

## Measures of centrality and spread

→ Categorical data only has measures of center and spread when ordinal

Spread Ex: Class level (Fr, So, Jr, Sr, Grad)

Range 311: Fr-Grad

Range CS460: Jr-Grad

Quantiles:  $Q_1, Q_3$   
 $\left. \begin{array}{l} 25\% \quad 75\% \end{array} \right\}$

## Centrality

Median: Separates top and bottom 50%

Mode: Most common observation

For non-ordinal categorical data, we only have mode

## Make a table

Mode: Public Service/Politics

Has all the info  
 but conveys it slowly, hard to highlight  
 important trends

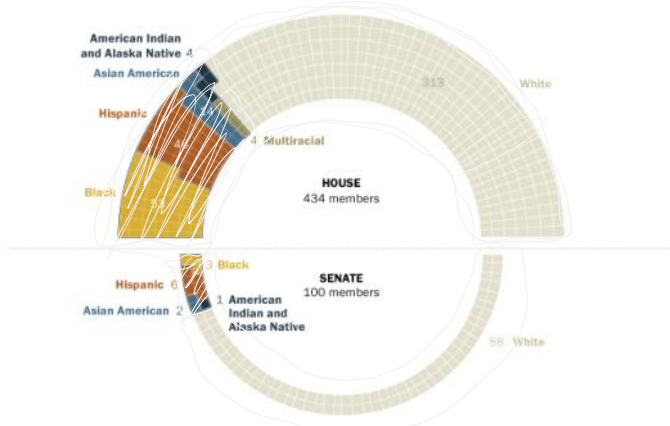
Close to Mosaic plot (not quite)

Table 1-8

Occupation	117th 2021
Acting/entertainer	0
Aeronautics	3
Agriculture	24
Business or banking	168
Clergy	6
Congressional aide	50
Education	60
Engineering	10
Journalism	13
Labor leader	20
Law	129
Law enforcement	9
Medicine	21
Military	14
Professional sports	6
Public service/politics	171
Real estate	27
Veteran	74
<b>New Occupations</b>	
Artistic/creative	4
Healthcare	16
Homemaker/domestic	8
Science	6
Secretarial/clerical	8
Technical/trade	7
Miscellaneous	3

## In the 118th Congress, the U.S. House is more racially and ethnically diverse than the Senate

Number of U.S. members of Congress who are ...



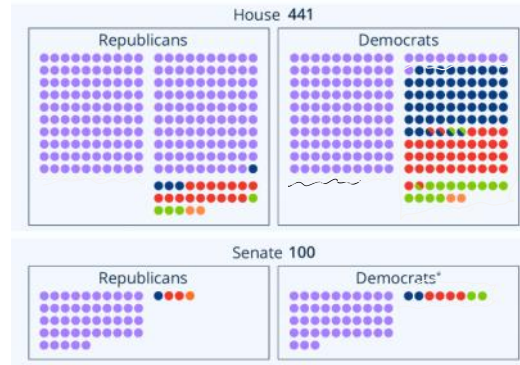
Note: The data does not include nonvoting delegates or commissioners. Figures for the 118th Congress are as of Jan. 3, 2023. Hispanics are of any race. The four members who have more than one racial or ethnic identity for the above groups are counted only once, as multiracial.  
Source: Congressional Research Service, CQ Roll Call, Brookings Institution.

PEW RESEARCH CENTER

## How Diverse Is Congress?

Members of the 118th U.S. Congress by race/ethnicity

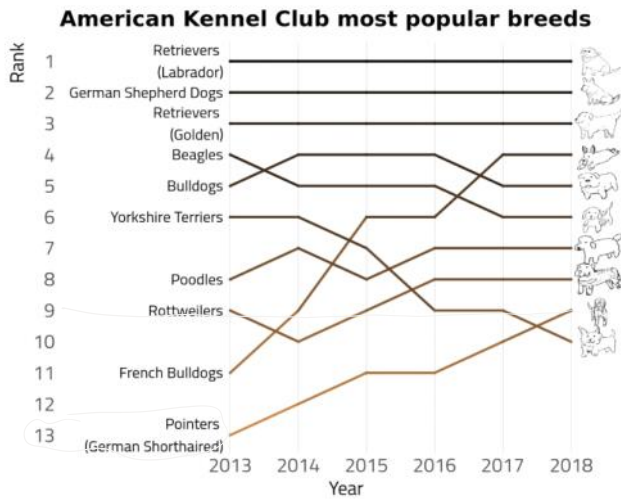
● African-American ● Latino ● White  
● Asian/Pacific Islander ● American Indian



\* and Independents (includes Kyrsten Sinema)  
Includes one representative-elect, delegates and commissioner of Puerto Rico  
As of February 27, 2023  
Sources: House.gov, Senate.gov, Statista research

Population: 118th Congress

Var: House or Senate, Race/Ethnicity, R vs D



Source: AKC registration statistics in the USA  
<https://www.akc.org/expert-advice/news/most-popular-dog-breeds-of-2018/>  
by @LuisDVerde (www.lomys.mx)

