Module 2 – D3.js Student Guide

I DO / YOU DO / WE DO / BONUS steps for Visualizations 2A–2F

2A – Bar Charts

- I DO – Bind sample data to gray bars with d3.scaleBand & d3.scaleLinear.
- YOU DO – Fetch JSON (CoinGecko), map to data array, rebuild scales, render real bars.
- WE DO – Add text labels atop bars showing formatted values.
- BONUS – Implement hover transitions to highlight bars.

2B – Line Charts

- I DO – Draw a basic line path using d3.line() and initial dataset.
- YOU DO – Append circles at each data point and show tooltips.
- WE DO – Write updateChart to animate line and circles on data change.
- BONUS – Add dropdown to switch interpolation curves.

2C – Hierarchical Layouts

- I DO – Create circle pack layout with d3.hierarchy and d3.pack.
- YOU DO – Switch to tree or partition layout to visualize hierarchy.
- WE DO – Add text labels for each node in the layout.
- BONUS – Color nodes by depth using a D3 color scale.

2D – Force-Directed Graphs

- I DO – Initialize force simulation with nodes & links; draw circles & lines.
- YOU DO – Add <title> tooltips and <text> labels to nodes.
- WE DO – Tweak charge & link forces for a compact layout; reheat simulation.
- BONUS – Dynamically add/remove nodes and links, updating simulation.

2E – Transitions & Animations

- I DO – Render circles and set initial radii.
- YOU DO – Transition radius & color on button click.
- WE DO – Chain transitions with bounce easing and restore style.
- BONUS – Draw & animate a connecting path with stroke-dasharray tween.

2F – Scales & Axes Deep Dive

- I DO – Demonstrate log scale axis with d3.scaleLog & d3.axisBottom.
- YOU DO – Create sqrt and power scales; generate corresponding axes.
- WE DO – Add a secondary top axis and axis labels.
- BONUS – Add zoom behavior to make axis interactive.

Helpful Resources

D3.js Official: https://d3js.org
D3 API Reference: https://github.com/d3/d3/blob/main/API.md
d3-fetch: https://github.com/d3/d3-fetch
d3-scale: https://github.com/d3/d3-scale
d3-shape: https://github.com/d3/d3-shape
d3-hierarchy: https://github.com/d3/d3-hierarchy

d3-force: https://github.com/d3/d3-force
d3-transition: https://github.com/d3/d3-transition
d3-zoom: https://github.com/d3/d3-zoom
d3-axis: https://github.com/d3/d3-axis