



**Cody Dunne**  
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D3, 2/2

**PREVIOUSLY...**

# D3 TUTORIAL

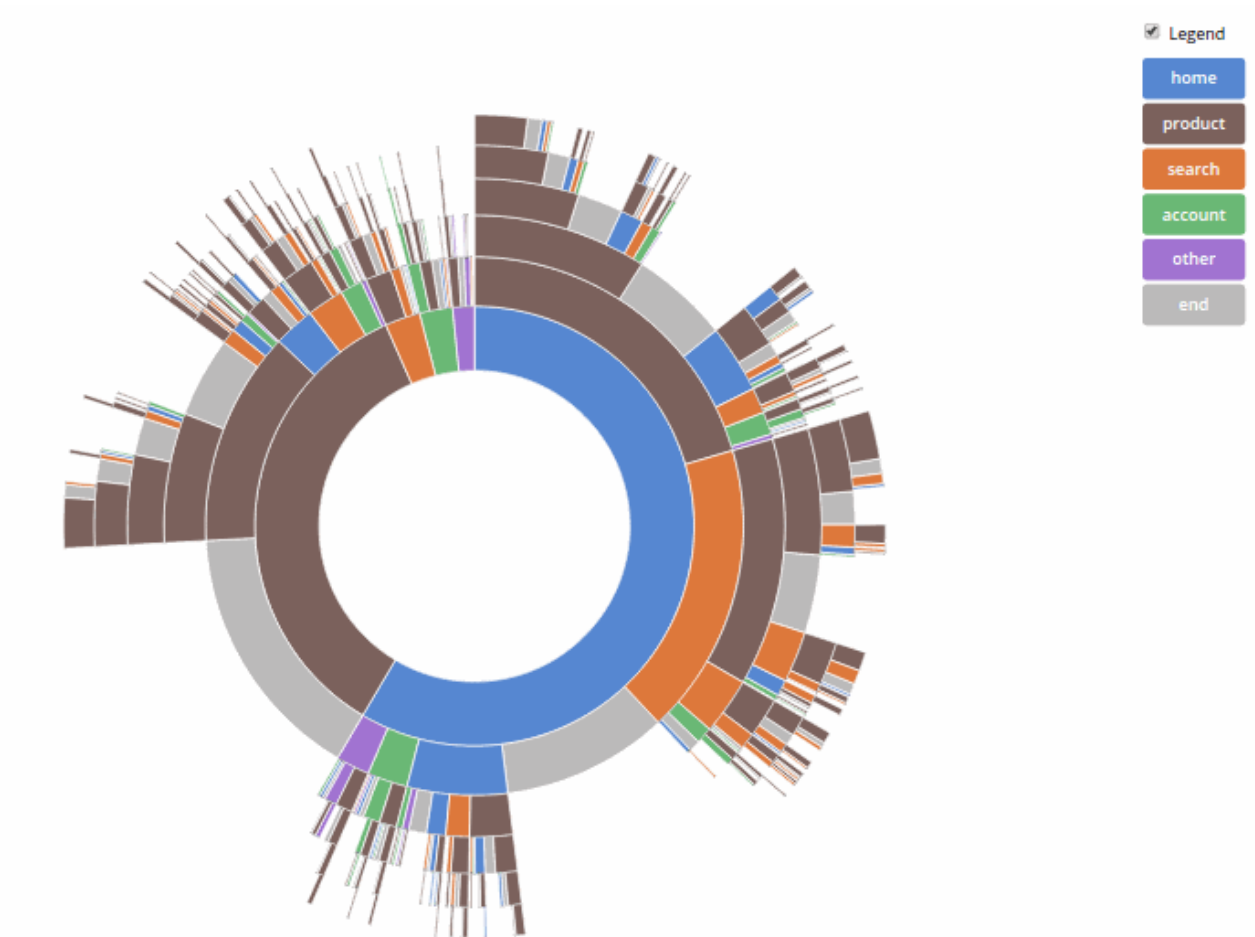
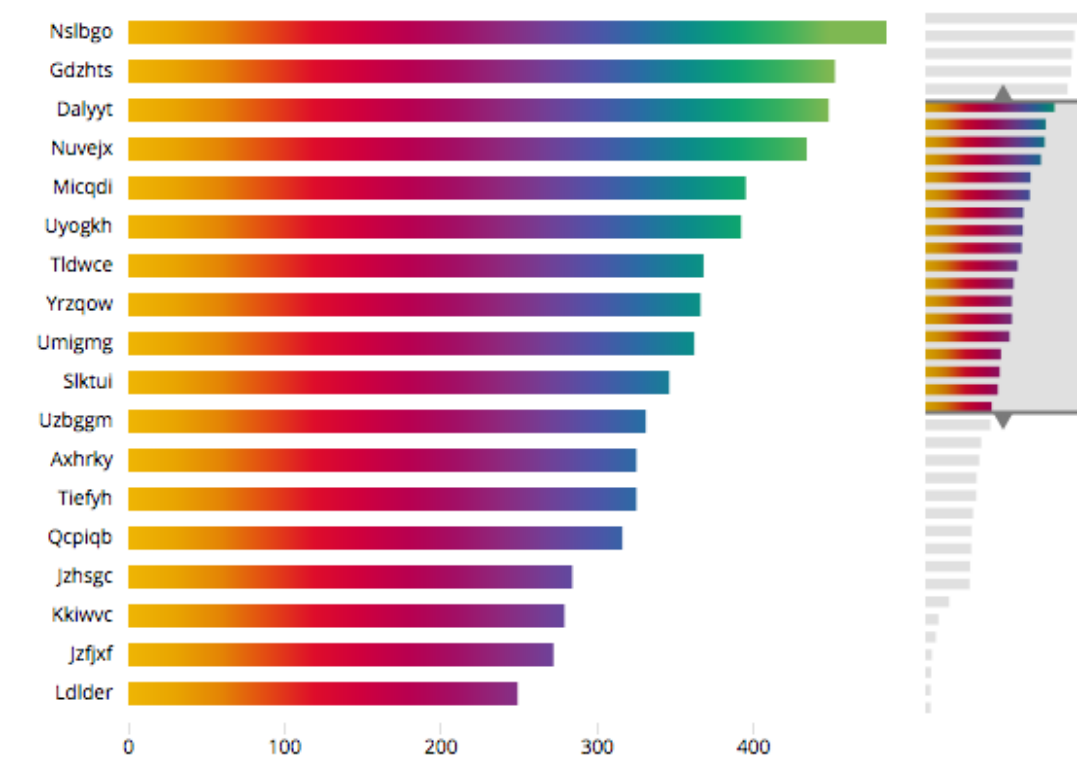
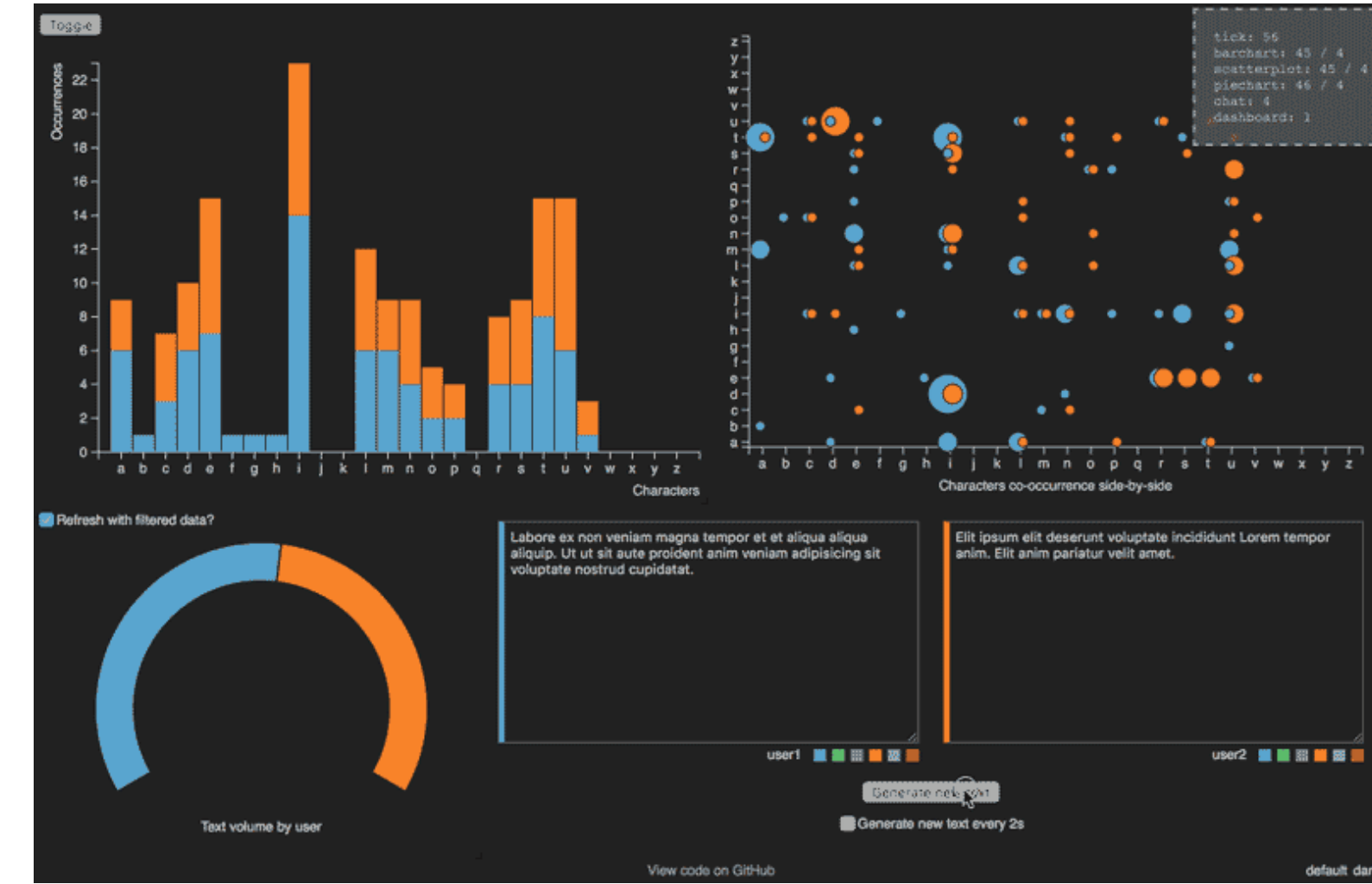




