

- Make design appropriate (trend/data is clearly visible)
- Bad designs: wrong, bad (misleading, unclear), ugly
- Good designs: professional (labels, title, caption), Accessible (colorblind friendly palette  $\rightarrow$  scale - (fill or color) - (color)), Ethical (not misleading)

## Wrangling

- arrange: orders data from low to high according to specified column, (high to low if column is wrapped in desc())
- rows  $\leftarrow$  - filter: creates subset such that all obs. return true for given condition(s)
- col  $\leftarrow$  - select: creates subset of specified columns
- mutate: add new column or modify existing one
- group\_by: groups rows by each cat. in specified column
- summarize: takes a num. summary (sum, mean, median, etc.), name = TRUE
- Together, compares dataset to summary for each group

## Reshaping

- cols = values = drop na
- Pivot\_longer: (names\_to, values\_to) compresses a group of columns (cols = x) into 1 column of col. names and 1 of col. values
- Pivot\_wider: (names\_from, values\_from) expands 1 col. into multiple, 1 col. for names, 1 for values
- names\_prefix: k: arg that removes substr in pivot longer, adds prefix in Pivot\_wider

## Joining

left\_set |> join(right\_set)

