

Lecture 5: D3, Continued...

DS 4200
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Slides and inspiration from Michelle Borkin, Krzysztof Gajos, Hanspeter Pfister, Miriah Meyer, Jonathan Schwabish, and David Sprague

CHECK-IN

GITHUB ORGANIZATIONS, REPOS, AND PAGES

Assignment 1b — Introduction to Web Development

PREVIOUSLY, ON DS 4200...

TABLEAU TUTORIAL

D3 TUTORIAL





Data Driven Documents

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

Vector (svg) vs. raster (canvas, png, jpg, ...)

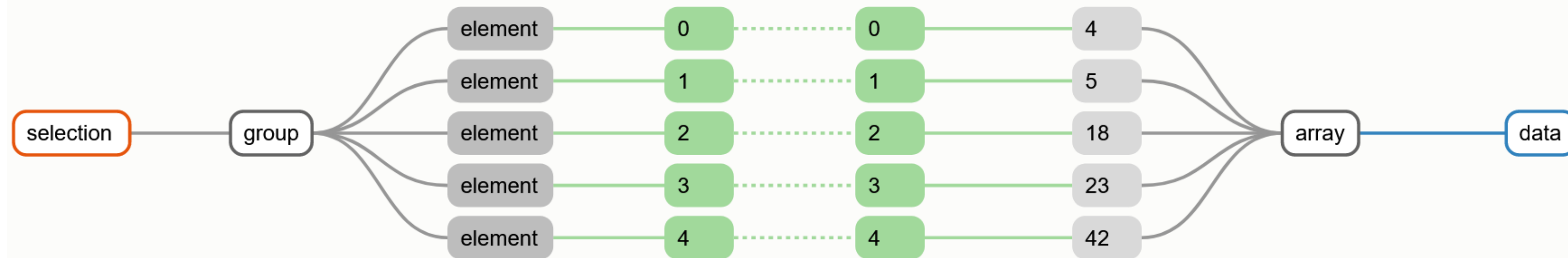
- Formulas that describe the lines and points that make up an image
- Independent from the size of an image
- Always looks crisp, no matter how much you zoom in or distort the picture
- Graphics in SVG will be heavier to process
- Describe the color content of each pixel
- Will appear blurry/pixelated if you zoom in too much