# Data Driven Documents

	A	B	C	D	E	F	G
1	Code	Name	Population	% with Health Care Coverage	% Adult current smokers	% Overweight	%Obese
2	AK	Alaska	710231	82.4	20.4	40.7	25.2
3	AL	Alabama	4779736	83.8	21.9	37.0	33.0
4	AR	Arkansas	2915918	78.7	22.9	36.3	30.9
5	AZ	Arizona	6392017	89.5	13.5	40.7	24.7
6	CA	California	37253956	82.2	12.1	36.9	24.7
7	CO	Colorado	5029196	83.6	16.0	36.2	21.4
8	CT	Connecticut	3574097	90.2	13.2	37.5	23.0
9	DC	District of Columbia	601723	93.5	14.8	34.8	22.7
10	DE	Delaware	897934	90.0	17.3	35.3	28.7
11	FL	Florida	18801310	83.0	17.1	37.8	27.2
12	GA	Georgia	9687653	83.7	17.6	35.3	30.4
13	HI	Hawaii	1360301	93.2	14.5	34.1	23.1
14	IA	Iowa	3046355	89.6	16.1	37.1	29.1
15	ID	Idaho	1567582	80.9	15.7	36.0	26.9
16	IL						28.7
17	IN						30.2
18	KS						30.1
19	KY						31.8
20	LA						21.7

