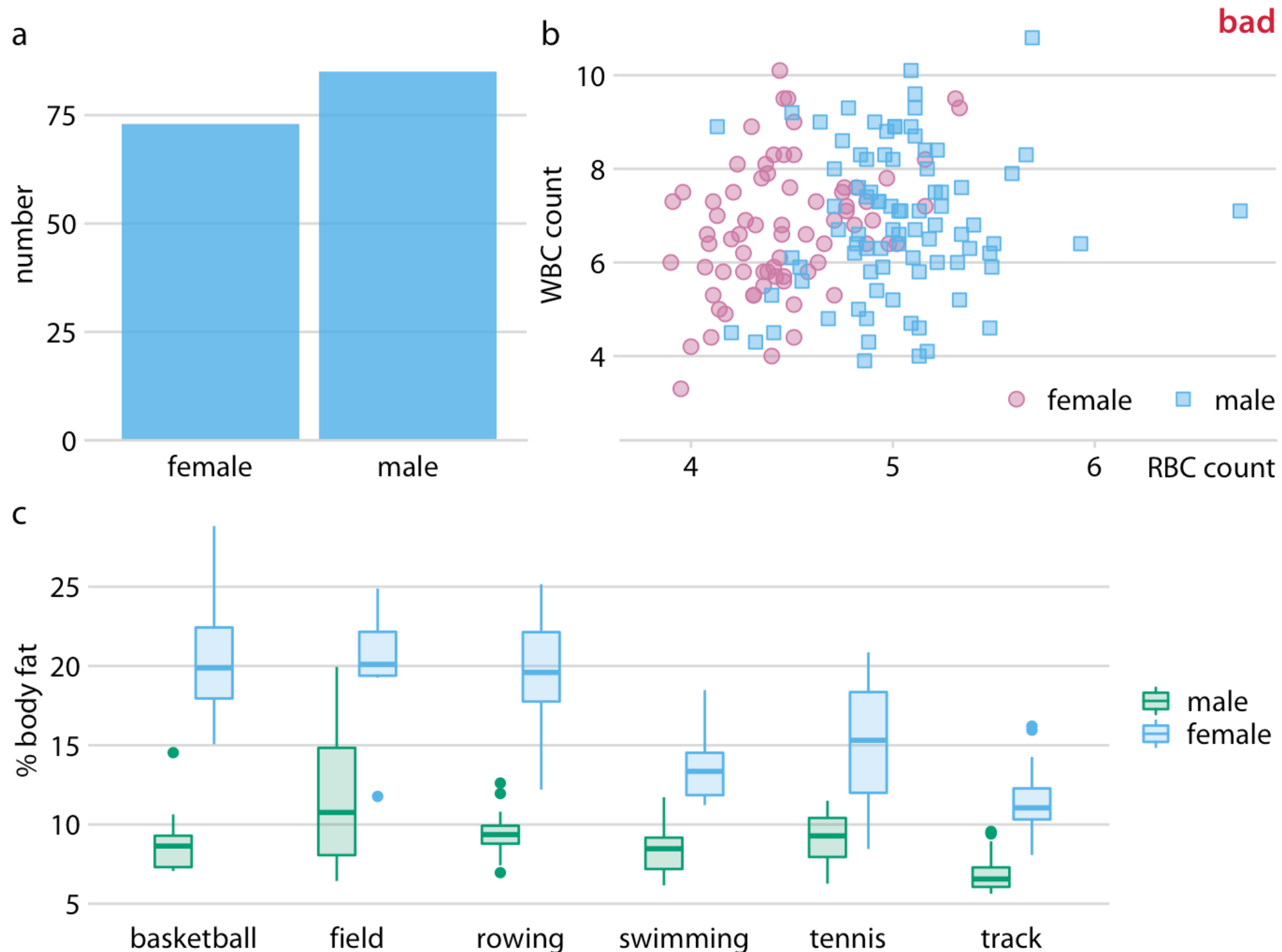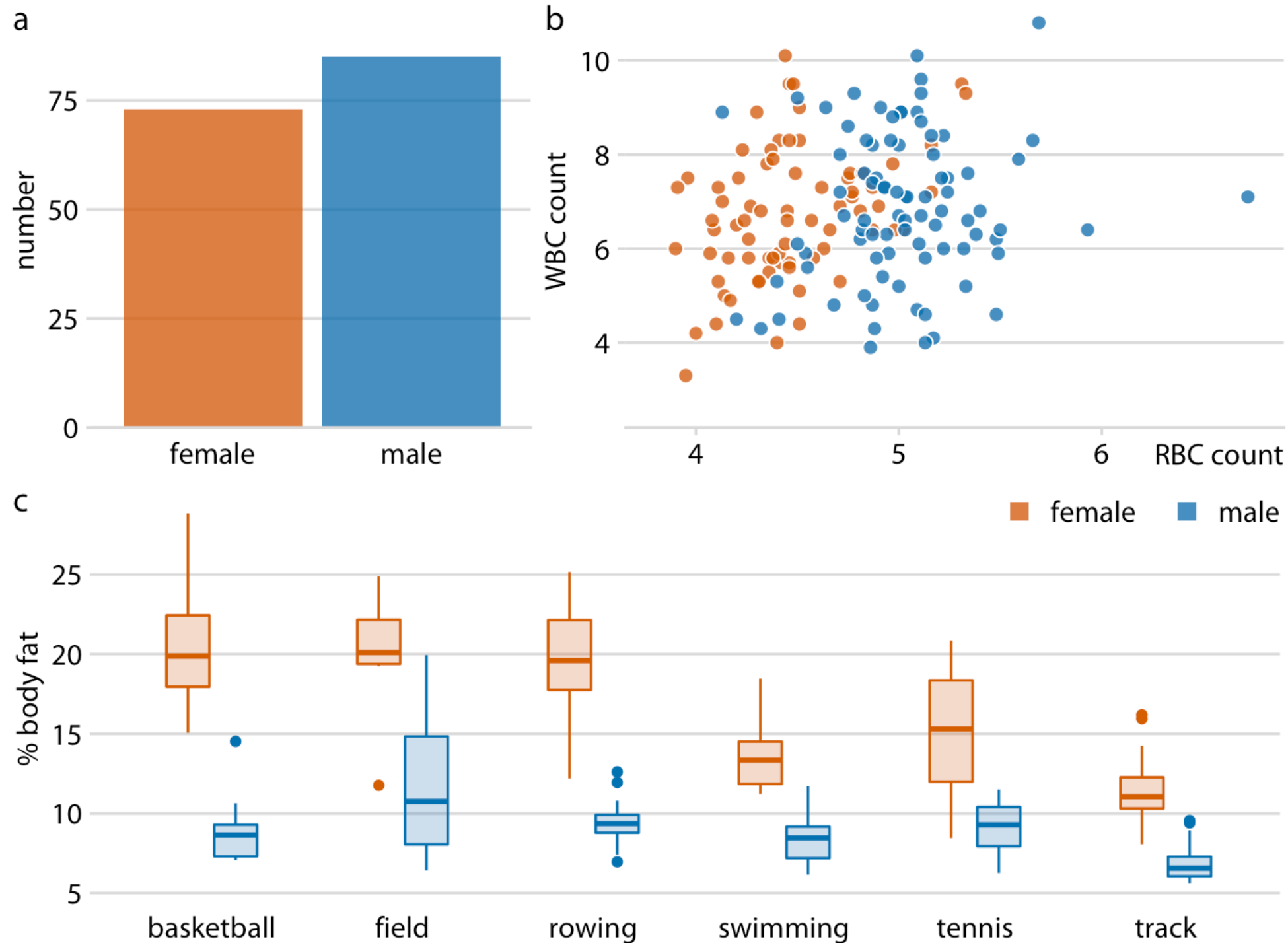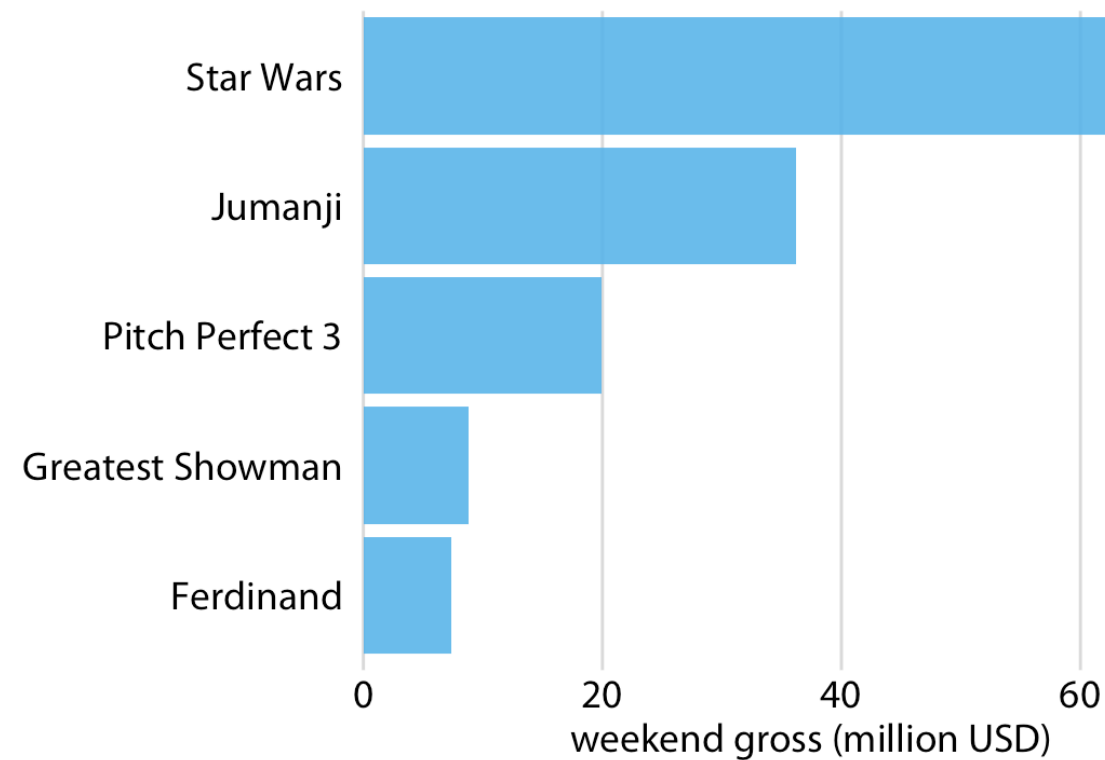