

# **STAT 100: Week 2**

**Ricky's Section**

## Introductions and Attendance

**Introduction:** Name

**Question of the Week:** What song/artist is currently on repeat?

# Important Reminders

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**Join our Slack: #section-d003**

<https://join.slack.com/share/enQtNzY3NDUxNTQxMzkwOS1lNzVhZWQxN2ZmYWMyYThlMzIyYmM4ZmNiMTJmOWViZGE2MzQ5NWVkMTM2YWY4MWRhMWZiZDAxOWZlZDYxYmYx>

## Lecture

- Please remember to **watch lecture/read the textbook** before **Monday**
- **“Pre-quiz”** is due **Monday at noon**
- Material on Canvas (under Modules)
- If you have any questions, use **Slack** and **Office Hours!**

# WEEKLY FLOW

SUN	MON	TUE	WED	THU	FRI	SAT
	12:00 pm Pre-Quiz Due				12:00 pm Post-Quiz Due	
	1:30 – 2:45 pm Class: Option 1		1:30 – 2:45 pm Class: Option 2			<i>watch lecture/ read textbook</i>
				Section		
		11:59 pm Problem Set Due Discussion Post Due				
			Many, Many Office Hours			

# **Content Review: Week 2**

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# Grammar of Graphics

- **Dataset**: Data frame containing data/info
- **Geom**: Geometric representation of data (as a shape), such as bars or points
- **Aesthetic**: How data is mapped to aesthetic/visual properties of geoms, such as color, scale, x-direction, or y-direction



## Grammar of Graphics: Example

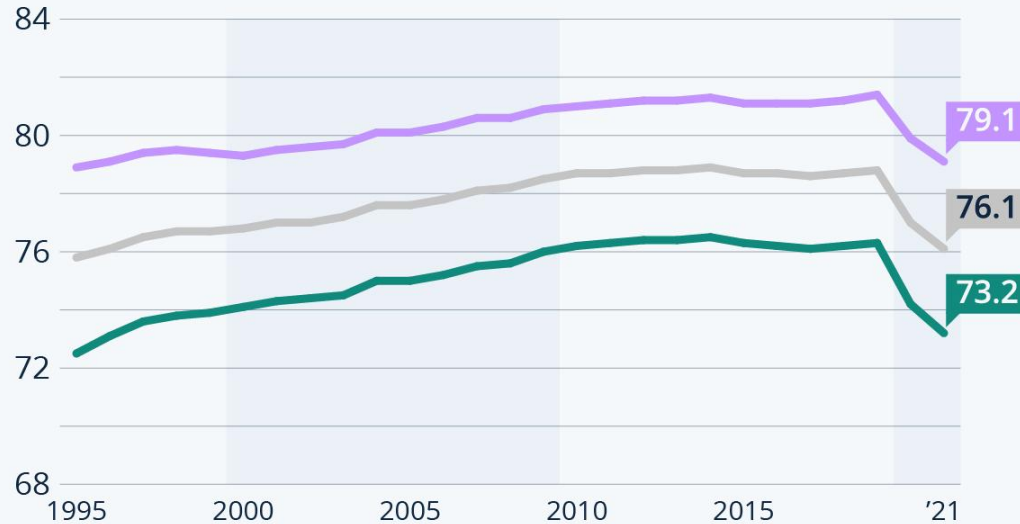
[https://drive.google.com/file/d/1nAVN8\\_qi1vWCwllXjgat7MukSv5Wgpqm/view?usp=sharing](https://drive.google.com/file/d/1nAVN8_qi1vWCwllXjgat7MukSv5Wgpqm/view?usp=sharing)

# U.S. Life Expectancy Hits Lowest Point Since 1996

Overall life expectancy at birth in years



Male Overall Female























Source: National Vital Statistics System, National Center for Health Statistics



## Sexual harassment charges, by industry

Among charges filed by women, fiscal years 2005-2015

INDUSTRY	CHARGES FILED
Accommodation and food services	4,801 
Retail trade	4,380 
Health care and social assistance	3,898 
Manufacturing	3,741 
Office administration and waste management	2,350 
Public administration	2,239 
Professional, scientific and technical services	1,944 
Transportation and warehousing	1,601 
Finance and insurance	1,380 
Educational services	1,340 
Other services (except public administration)	1,003 
Information	962 
Construction	774 
Wholesale trade	752 
Real estate rental and leasing	611 
Arts, entertainment and recreation	537 
Agriculture, forestry, fishing and hunting	276 
Management of companies and enterprises	213 
Utilities	211 
Mining	157 

