

D3 Training: Introduction to D3.js

Course Summary

Description

D3.js is a JavaScript library that renders data using HTML, SVG and CSS. Introduction to D3 training class teaches attendees how to create dynamic data visualizations that are viewable on almost any modern browser on a range of devices, allowing you to integrate sophisticated data displays into your web applications.

Objectives

By the end of this course, students will be able to:

- Understand the approach D3 takes to simplifying data visualization
- Create both static and dynamic visualizations that can vary based on modified data or user interaction
- Generate visualizations with several of the most common D3 layouts, including histogram, pie, cluster, stack and treemap)
- How to maximize the performance of your visualizations and avoid slow rendering
- Master reusable skills for using future layouts

Topics

- Introduction
- Basics
- The D3 Paradigm
- Layouts, SVG Helpers and Time
- Interaction
- Performant Visualizations
- Conclusion

Prerequisites

Attendees should have a solid knowledge of HTML, JavaScript and CSS. Prior experience with SVG is not presumed.

Duration

Two days

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Course Outline

I. Introduction

- A. What is D3, who made it, and why do you care?
- B. Examples and use cases

II. Basics

- A. Selections
- B. Data
- C. SVGs
- D. Life without D3
- E. Scales/Axes
- F. Shapes

III. The D3 Paradigm

- A. Anonymous functions (brief review if necessary)
- B. DOM data-binding
- C. Adding, removing, and updating elements
- D. Transitions
- E. Code structure

IV. Layouts, SVG Helpers, and Time

- A. Histogram, pie, cluster, stack, treemap
- B. Lines, arcs, chords, and diagonals
- C. Time

V. Interaction

- A. Mouse events
- B. Keyboard events
- C. Streaming data
- D. Editing a dataset with D3

VI. Performant Visualizations

- A. Why you should care about the performance of your visualizations
- B. What makes a visualization slow
- C. Data manipulation
- D. Network conditions
- E. Repaints
- F. Patterns to avoid
- G. Using Chrome Developer Tools to measure the performance of your visualizations

VII. Conclusion