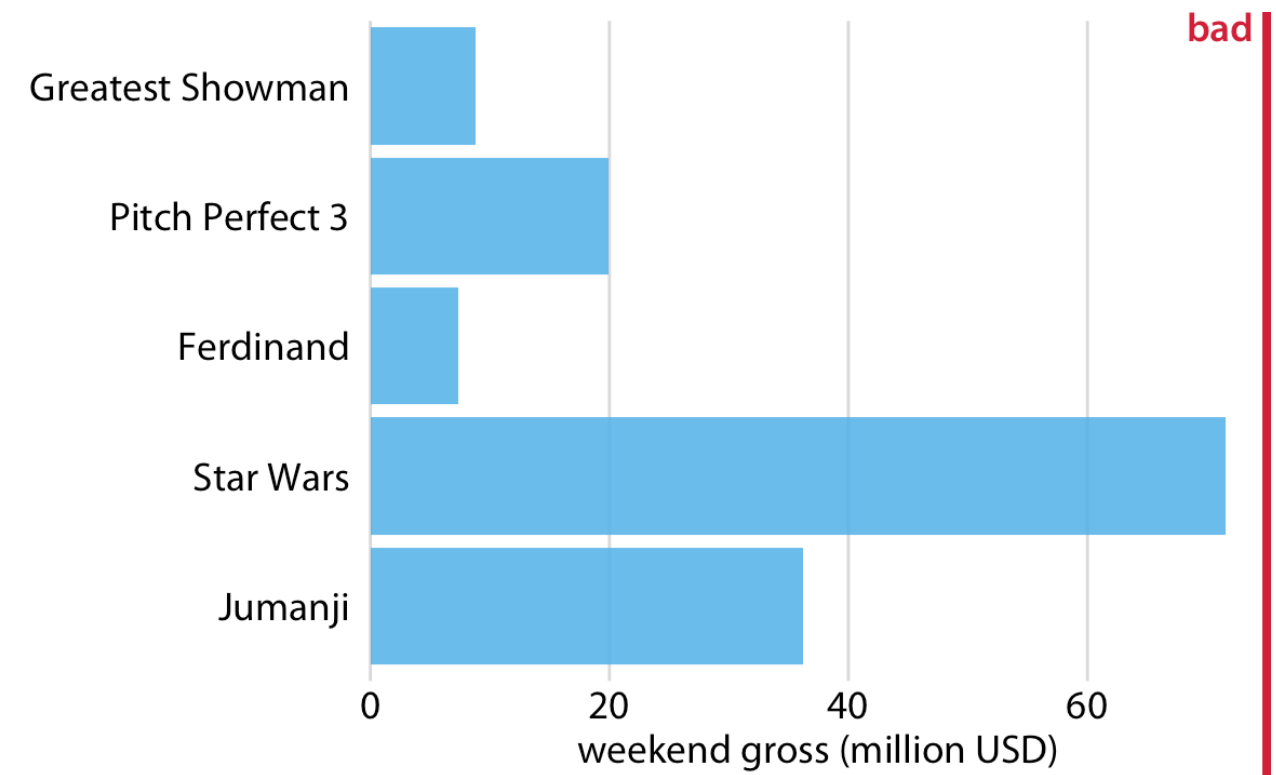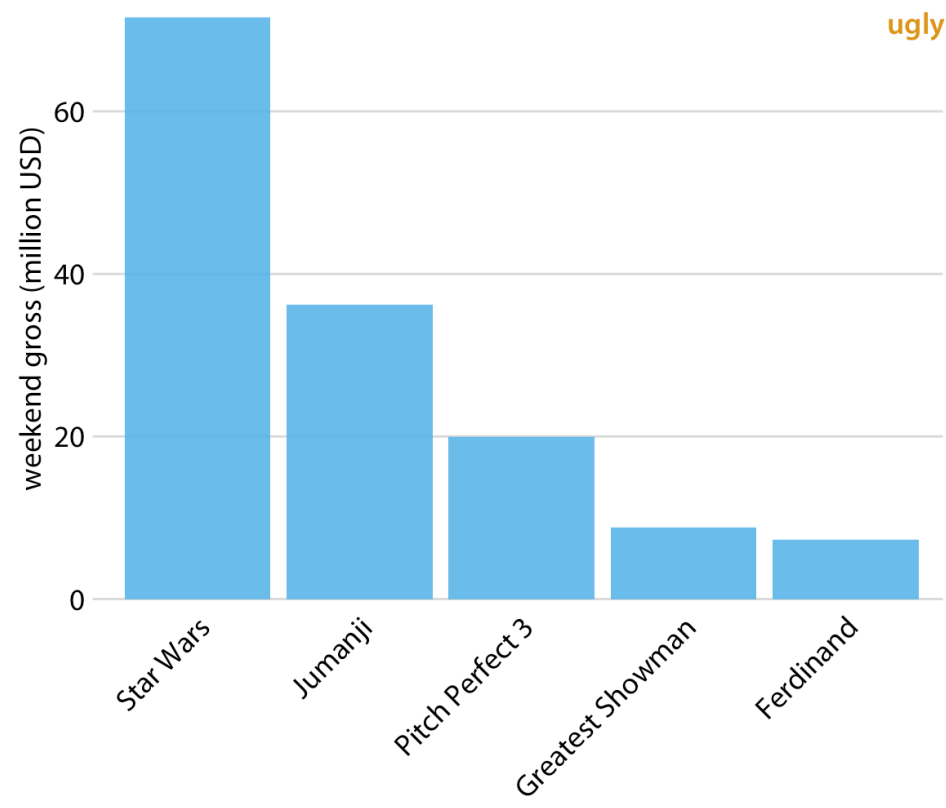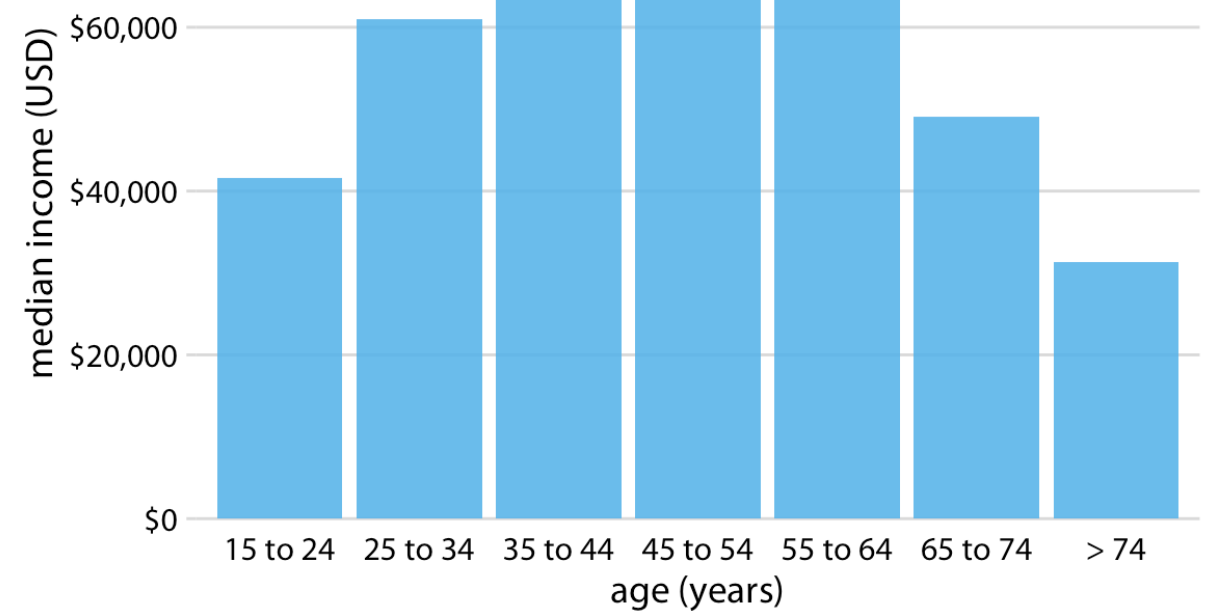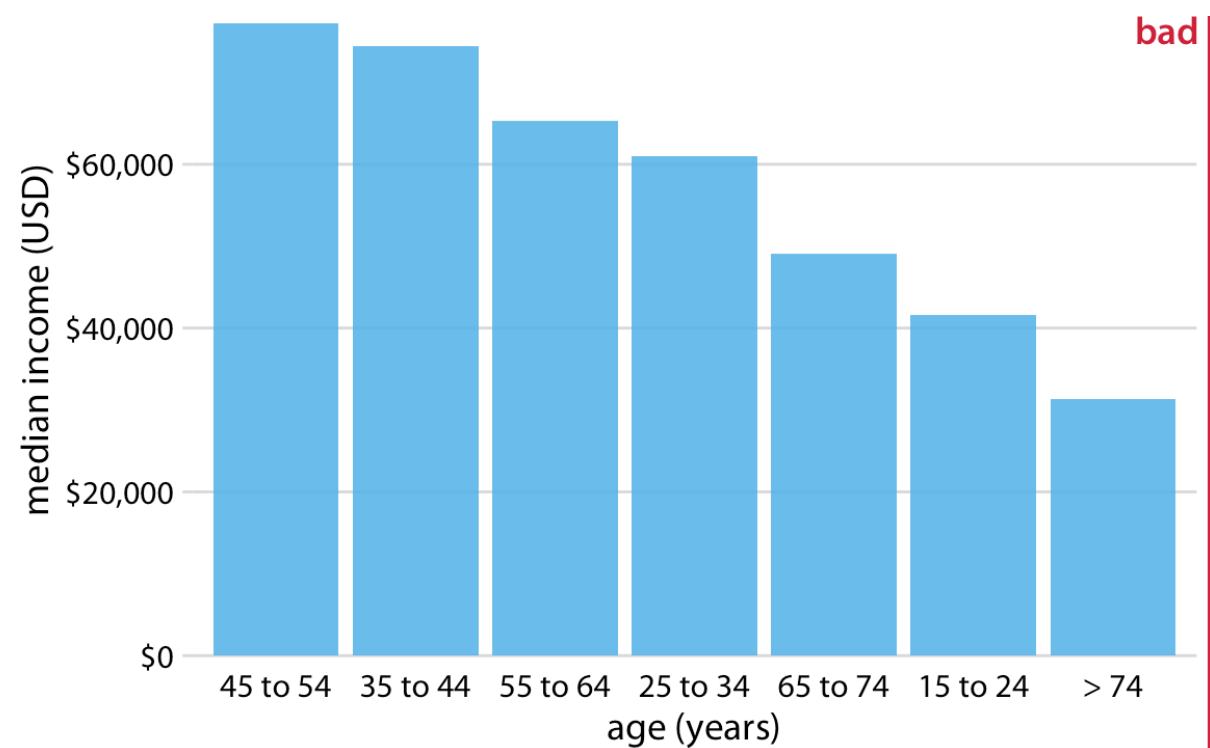Color Key