Month	Salesman	Region	Product	No. Customers	Net Sales	Profit / Loss
Jan-07	Joseph	North	FastCar	8	1,592	563
Jan-07	Joseph	North	RapidZoo	8	1,088	397
Jan-07	Joseph	West	SuperGlue	8	1,680	753
Jan-07	Joseph	West	FastCar	9	2,133	923
Jan-07	Joseph	West	RapidZoo	10	1,610	579
Jan-07	Joseph	Middle	SuperGlue	10	1,540	570
Jan-07	Joseph	Middle	FastCar	7	1,316	428
Jan-07	Joseph	Middle	RapidZoo	7	1,799	709
Jan-07	Lawrence	North	SuperGlue	8	1,624	621
Jan-07	Lawrence	North	FastCar	6	726	236
Jan-07	Lawrence	North	RapidZoo	9	2,277	966
Jan-07	Lawrence	West	SuperGlue	6	714	221
Jan-07	Lawrence	West	FastCar	9	2,682	1,023
Jan-07	Lawrence	West	RapidZoo	6	1,500	634





# Data Driven Documents

- <https://d3js.org/>
- D3 is a javascript library to manipulate documents based on data.
  - **not** a charting or data visualization library (it's not like Altair, ggplot2, plotly, matplotlib, seaborn...)
  - [D3 is not a Data Visualization Library - Elijah Meeks](#)
  - no out of the box charts (no functions to automatically build a chart)

# Example code:

[https://github.com/NEU-DS-4200-S22/D3\\_Examples\\_Base](https://github.com/NEU-DS-4200-S22/D3_Examples_Base)

[https://github.com/NEU-DS-4200-S22/D3\\_Examples\\_Complete](https://github.com/NEU-DS-4200-S22/D3_Examples_Complete)

**AND NOW...**

# Recall Our Attribute Types

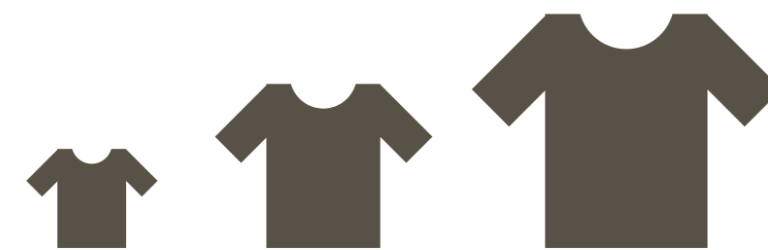
→ Categorical



e.g.,  
fruit (apple, pear, grape),  
colleges (CAMD, Khoury, COE)

→ Ordered

→ *Ordinal*



e.g.,  
sizes (xs, s, m, l, xl),  
months (J, F, M)

