Glossary

📘 Core Concepts & Data Binding

Term	Definition
D3.js	A JavaScript library for producing dynamic, interactive data visualizations in web browsers using SVG, HTML, and CSS.
Data Binding	The process of linking data to DOM elements, typically using .data() in D3.
Selection	A D3 object representing a group of DOM elements. Created with d3.select() or d3.selectAll().
Enter Selection	A virtual selection of elements that need to be created because there is more data than DOM elements. Accessed via .enter().
Exit Selection	A selection of DOM elements that no longer have corresponding data and may need to be removed. Accessed via .exit().
Update Selection	A selection of DOM elements that continue to exist after a data change as they still have matching datapoints, but whose data is liable to change
Join	The process of merging the enter, update, and exit selections to align data with elements. In D3 v6+, .join() simplifies this pattern.
DOM	Document Object Model — the structured representation of HTML elements that D3 manipulates.
SVG	Scalable Vector Graphics — an XML-based format for rendering vector graphics in the browser.
Attribute (.attr())	Used to set or get attributes on DOM elements (e.g., cx, r, fill).
Style (.style())	Used to set CSS styles that are applied directly on every element to which they apply (e.g., fill, stroke, opacity). Takes precedence over CSS and .attr()
Chaining	Calling multiple D3 methods in sequence on a selection, as most methods return the selection itself.

📘 Scales, Axes, Layouts & Interactions

Term	Definition
Scale	A function that maps from a data domain to a visual range (e.g., d3.scaleLinear, d3.scaleBand).
Domain	The set of input values for a scale (e.g., [0, 100]).
Range	The set of output values a scale maps to (e.g., [0, 500] pixels).
Axis Generator	A D3 function like d3.axisBottom() that creates tick marks and labels for scales.
Ordinal Scale	Maps discrete categories to specific positions (e.g., d3.scaleBand).
Linear Scale	Maps numeric input to numeric output with a continuous range (d3.scaleLinear).
Time Scale	A scale that handles JavaScript Date objects (d3.scaleTime).
Colour Scale	A scale that maps data to colour values (e.g., d3.scaleOrdinal(d3.schemeCategory10)).
Transition	Animates changes to attributes or styles over time (.transition().duration(1000)).
Event Listener	Used to add interactivity, e.g., .on("mouseover", fn).
Tooltip	A small pop-up or text box that shows extra data on hover. Often custom-built in D3.
Layout	A D3 module that calculates positions or shapes (e.g., d3.forceSimulation, d3.stack, d3.pie).
Join Pattern	The three-part process of handling enter, update, and exit selections based on data changes.
Tick	A label or line on an axis, automatically calculated from the scale.
Extent	A shortcut to get the [min, max] of a dataset (e.g., d3.extent(data, d => d.value)).