Color to highlight
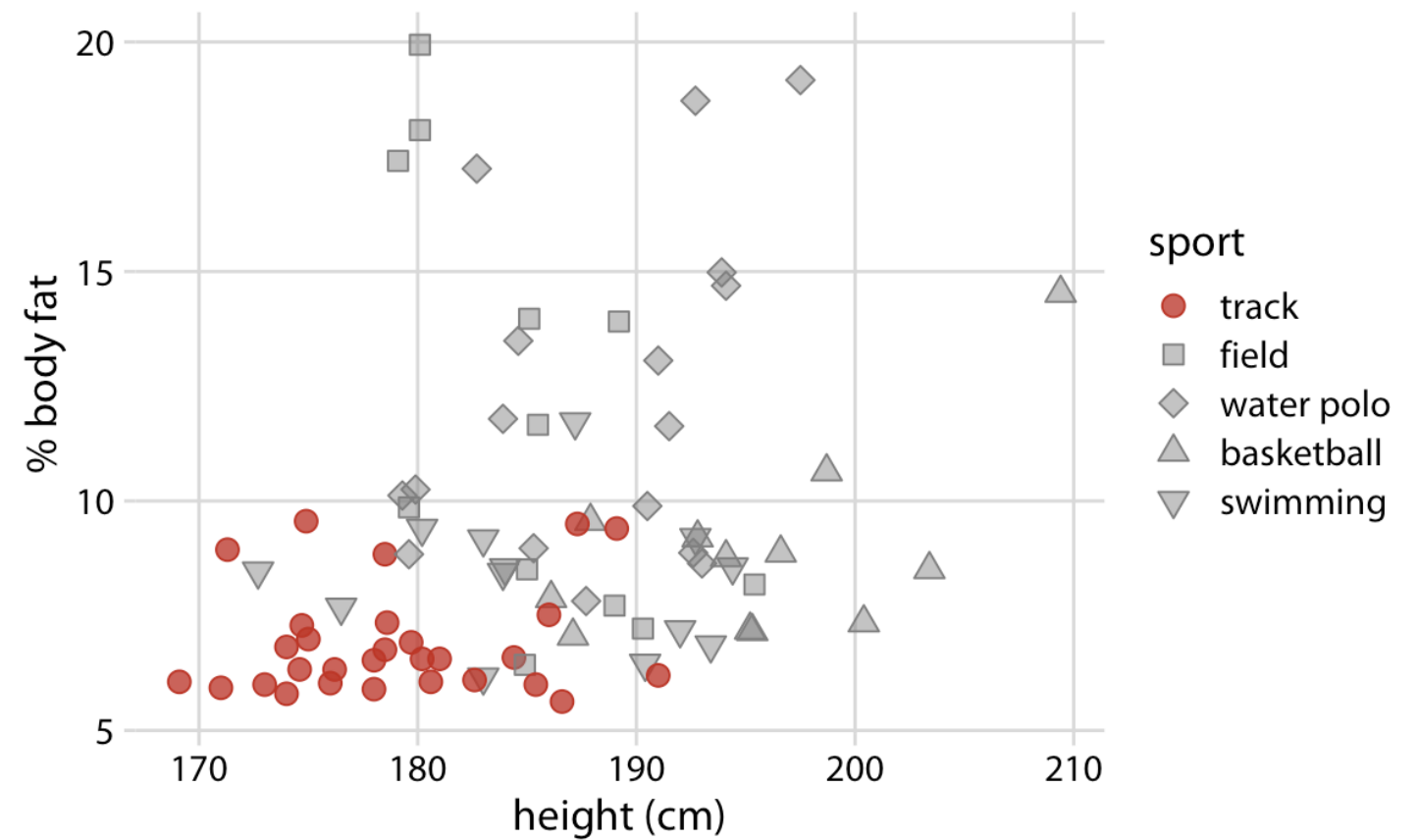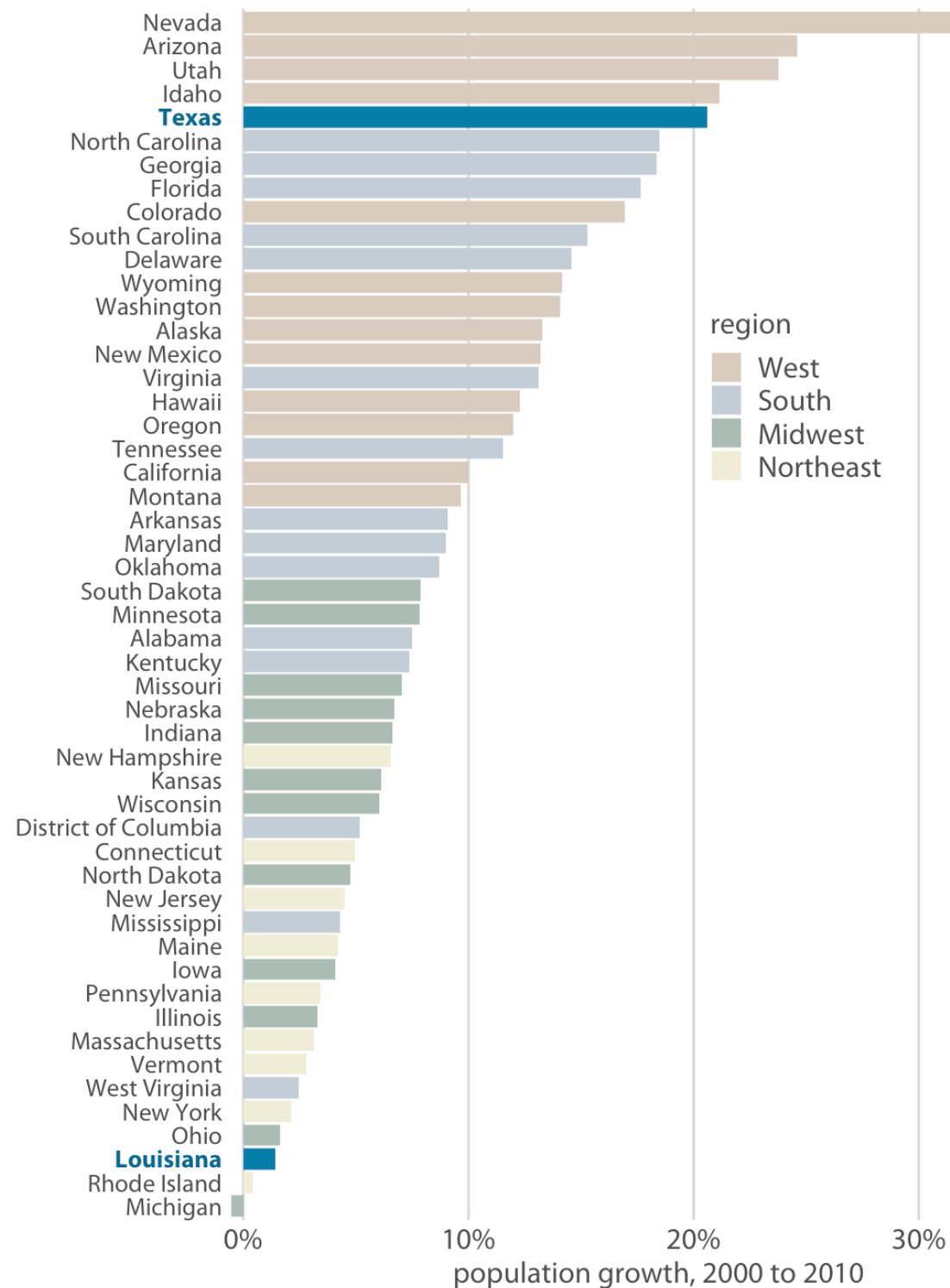
