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D3, 2/2

PREVIOUSLY...

D3 Tutorial
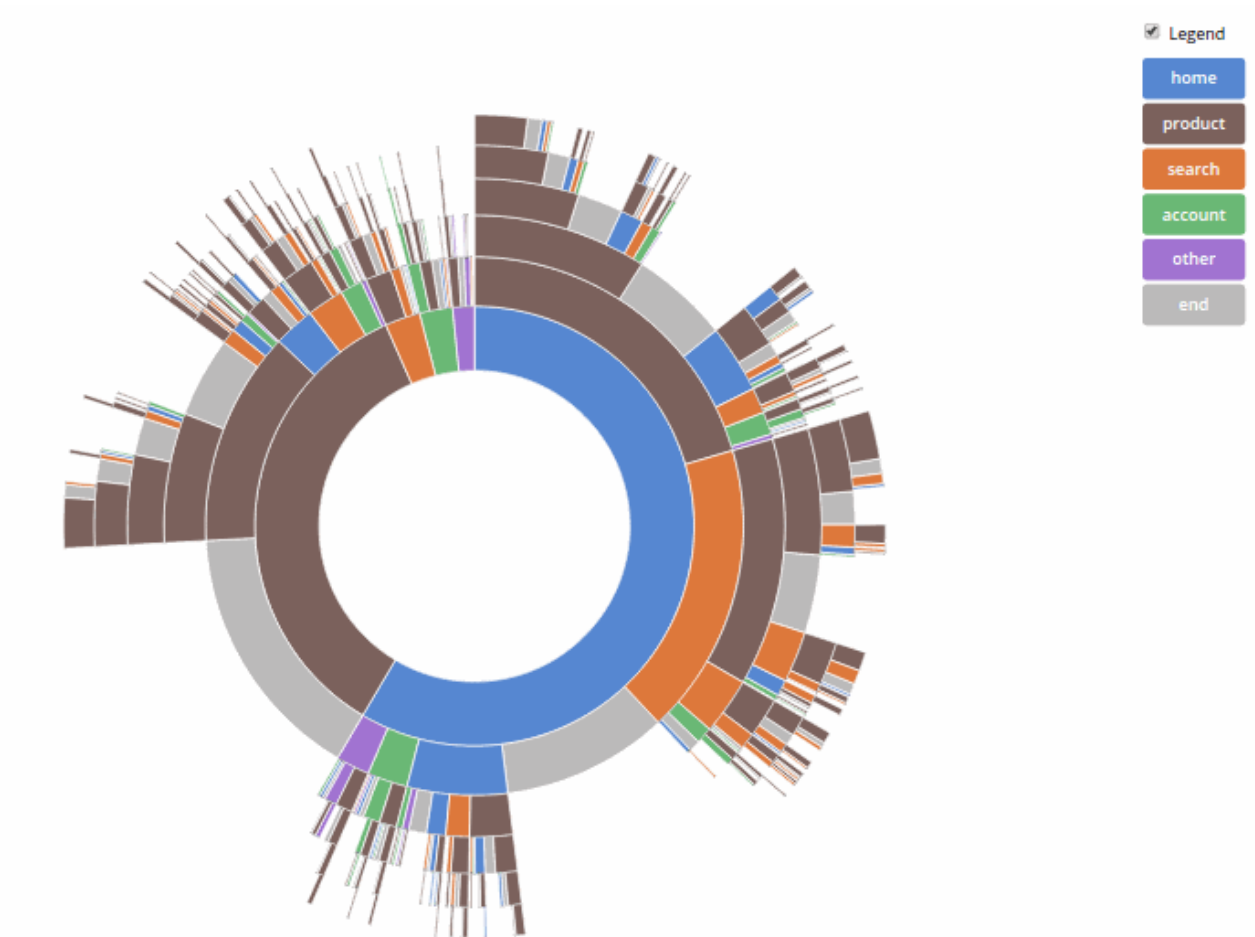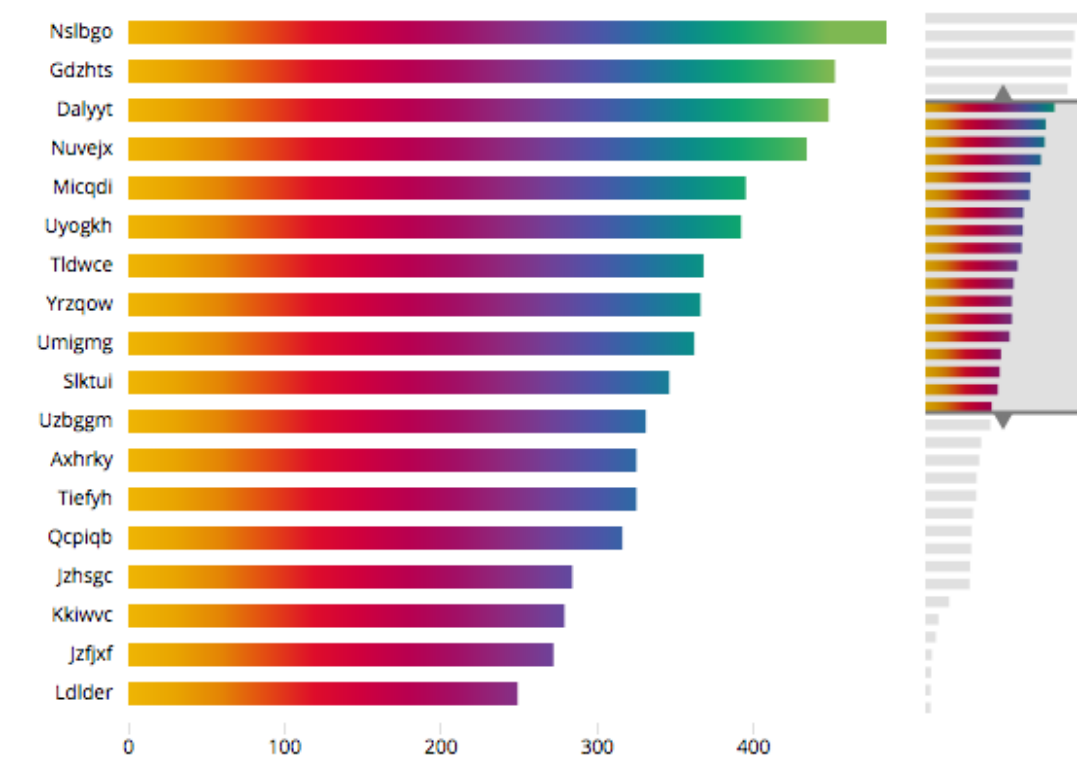