Datvis Technical documentation

File structure

index.html is en HTML entrypoint file

sketch.js is an JS entrypoint for a p5.js application.

css/ — Style Sheets

css/main.css — common style for the sketch

css/map_style.css — styles for lib/map.svg (see lib/world-map.js for details).

lib/ — libraries and helper functions

lib/gallery.js - visualisations gallery class

lib/visualisations/ - individual visualisations for the gallery

data/ — data files, data sources for visualisations

vendor/ — third party libraries

docs/ — Project documentation

Conventions

ESLint config is .eslintrc
Prettier formatter config is .prettierrc
JSDoc is used for comments/documentation

Extensions

COVID-19 MAP

This map shows how the COVID-19 outbreak develops over time in different countries. The page displays a world map with countries colored according to the epidemiological statistics. It displays real data provided by the World Health Organization in a CSV format.
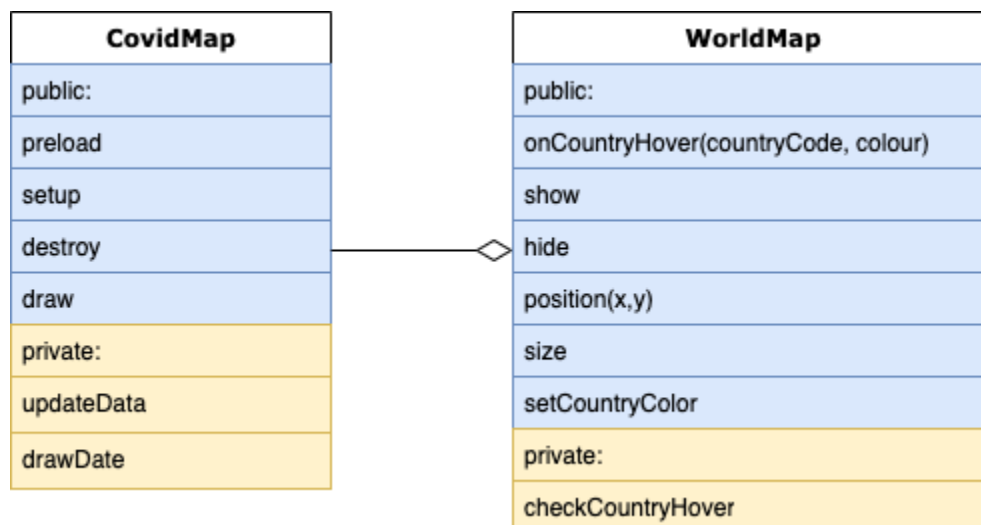
Features

- Timeline slider that changes a date for which it will display data on the map. The map is automatically updated when the slider changes a date.
- A selector that allows a user to choose from the datasets: Daily cases, Total cases, Daily deaths, Total deaths.
- There is a "Per 1M capita" checkbox that sets the mode of displaying data per 1M capita rather than absolute number.
- This extension is interactive. It highlights a country when a related region has hovered over with a mouse. It displays a tip with a country name and numbers.

Implementation details

A constructor function called *CovidMap* lib/visualisations/covid-map.js has been used for this extension.
All map-related code is separated into a constructor function called *WorldMap* lib/world-map.js. *WorldMap* is reusable and universal. It can be used to display any color-coded country data.

CovidMap	WorldMap
public:	public:
preload	onCountryHover(countryCode, colour)
setup	show
destroy	hide
draw	position(x,y)
private:	size
updateData	setCountryColor
drawDate	private:
	checkCountryHover

PIE CHART 3D

This extension updates the existing "Tech Diversity: Race" visualization with a 3D Pie Chart.

Features

- I've added percentage values for legend items next to the labels.
- A pie chart as a three-dimensional figure using the 3D capability provided by P5.js and WebGL API.
- This extension is interactive. It highlights a 3D pie chart slice when a related label has hovered over with a mouse.
- The 3D pie chart is rotatable by mouse.

Implementation details

A *PieChart3D* lib/pie-chart-3d.js constructor function has been used for this extension. The interface of *PieChart3D* is fully compatible with the interface of *PieChart* from the original template. So they are interchangeable.

To improve modularity, all code to build a 3D pie slice extracted to a separate constructor function *PieSlice3D* lib/pie-slice-3d.js.

TechDiversityRace
public:
preload
setup
destroy
draw
pie

PieChart3D
public:
draw(dataPoints, labels, colours, title)
private:
drawTitle(title)
orbitControl
isChartHovered
arcRadians(data)
validateDrawParameters(dataPoints, labels, colours)

PieSlice3D
public:
draw(start, stop, radius, height, colour)
private:
changeColourLightness
buildTopFaceShape
buildBottomFaceShape
buildRadialWalls
buildInnerWalls