Be consistent across panels and figures
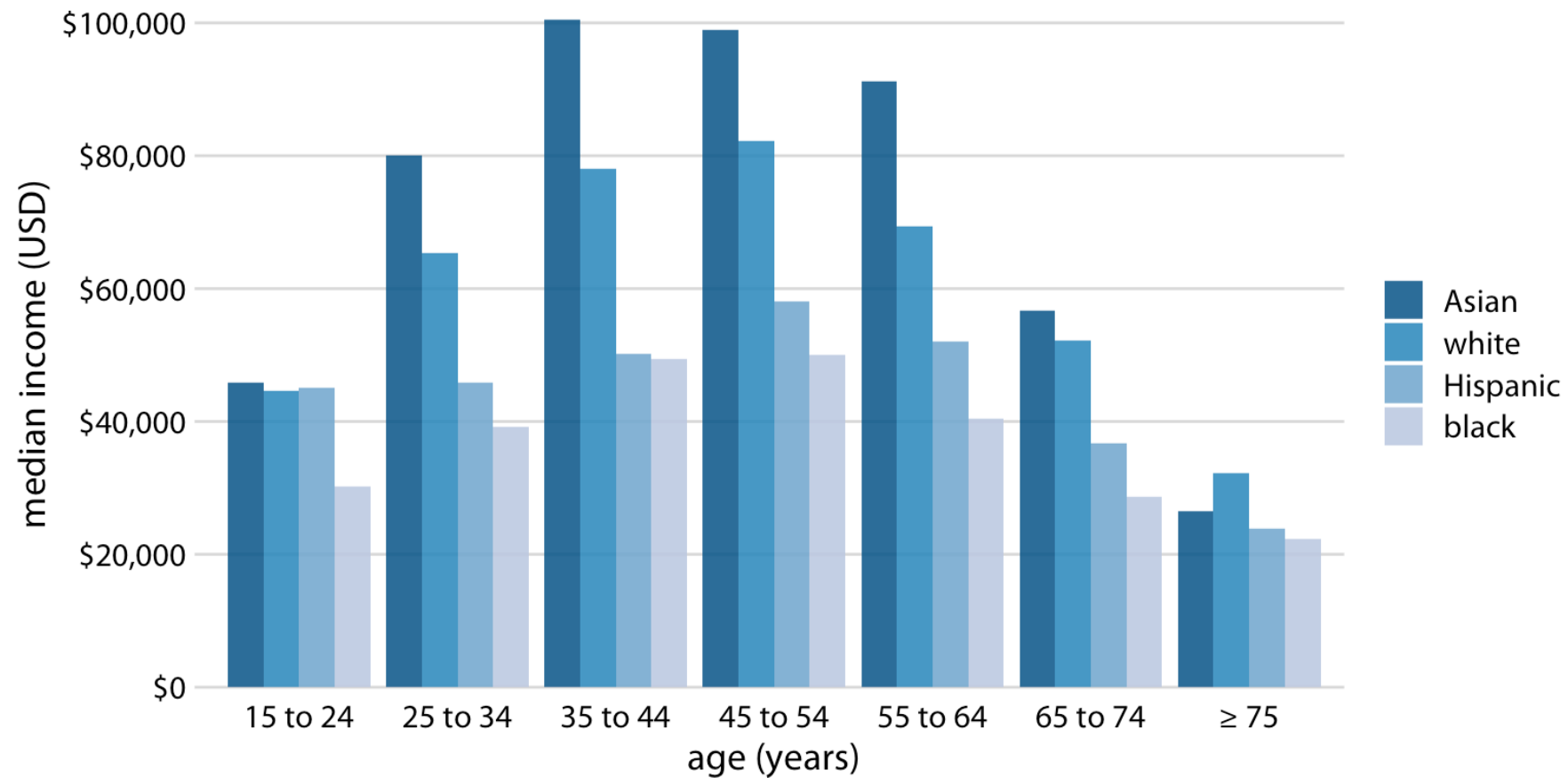
Be consistent across panels and figures

Bar plots

Bar plots