Sample of US dogs

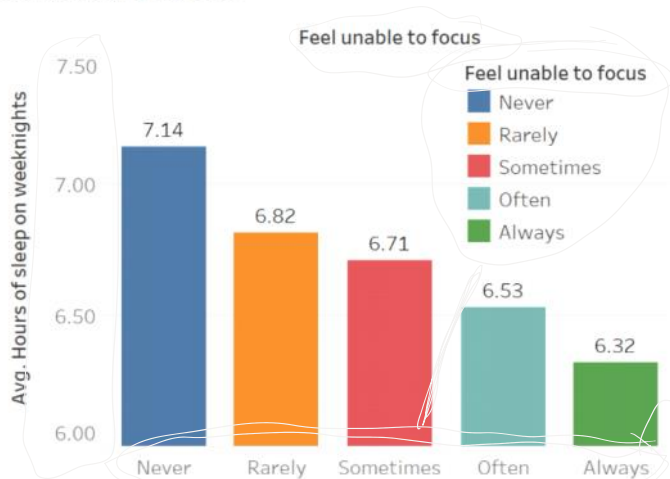
Voluntary Response

Variables: Year of registration

Type of dogs

Mode: Labradors

Unable to focus

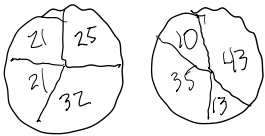
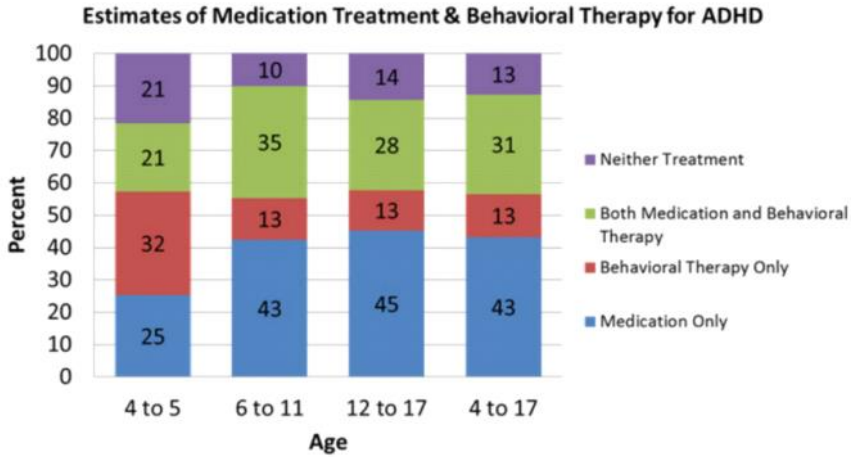
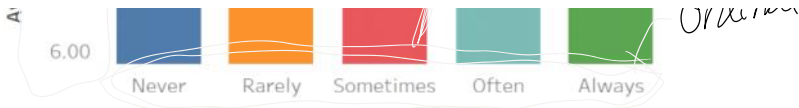


Bar graph (non-standard)  
(Pareto Diagram)  
(not intentional)

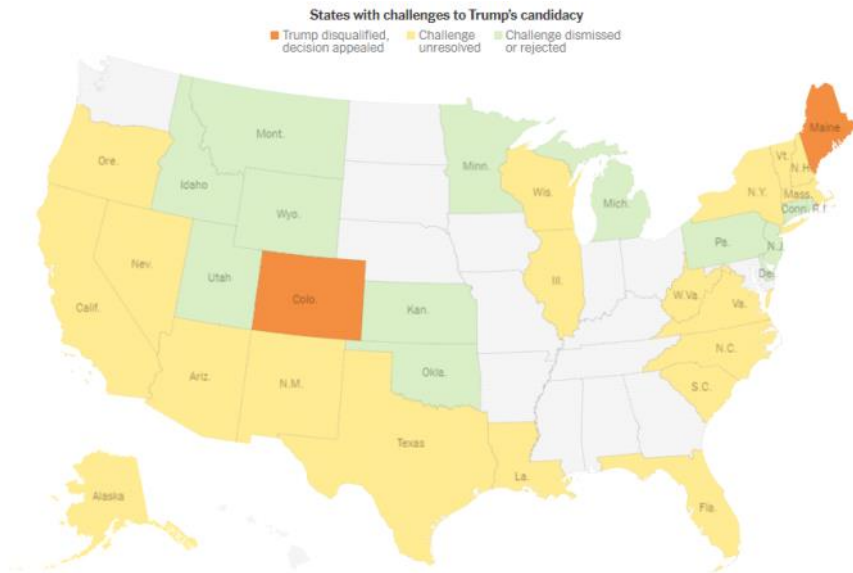
Population/Sample?

Variables: Categorical (Feel unable to focus)  
Numerical: (Avg hours of sleep)

ordinal



Stake



Stacked bar graph  
(Proportions)

Population: Adolescents  
with ADHD

Sample: ?

Var: Age (Categorical - 4 to 5, 6 to 11, 12 to 17)  
Treatment type

Population: US states

Var: State

Challenge (Categorical  
Disqual, unresolved, rejected)

