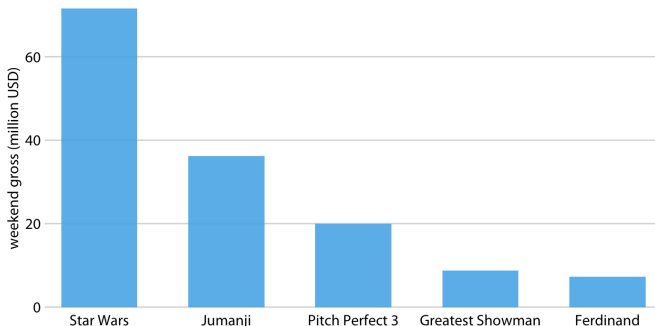# Fundamentals of Data Visualization

Chapter 5

April 25, 2023
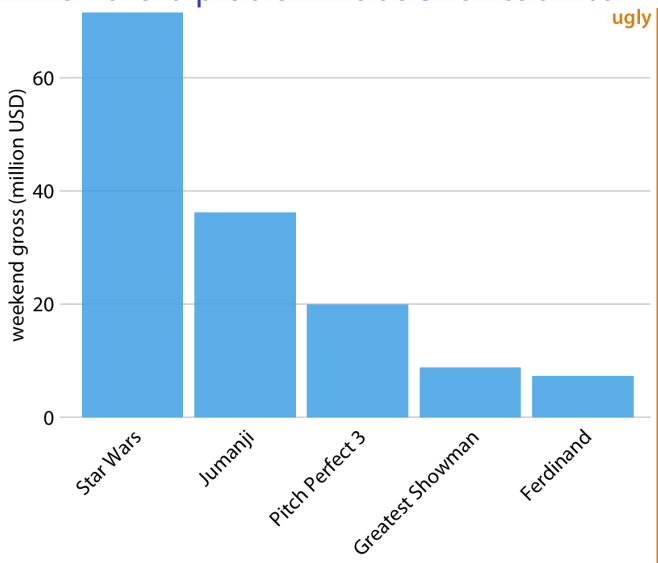
Visualizing Amounts

- In many scenarios, we are interested in the magnitude of some set of numbers.
  - total sales volume of different brands of cars
  - total number of people living in different cities
  - age of olympians performing different sports
- The standard visualization is the bar plot
- Alternatives are the dot plot and the heatmap.

Bar chart

Rank	Title	Weekend gross
1	Star Wars: The Last Jedi	$71,565,498
2	Jumanji: Welcome to the Jungle	$36,169,328
3	Pitch Perfect 3	$19,928,525
4	The Greatest Showman	$8,805,843
5	Ferdinand	$7,316,746

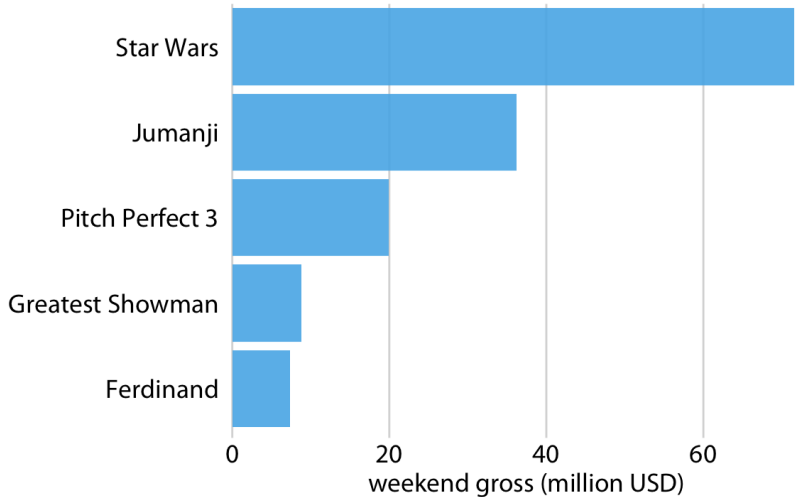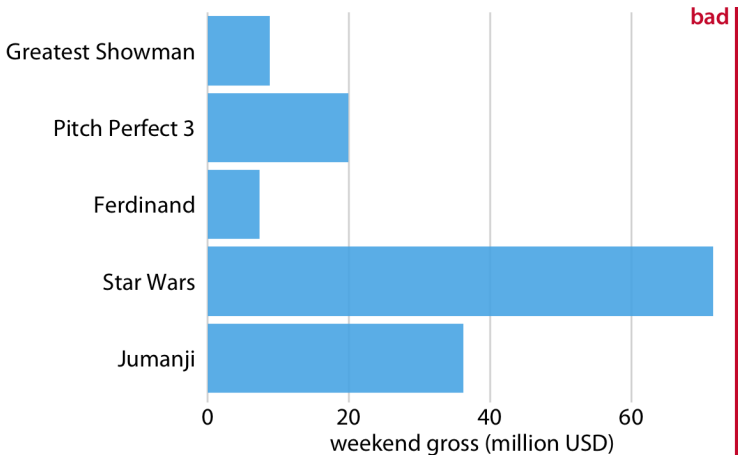# Bar chart problem: labels for each bar