Grouped Bar Plots
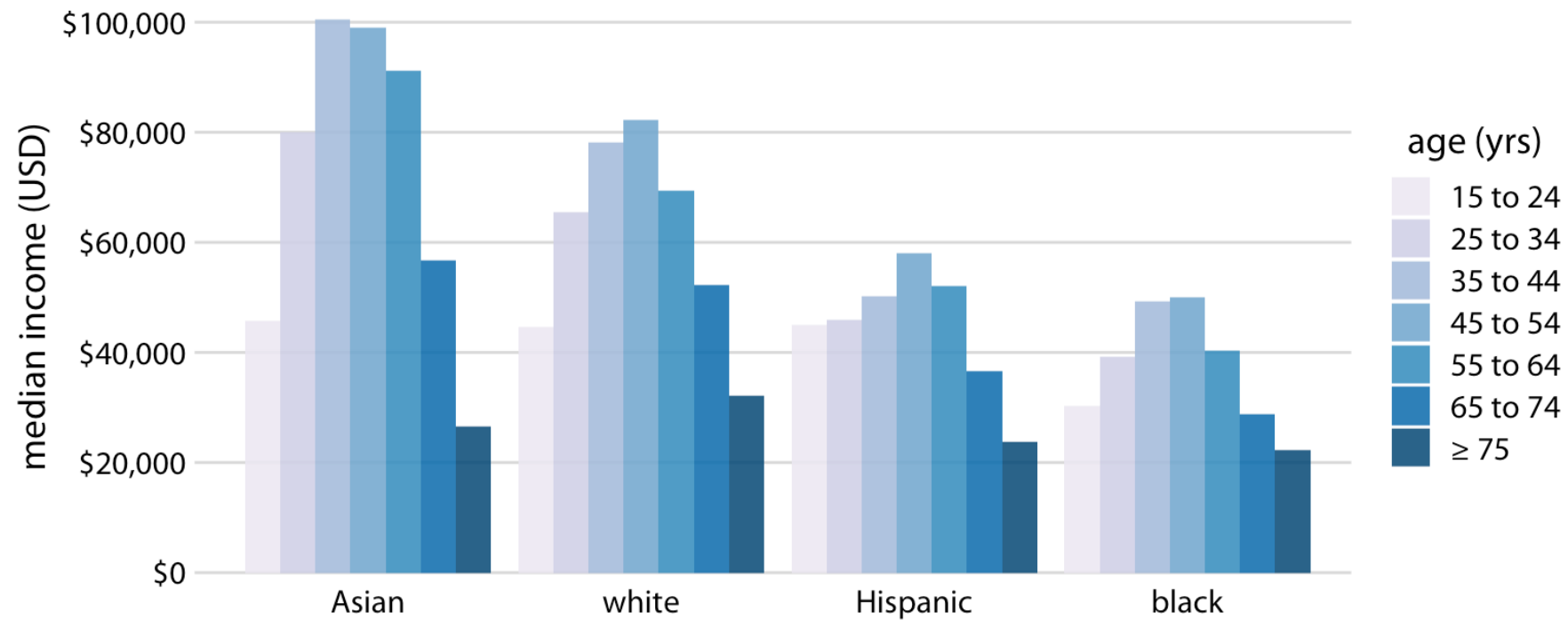
Granularity of your data
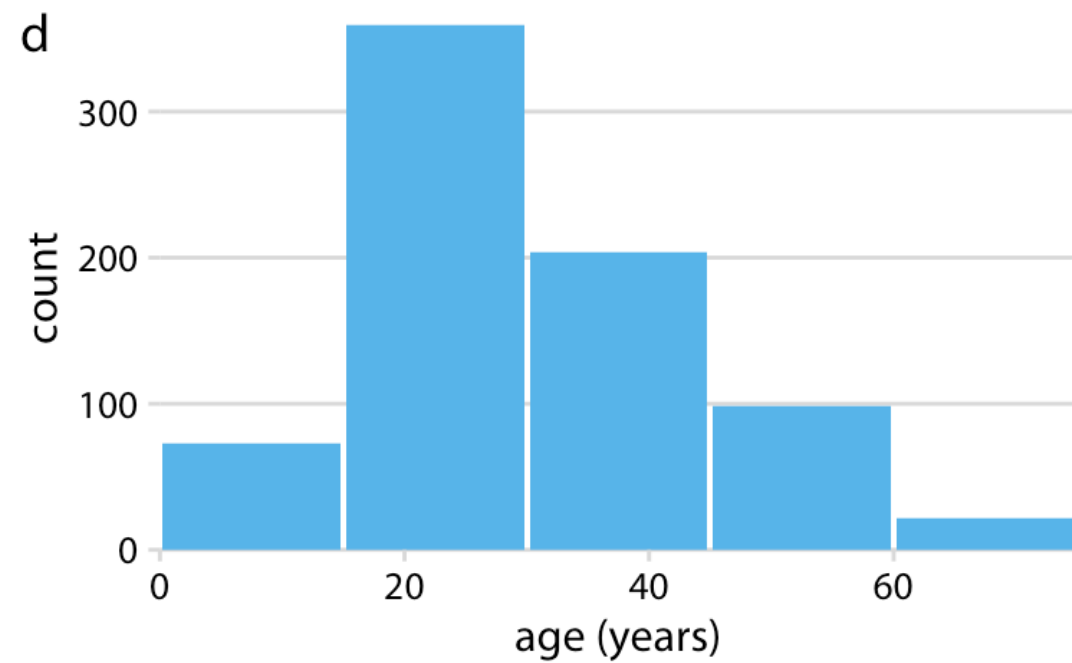