Computational Fundamentals: D3

Week 4: D3 Foundations 3

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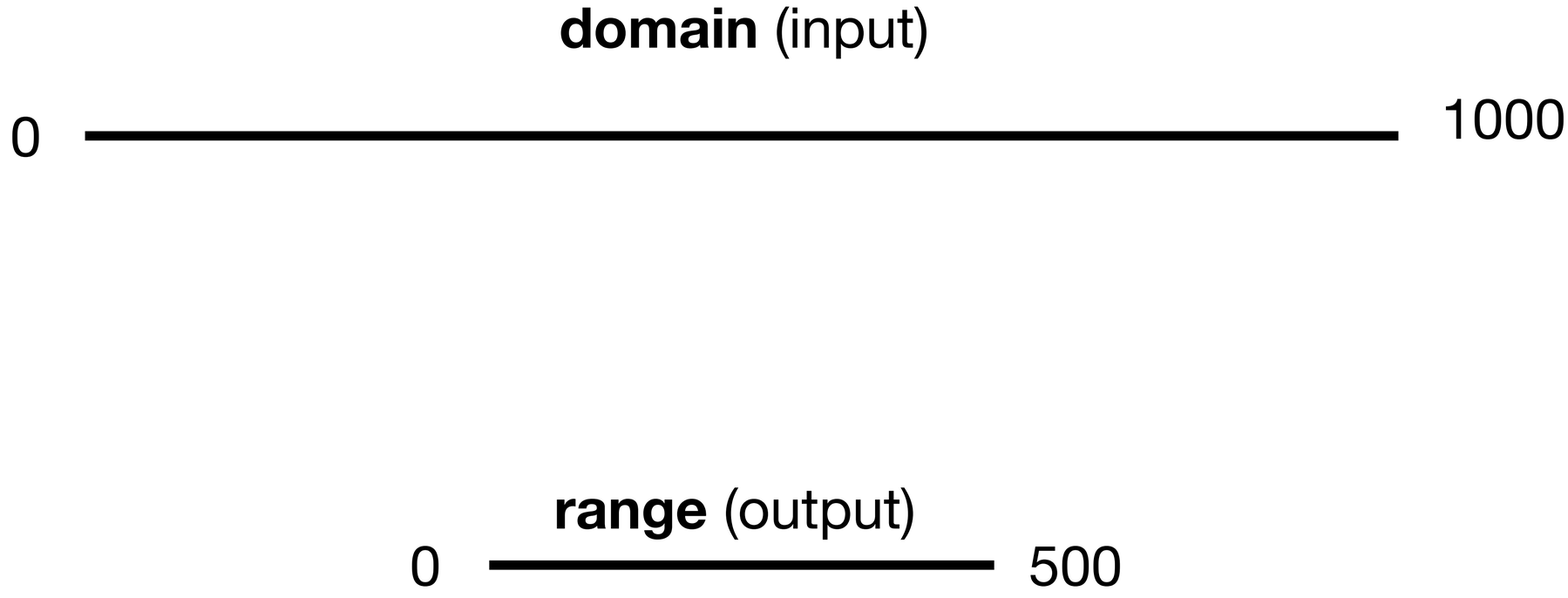
Check In

What we'll cover

- Scales
- Axes
- Loading data

Scales

domain and range



.domain([,]) and .range([,])

Axes

Possible axes by location:

- **d3.axisTop**
- **d3.axisBottom**
- **d3.axisRight**
- **d3.axisLeft**

Updating our Scatterplot

d3.scaleLinear( )