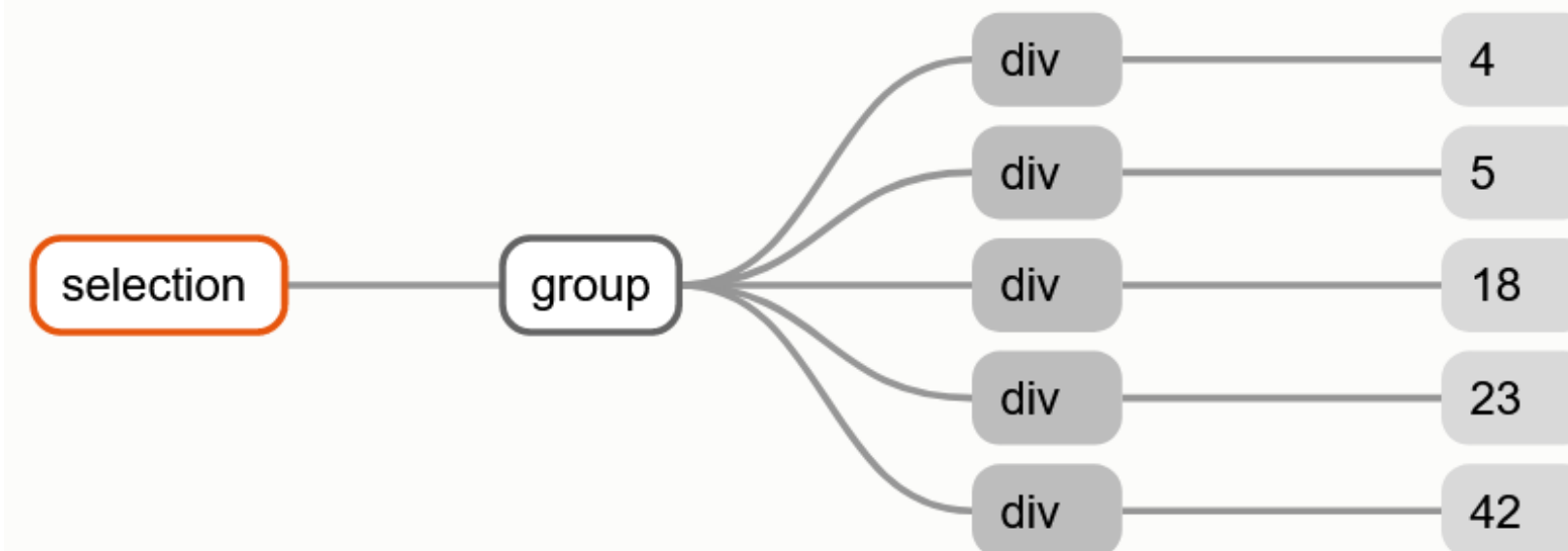


Data Binding

```
var numbers = [4, 5, 18, 23, 42];
```

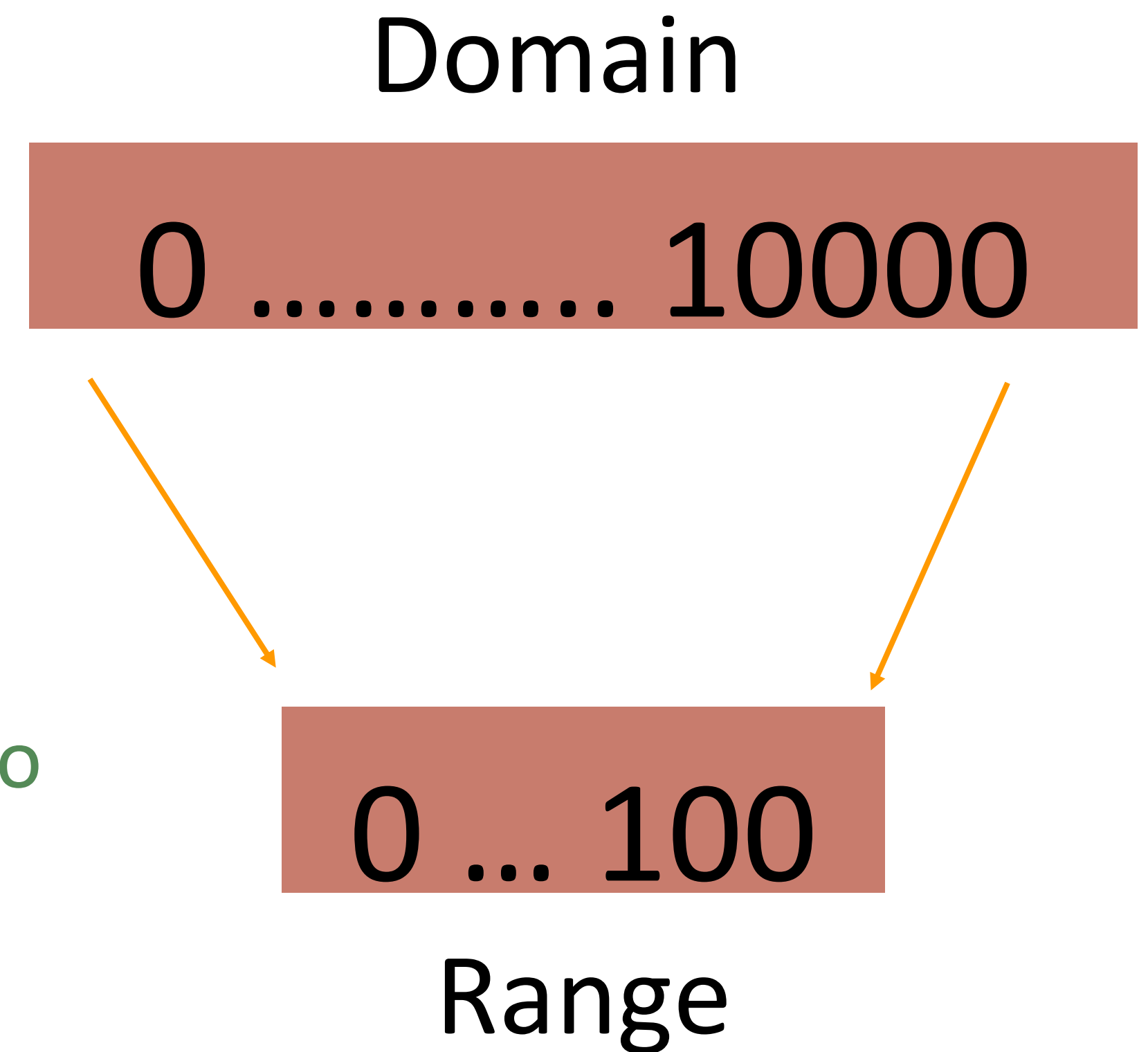


```
d3.selectAll("div").data(numbers);
```



Linear Scales

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



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

Now, ON DS 4200...

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

Examples:

<https://github.com/NEU-DS-4200-F20-Staff/D3-examples>

IN-CLASS PROGRAMMING —

D3 LINE CHART