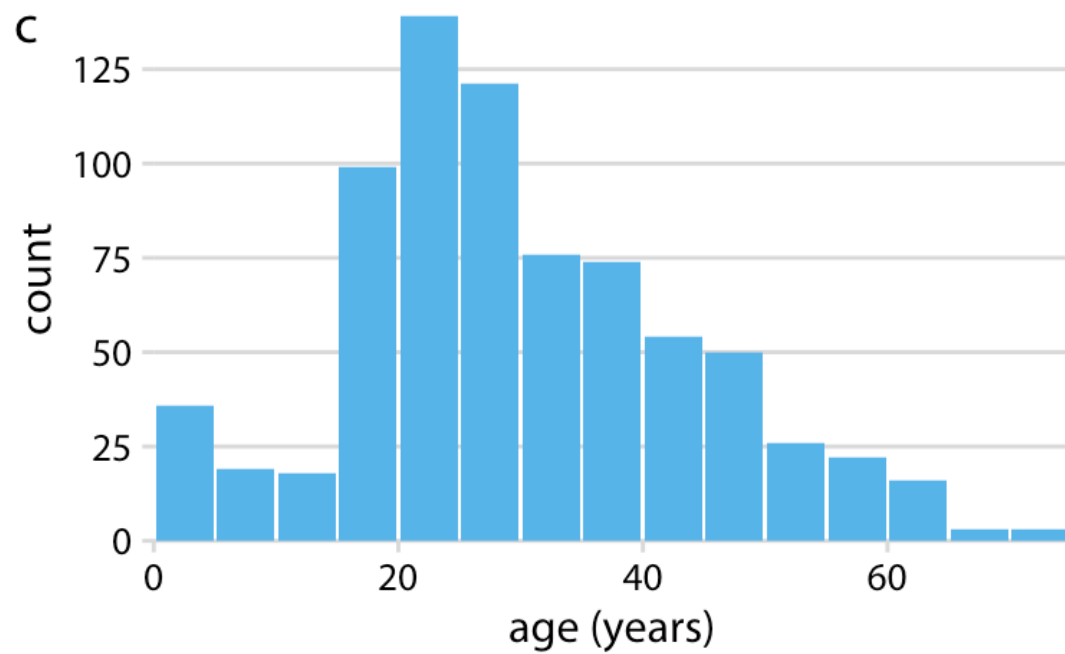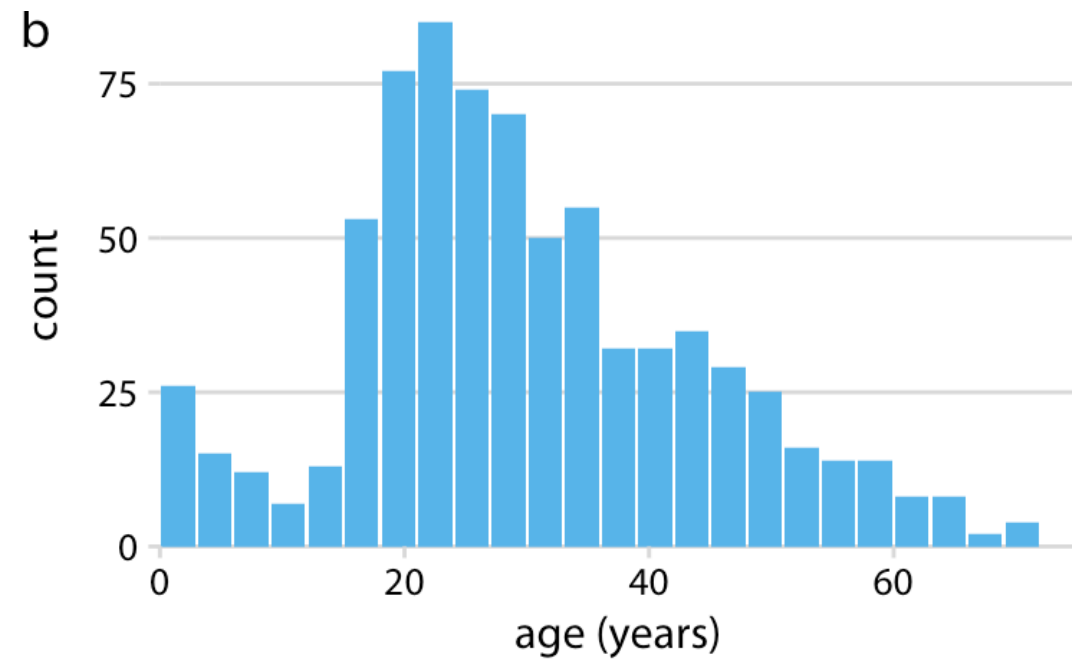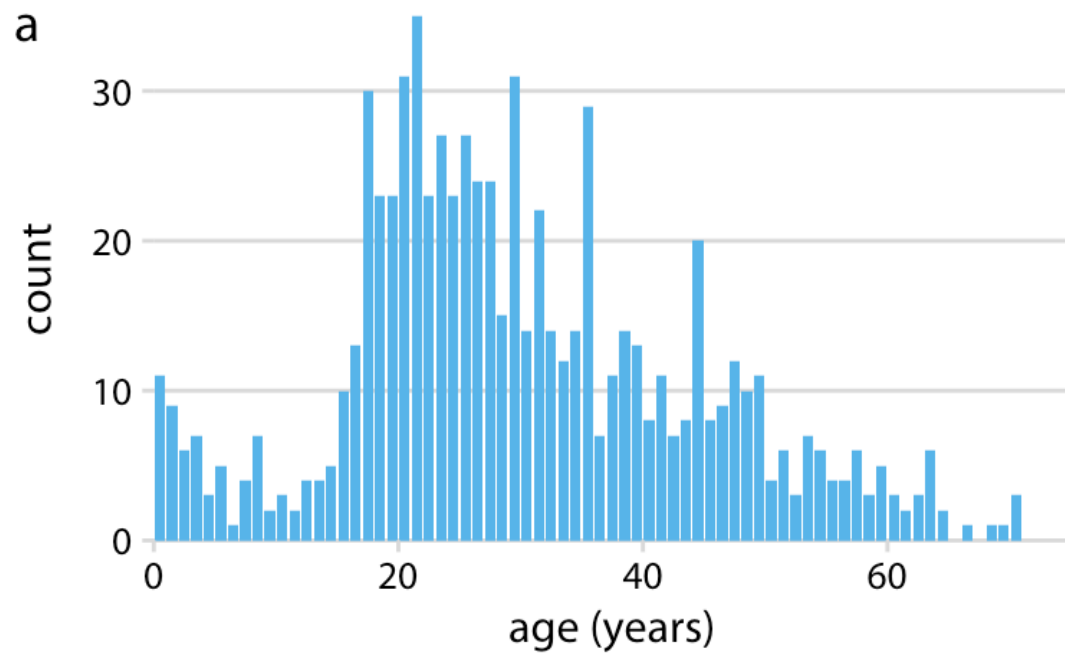
Expose yourself to lots of ideas!