- Rotated labels are ugly

Better: horizontal bars

A horizontal bar chart of weekend gross (million USD):

- Star Wars: ~72
- Jumanji: ~36
- Pitch Perfect 3: ~20
- Greatest Showman: ~8
- Ferdinand: ~7

x-axis: weekend gross (million USD), with gridlines at 0, 20, 40, 60

Order matters

weekend gross (million USD)
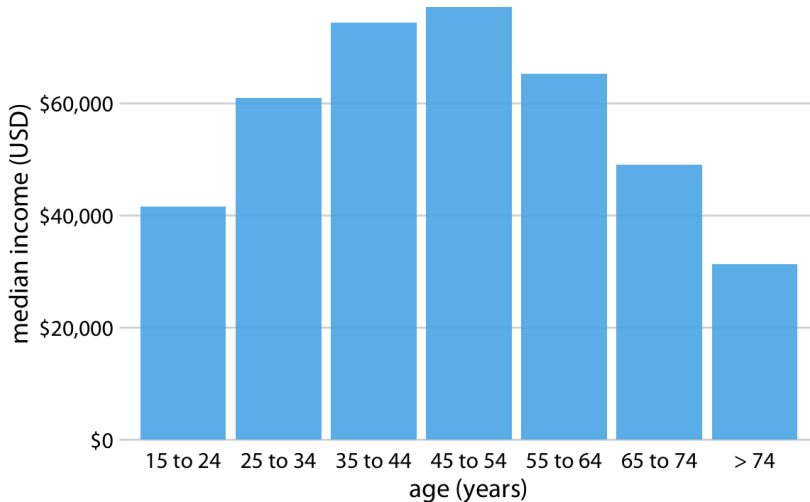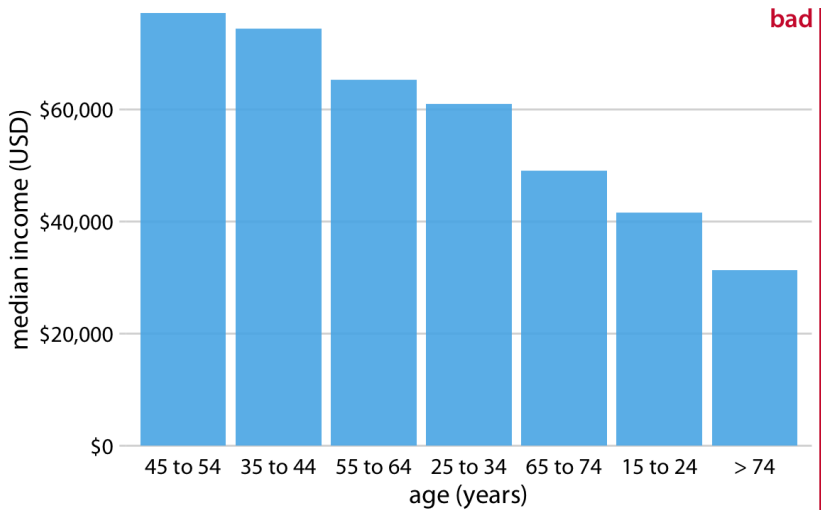
- Confusing and difficult to read
- If the bars represent unordered categories, order them by ascending or descending data values.