Not including 35,304 charges filed without a specified industry

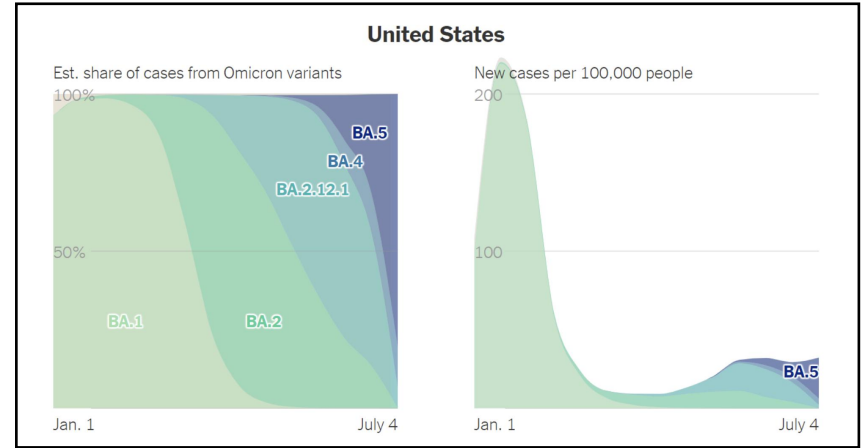
SOURCE: EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

## Color Palettes

- **Sequential**: Color progresses from low to high value
- **Diverging**: Color splits in opposite directions, departing from a meaningful middle
- **Qualitative**: Color only distinguishes cases from each other, with no inherent order