→ *Quantitative (continuous)*

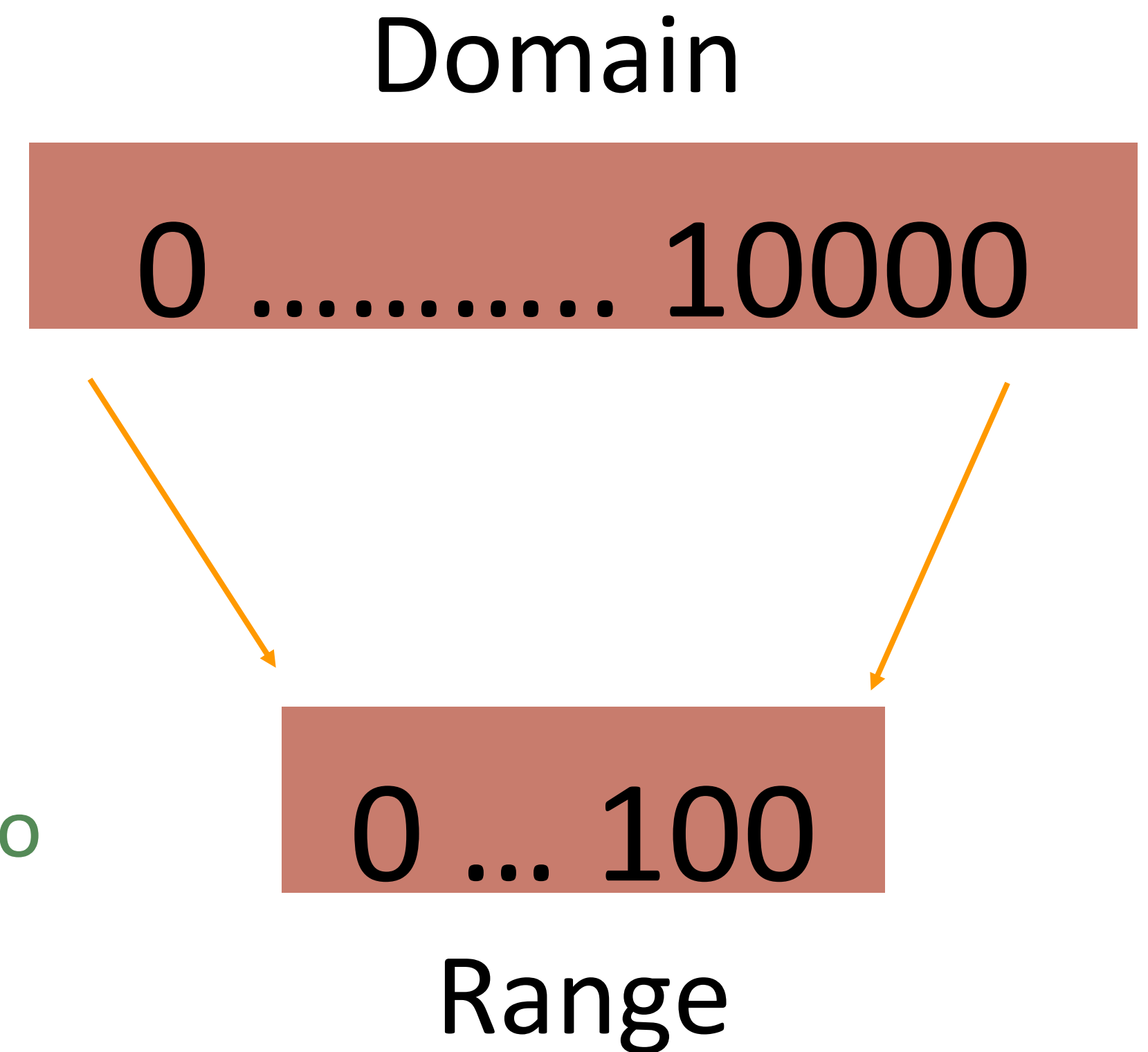


e.g.,  
lengths (1', 2.5', 5'),  
population



# Linear Scales

- `scaleLinear( )` // Quantitative attributes
- `domain( )` // Original values that you will modify
- `range( )` // Values that we want to scale our data to



→ Ordered

→ *Quantitative*



# Ordinal Scales

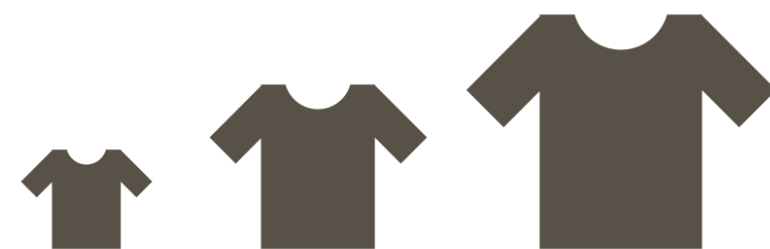
- `scaleBand( )` // categorical attributes
- `domain( )` // original values that you will modify
- `range ( )` // Values that we want to scale our data to
- `padding()` // e.g., to control the spacing in between the bars