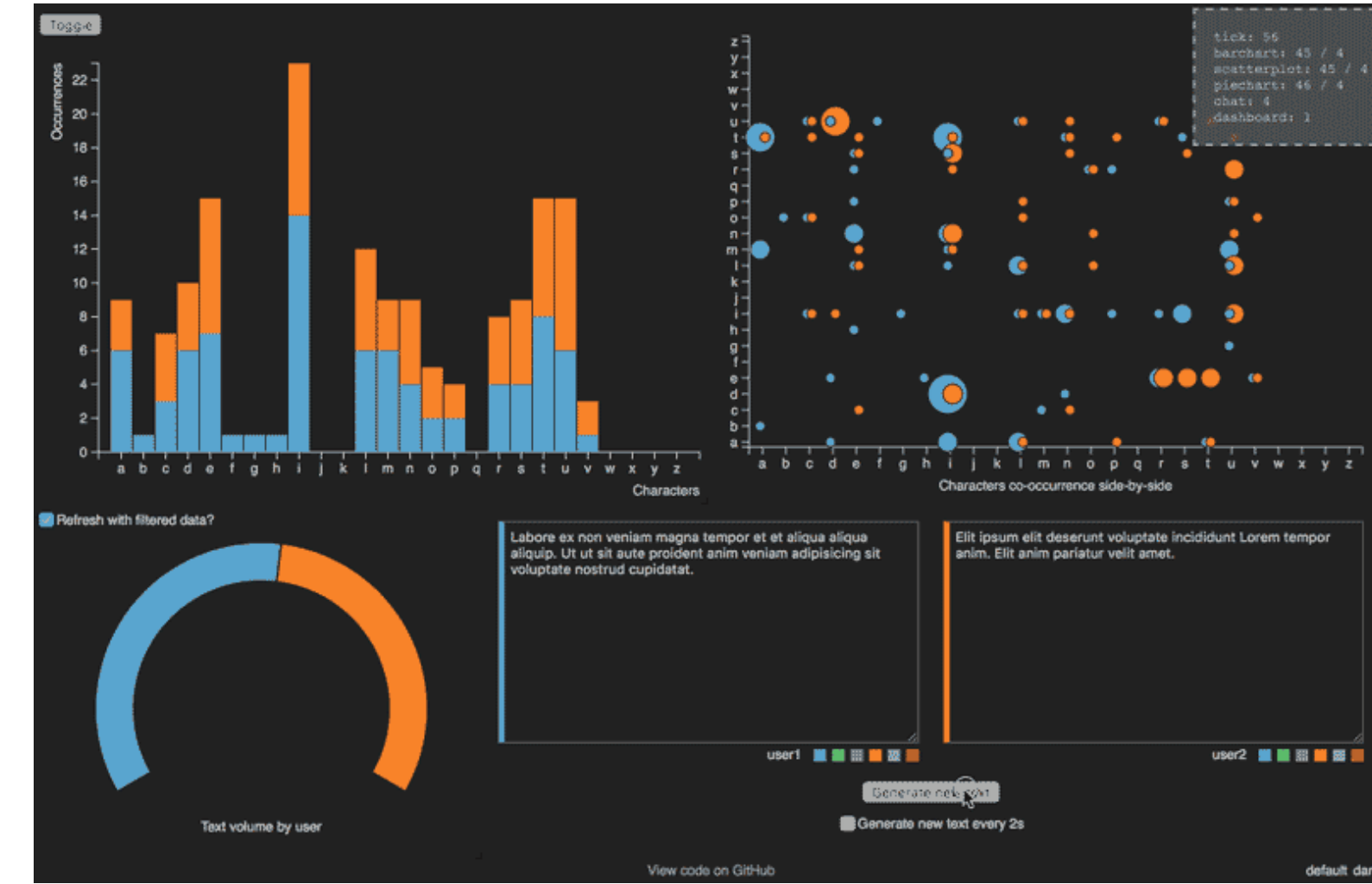
Data Driven Documents