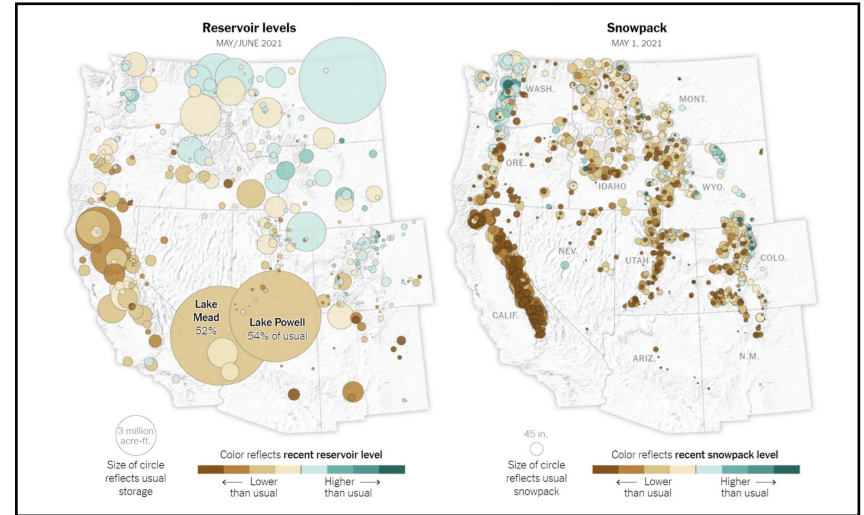
# Sequential

**Sequential**: Color progresses from low to high value



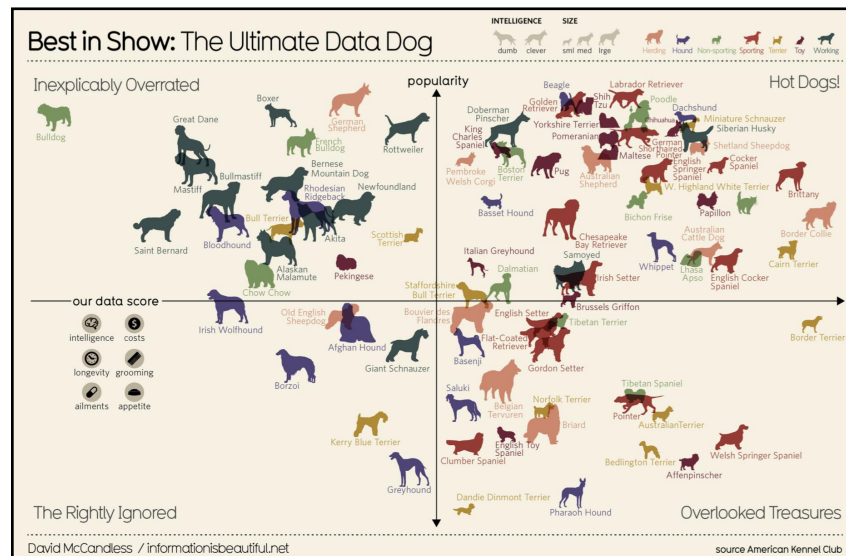
# Diverging

**Diverging:** Color splits in opposite directions, departing from a meaningful middle



# Qualitative

**Qualitative:** Color only distinguishes cases from each other, with no inherent order

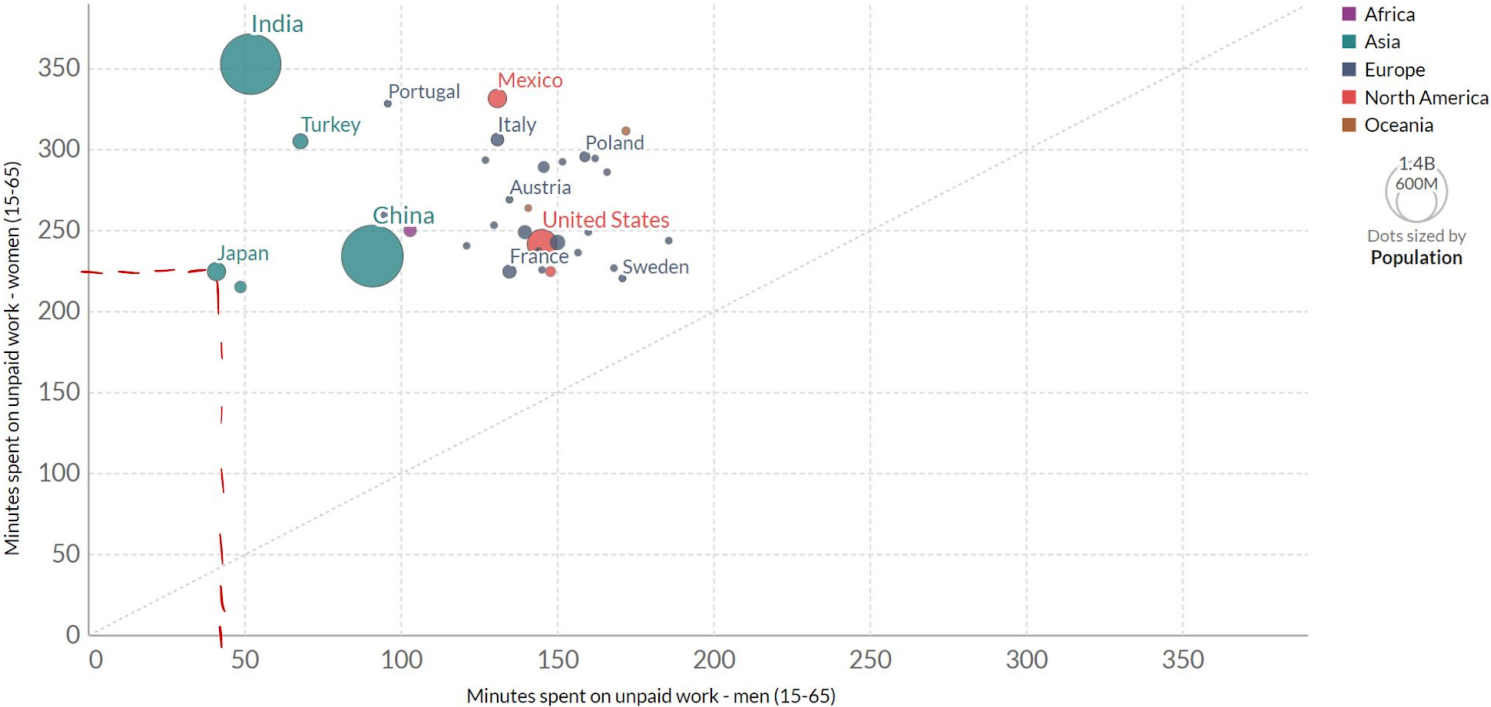


# Time spent on unpaid work, per day, men vs women

Average minutes spent on unpaid work or study, per day, by sex (ages 15-65). Unpaid work activities include: routine housework; care for household members; child care; adult care; care for non-household members; volunteering; travel related to household activities; other unpaid work. Estimates come from time-use surveys and include both weekdays and weekends. The survey years differ across countries. See the source description for the survey year used for each country.