→ Categorical



→ Ordered

→ *Ordinal*



# Barchart example



## Scatterplot example



Interactivity



# Events

- Call events with the on(event) handler
  - **mouseover**
  - **mouseout** etc.
- To target the element that dispatched the event use this keyword

# Transitions

- `.transition( )` // creates a transition
- `.duration( )` // adding duration to the transition
- `.delay( )` // effect is not going to take place until after this time

# IN-CLASS PROGRAMMING —

## D3 LINE CHART

[neu-ds-4200-s22.github.io/in-class/d3-line-chart](https://neu-ds-4200-s22.github.io/in-class/d3-line-chart)

*~45 min*



# ANNOUNCEMENTS:

- \* GOING HYBRID: TUESDAYS PRIMARILY REMOTE, FRIDAYS IN-PERSON WITH TAS, CODY ONLINE
- \* D3 LECTURE RECORDINGS WILL BE POSTED

# For Next Time

[neu-ds-4200-s22.github.io/schedule](https://neu-ds-4200-s22.github.io/schedule)

Look at the upcoming assignments and deadlines

- Textbook, Readings, & Reading Quizzes—Variable days
- In-Class Activities—If due, they are due 11:59pm the same day as class

Everyday Required Supplies:

- 5+ colors of pen/pencil
- White paper
- Laptop and charger

Use Canvas Discussions for general questions, email [codydunne-and-tas@ccs.neu.edu](mailto:codydunne-and-tas@ccs.neu.edu) for questions specific to you.



Week	Topics	Assignments
<a href="#">#1: Jan 17–21</a>	What is visualization Design rules of thumb	<a href="#">A1—Setting up</a>
<a href="#">#2: Jan 24–28</a>	JS development, projects Marks & channels	<a href="#">A2—Encodings &amp; xenographics</a>
<a href="#">#3: Jan 31–Feb 04</a>	Data types and tasks, Tableau D3 tutorial 1/2	<a href="#">P1—Pitches★</a>
<a href="#">#4: Feb 07–11</a>	In-class group formation D3 tutorial 2/2	<a href="#">A3—Tableau analysis</a> <a href="#">P2—Proposal★</a>
<a href="#">#5: Feb 14–18</a>	Altair and JupyterLab Arrange tables	<a href="#">A4—D3 basic charts</a>
<a href="#">#6: Feb 21–25</a>	Color Pop-out, illusions	<a href="#">A5—Altair basic charts</a> <a href="#">P3—Interview &amp; tasks</a>
<a href="#">#7: Feb 28–Mar 04</a>	Interaction & animation (2)	<a href="#">A6—D3 event handling</a> <a href="#">P4—Data, Initial sketches</a>
<a href="#">#8: Mar 07–11</a>	Trees & networks (2)	<a href="#">P5—Final sketches &amp; plan★</a>
<i>Mar 14–18</i>	<i>Spring Break</i>	
<a href="#">#9: Mar 21–25</a>	Project feedback & work Spatial, 3D, and scientific vis.	<a href="#">A7—D3 Brushing &amp; linking 1</a> <a href="#">P6—Implementation 1</a>
<a href="#">#10: Mar 28–Apr 01</a>	Validation & evaluation Flex day	<a href="#">A8—Brushing &amp; linking 2</a> <a href="#">P7—Implementation 2</a>
<a href="#">#11: Apr 04–08</a>	Project usability testing, how to give a talk Storytelling	
<a href="#">#12: Apr 11–15</a>	Project presentations 1/2 Project presentations 2/2	<a href="#">P9—Presentations★☒</a>
<a href="#">#13: Apr 18–22</a>	Flex day	<a href="#">P10—Presentation peer review</a>
<a href="#">#14: Apr 25–29</a>	Reflecting & project work	
<i>May 02–06</i>		<a href="#">P11—Video &amp; Final Deliverables★☒</a>