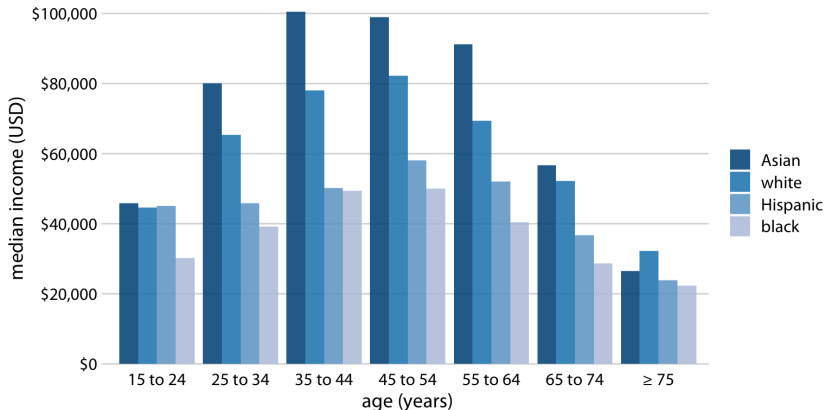
Use natural orders
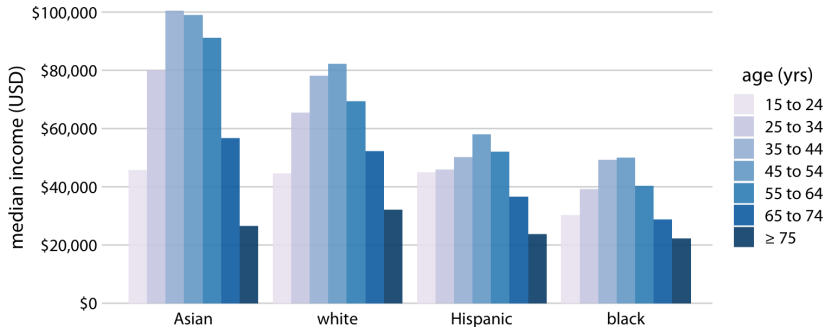
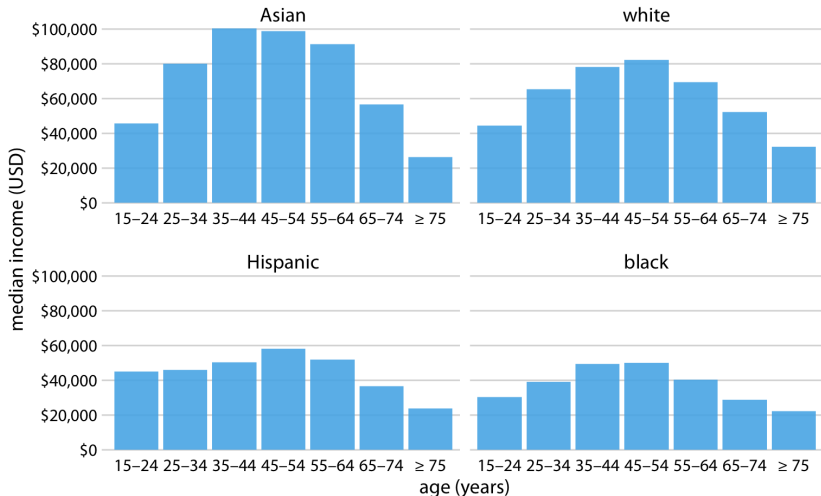# Sometimes sorting by bar length makes no sense

Grouped bar chart

- More than one category
- Can be confusing
  - e.g. difficult to compare median incomes across age groups for a given racial group

Replotting can help

- Makes it easy to compare incomes within racial groups

Use four plots instead of four colors

- Generally easier to see position than color