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_Complete

AND NOW...

Recall Our Attribute Types

→ Categorical

➕ ⬤ ◼ ▲

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

→ Ordered

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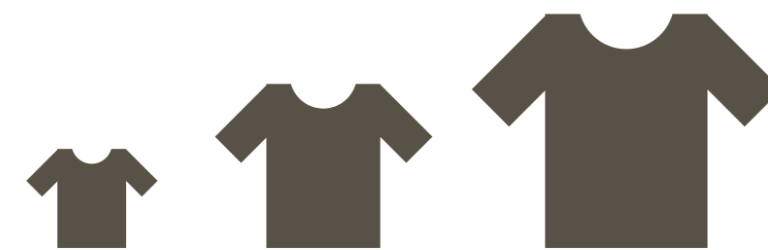
e.g.,
    sizes (xs, s, m, l, xl),
    months (J, F, M)

    → *Quantitative* *(continuous)*

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

Linear Scales

Domain

0 10000

- scaleLinear( )   // Quantitative attributes

- domain( )   // Original values that you will modify

- range ( )   // Values that we want to scale our data to

0 ... 100
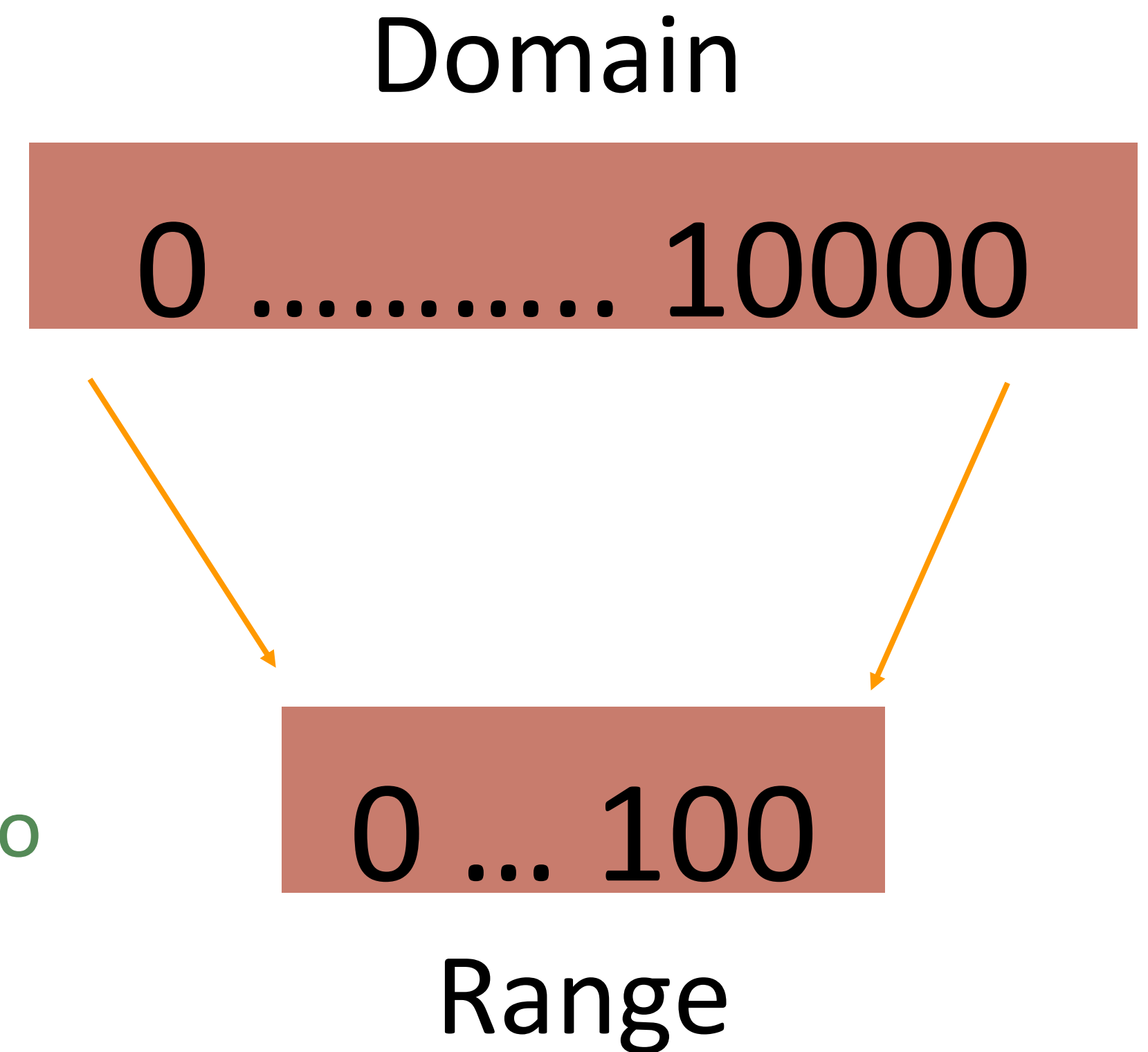
Range

➔ 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*
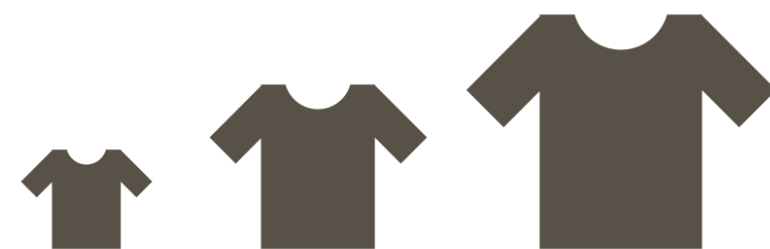
Barchart example

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

Example: 6-transitions

IN-CLASS PROGRAMMING — D3 LINE CHART

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

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 for questions specific to you.

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