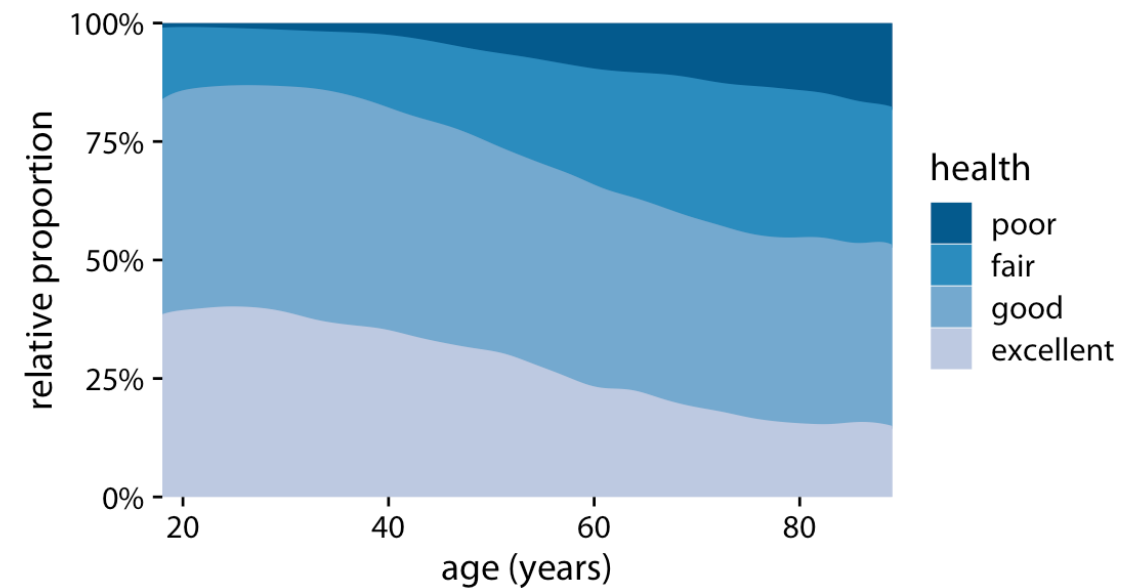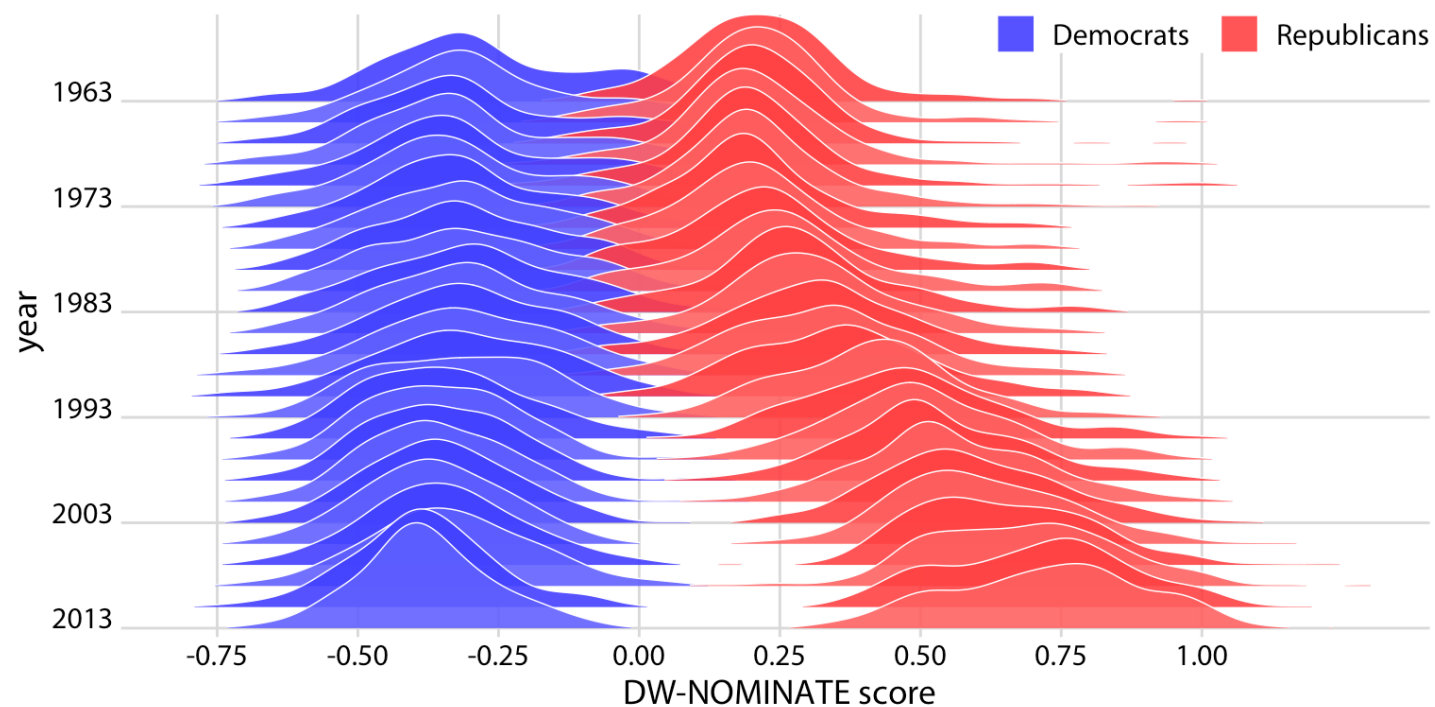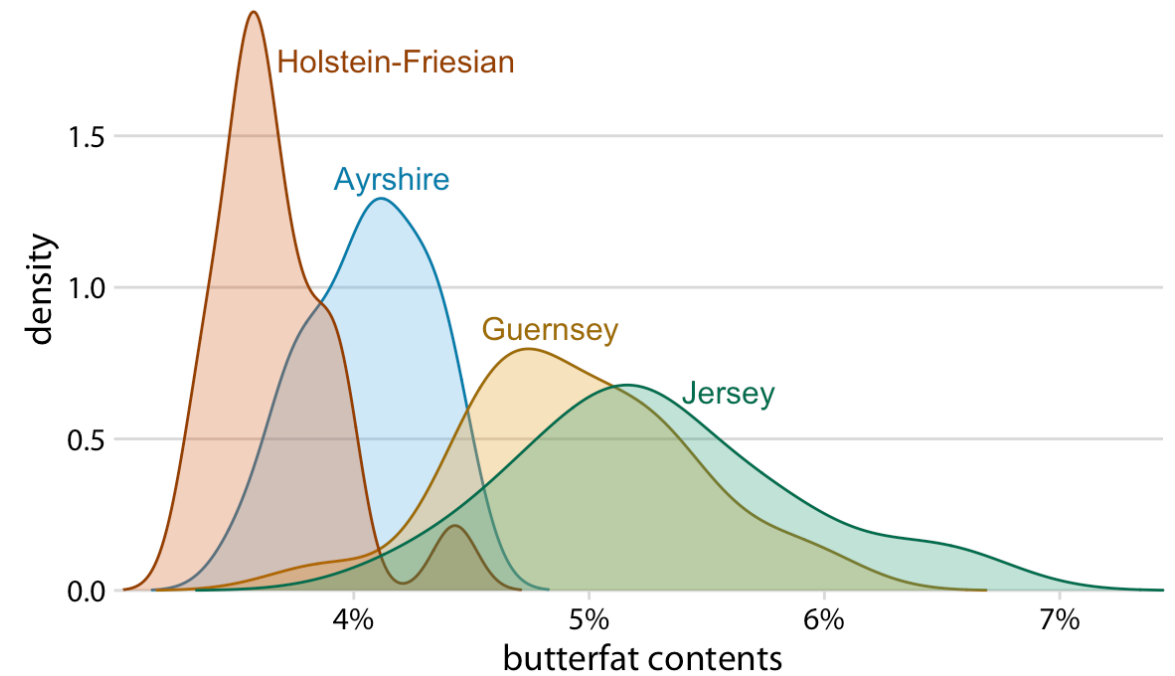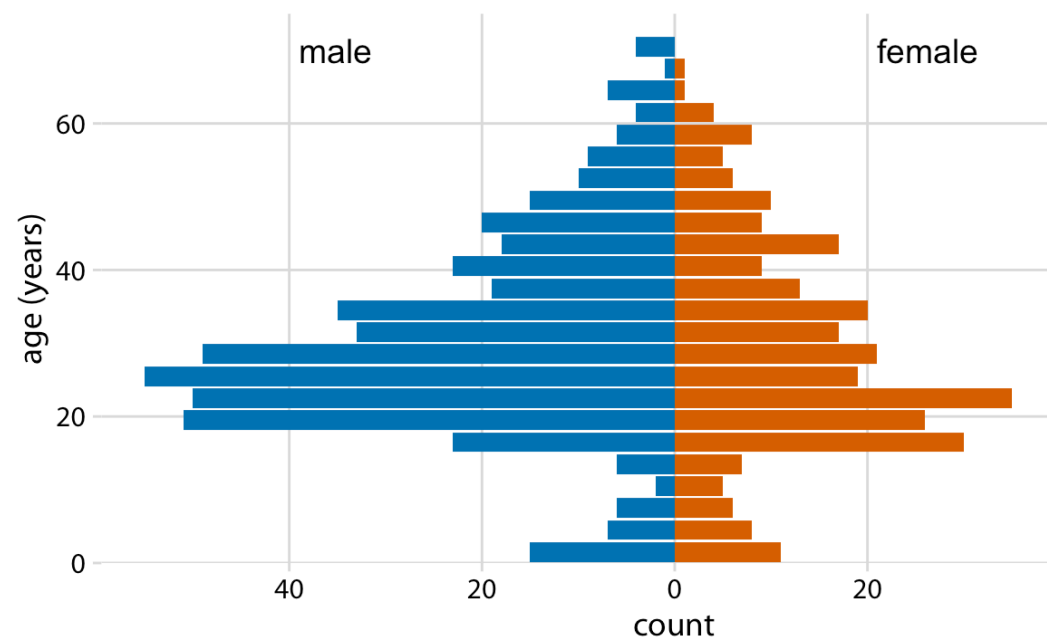
Advanced and Other Applications in R

Spatial Epidemiology and Maps

```
library(SpatialEpi)

data(NYleukemia)
sp.obj <- NYleukemia$spatial.polygon
centroids <- latlong2grid(NYleukemia$geo[, 2:3])
population <- NYleukemia$data$population
cases <- NYleukemia$data$cases

plotmap(cases/population, sp.obj, log=TRUE, nclr=5)
points(grid2latlong(centroids), pch=4)
```
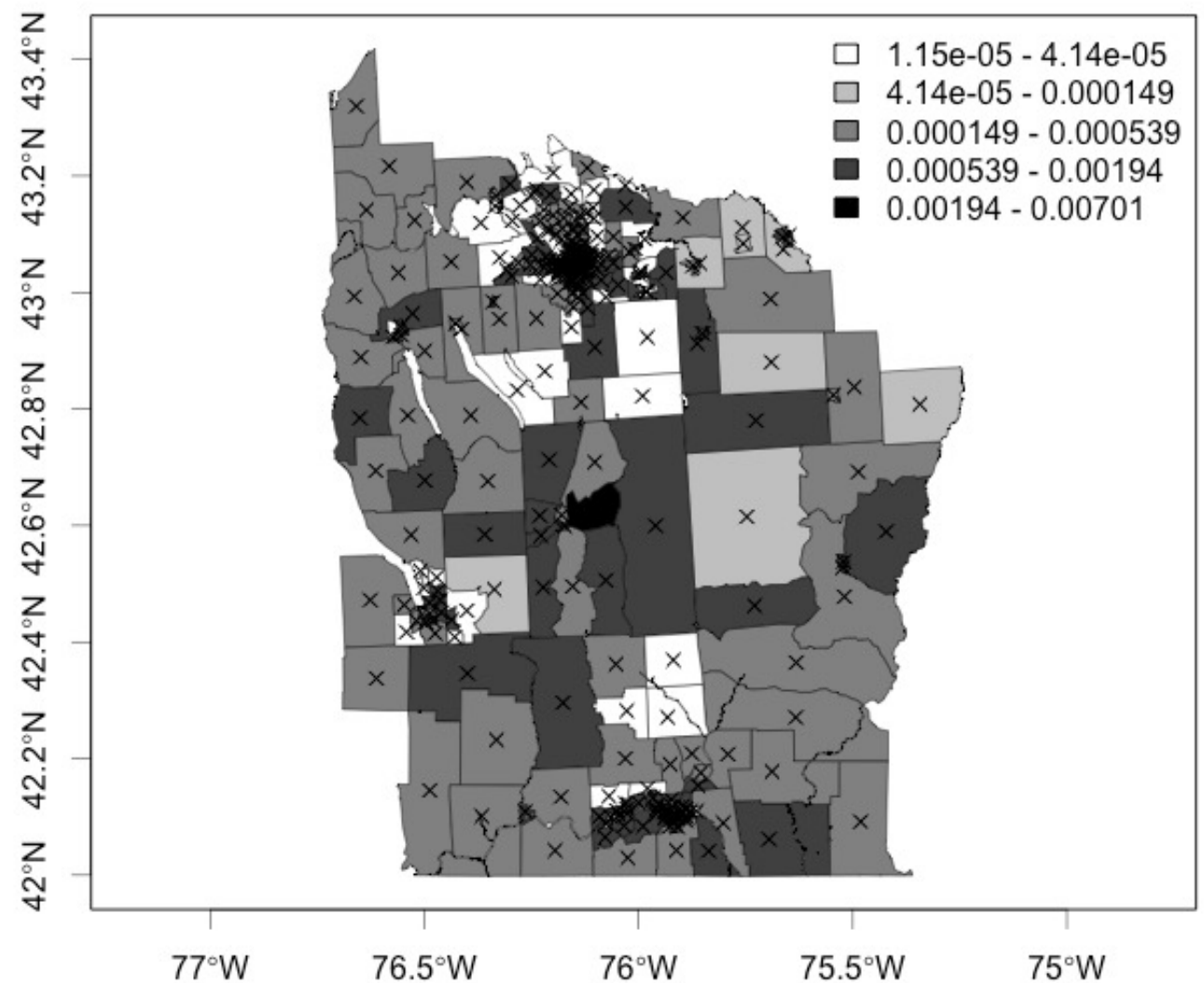
Anatomical Mapping

CerebroViz