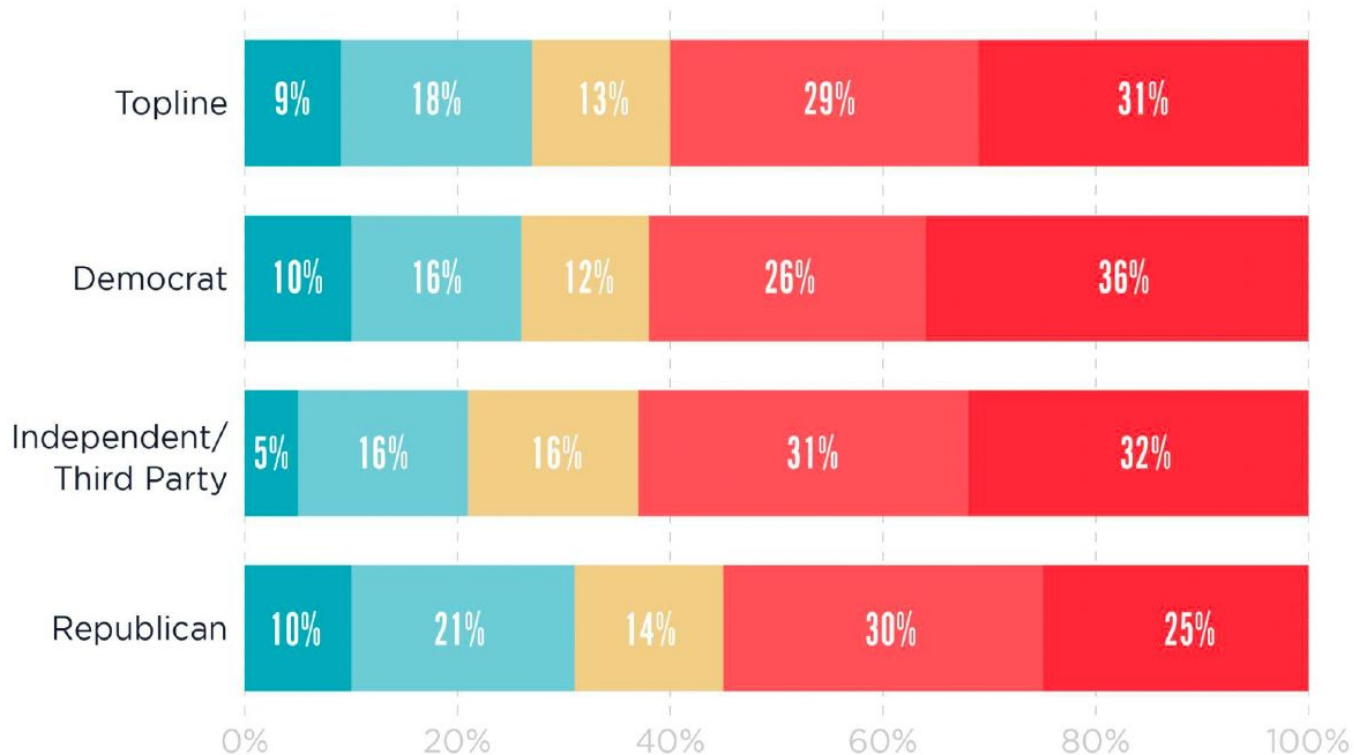
Select countries





# Do you support or oppose your local prosecutor seeking a death sentence against a person with a diagnosed mental illness?

● STRONGLY SUPPORT   ● SOMEWHAT SUPPORT   ● DON'T KNOW   ● SOMEWHAT OPPOSE   ● STRONGLY OPPOSE



## Types of Variables

- **Numerical variables**: Take on numerical values, which you can measure and “do math”
  - *For example, salary: \$100k, \$50k, \$70k, ...*
- **Categorical variables**: Take on values that are labels, which you use to divide into groups
  - *For example, income level: low, middle, high, ...*

## Explanatory vs. Response

- **Explanatory variable**: Expected cause (“input”)
- **Response variable**: Expected result of explanatory variable (“output”)
  - *For example, measuring the effect of education level (explanatory) on salary (response)*

## Choosing the Right Graph

<https://drive.google.com/file/d/1T1rovHS3l1rapzRH6fGNclS2fn6lu7gs/view?usp=sharing>

**Questions?**

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# P-Set 1

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Have a great rest  
of your week!