d3.max -and- d3.min

Updating our Bar Chart

Loading Data

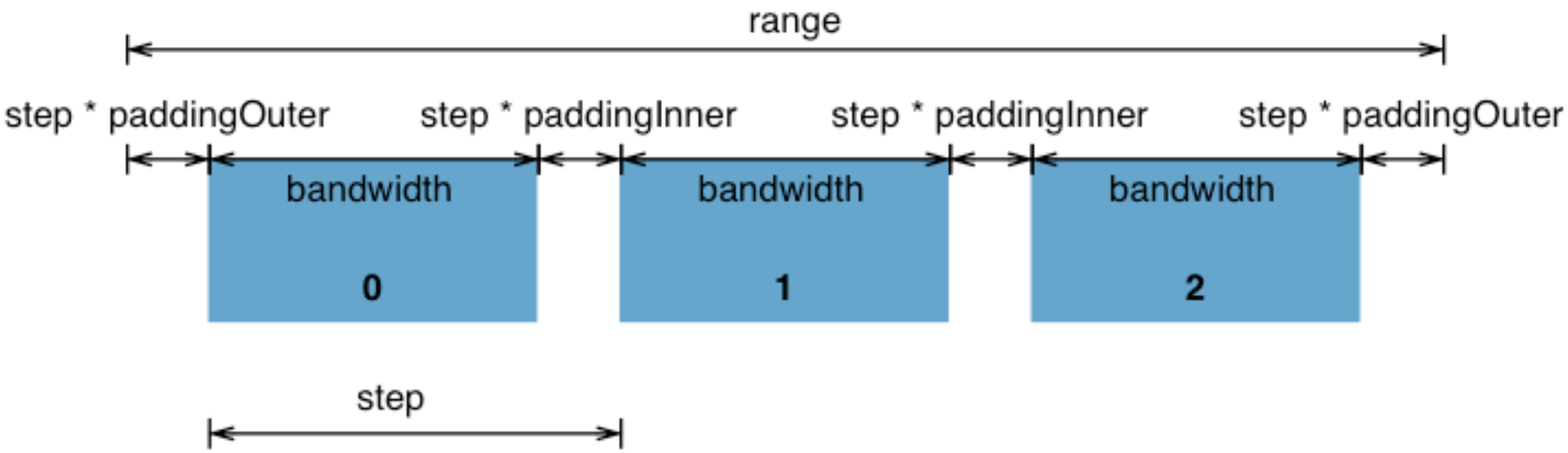
day	emails
Monday	28
Tuesday	50
Wednesday	15
Thursday	100
Friday	43
Saturday	38
Sunday	25

Working with CSVs
(some recommendations for those starting out)

- Ensure all of your columns are labeled
- Work with a single row of column labels (not two rows of nested labels for example)
- Try to avoid column names that are numbers or have spaces
- It’s easiest/most straight-forward if your numbers don’t have commas
    - NOTE: We can still work with data if they have commas or spaces for example, but if you are just getting started on your own, this might cause some unnecessary confusion. Having a *clean* simple file (that you understand!) to work with is the easiest option for practicing for beginners.
- You can save a file as a CSV in Excel, Google Docs, & etc. Just save as .csv (or “download to” in Google Docs)

d3.scaleBand( )

Band Scale



Img src: https://github.com/d3/d3-scale/tree/v4.0.0

A few other d3.scales of note:

- **d3.scaleTime** (linear scale for time series data)
- **d3.scaleQuantize** (linear scale for *continuous & quantitative* domain to a *discrete* range: for example: .domain([1,100]) .range([2,4,8]))
- **d3.scaleSqrt** (square root scale)
- **d3.scaleLog** (logarithmic scale)
- **d3.scalePow** (power scale i.e. “to the power of”)

Some Data Vocab

- **Continuous**
- **Discrete**
- **Linear**
- **Ordinal**
- **Categorical**

Homework and Resources

Assignments

- Make a basic chart (bar or scatter) by using your own simple data, scales, and axes.
  - Load your data from an external CSV
  - NOTE: you are welcome to use our class templates, but you will need adjust them to the assignment, to your data, and to the needs of your plot.
  - BONUS: Try to add a title and/or axis labels to your chart. (See “Text in SVG” slide)
- Upload your code, data, and Readme with visual and brief descriptive documentation to GitHub per the course guidelines.

Text in SVG

Text can be an SVG element! Like a circle or rect, text takes specific parameters:

x: x-coordinate

y: y-coordinate

dx: x-coordinate offset (optional)

dy: y-coordinate offset (optional)

text-anchor: horizontal text alignment (i.e. “start”, “middle”, “end”)

** Don’t forget to include your actual text with .text(“Your Text”)

Additional Resources

- D3 “API index” https://d3js.org/api
- “d3-axis” https://d3js.org/api#d3-axis
- “d3-scale” https://d3js.org/api#d3-scale