Learning D3.js Mapping

[Book mission]

# Audience

*This book is targeted towards someone with a passing knowledge of web development (basic HTML/CSS/JavaScript). No previous mapping or D3.js experience necessary.*

# Mission

*Define what the book is going to DO for its readers… what is the goal that the book works towards? This will usually start with a practical verb: “build”, “create”, “develop”.*

# Objectives and achievements

*List the book’s key objectives here. What will the reader achieve with this book?*

# Detailed outline

# **1: GATHER YOUR CARTOGRAPHER'S TOOLBOX ( ) Pages**

**Description:**

**Level:** BASIC

**Topics covered:**

* Quick bootstrap
* Step-by-step bootstrap
* Optimizing geographic data files with TopoJSON
* Using the web browser as a development tool

**Skills learned: Setting up the basic code blocks needed in order to build maps with d3.js. Quick utilization of topoJSON to handle topographies instead of geometries. Utilizing the chrome dev tools.**

# **2: CREATING IMAGES FROM SIMPLE TEXT**

**Description:**

**Level:** BASIC

**Topics covered:**

* Introduction – general knowledge
* Positioning elements
* Line
* Rectangle
* Circle
* Polygon
* Path
* Transform
* Grouping
* Text

**Skills learned: SVG and its core geometric shapes.**

# **3: PRODUCING GRAPHICS FROM DATA – THE FOUNDATIONS OF D3**

**Description:**

**Level:** MEDIUM

**Topics covered:**

* Creating basic SVG elements
* Enter
* Update
* Exit
* AJAX

**Skills learned: D3.js lifecycle (Enter, Update, Exit). With this core concept understood one can add animation data flow easily within d3.js**

# **4: CREATING A MAP**

**Description:**

**Level:** MEDIUM

**Topics covered:**

* Foundation – creating your basic map
* Experiment 1 – adjusting the bounding box
* Experiment 2 – creating choropleths
* Experiment 3 – adding click events to our visualization
* Experiment 4 – using updates and transitions to enhance our visualization
* Experiment 5 – adding points of interest
* Experiment 6 – adding visualizations as a point of interest

**Skills learned: Map creation in d3.js. Via the use of paths and geoJSON files that are compressed with topoJSON the user will have multiple examples of maps and also then the basics interactivity within maps.**

# **5: CLICK-CLICK BOOM! APPLYING INTERACTIVITY TO YOUR MAP**

**Description:**

**Level:** MEDIUM

**Topics covered:**

* Events and how they occur
* Experiment 1 – hover events
* Experiment 2 – tooltips with visualizations
* Experiment 3 – panning and zooming
* Experiment 4 – orthographic projections
* Experiment 5 – rotating orthographic projections
* Experiment 6 – dragging orthographic projections

**Skills learned: Adding complete interactivity into a map that include both basic clicks to advanced zooms and animations with different types of projections (3d maps)**

# 6: FINDING AND WORKING WITH GEOGRAPHIC DATA

**Description:**

**Level:** ADVANCED

**Topics covered:**

* GeoData file types
* Summary

**Skills learned: Compression and conversion of geoJSON data files.**

# **7: TESTING**

**Description:**

**Level:** ADVANCED

**Topics covered:**

* Code organization and reusable assets
* Project structure
* Writing testable code
* Unit testing
* Creating resilient visualization code

**Skills learned: Writing testable code, structuring your visualization so that it’s easy to test**