https://github.com/ethanbahl/cerebroViz


```
library("cerebroViz")
data(cerebroEx)
head(cerebroEx)[, c(1:7)]
```

COMICS

https://github.com/y-popov/COMICS

Animation / Interactivity

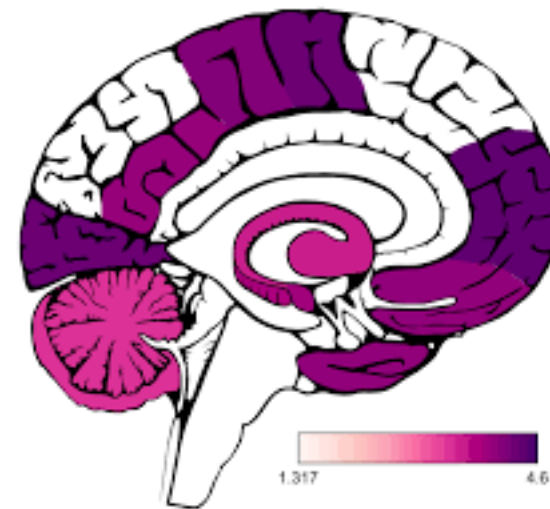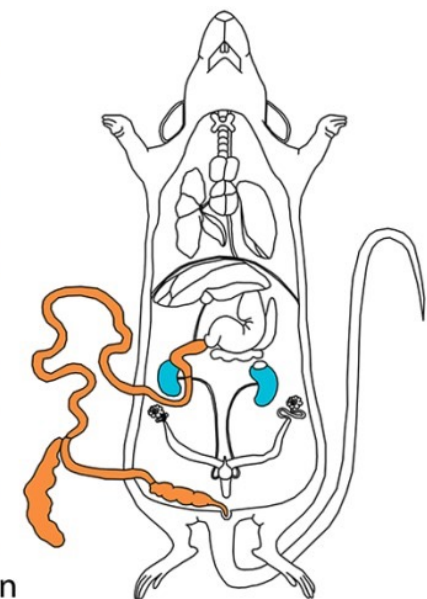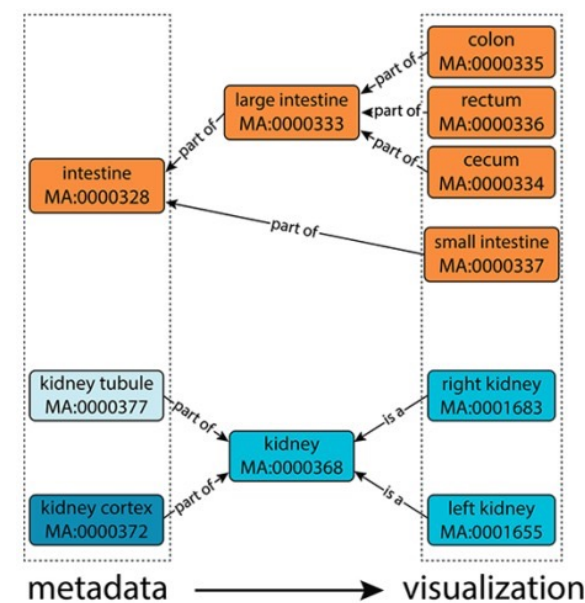| Indicator Name	2011	2012	2013	2014	2015	2016	Average	Improvement
Prevalence of Obesity	19.1	23.6	23.3	20.5	24.0	23.2	22.28	-21.47
Prevalence of Tobacco Use	17.4	15.0	15.3	12.2	16.6	16.7	15.53	4.02
Prevalence of Cardiovascular Disease	5.0	4.9	1.5	4.4	4.9	6.2	4.48	-24.00
Prevalence of Diabetes	8.0	7.2	9.3	7.2	7.5	10.4	8.27	-30.00