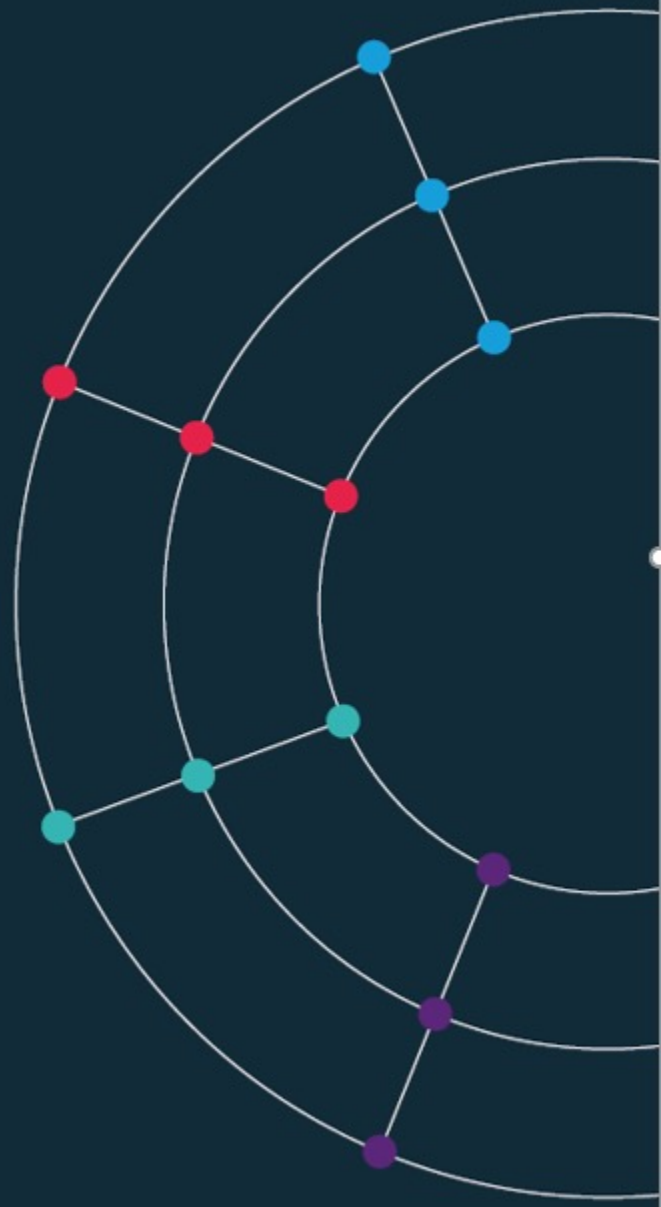
Session 2.

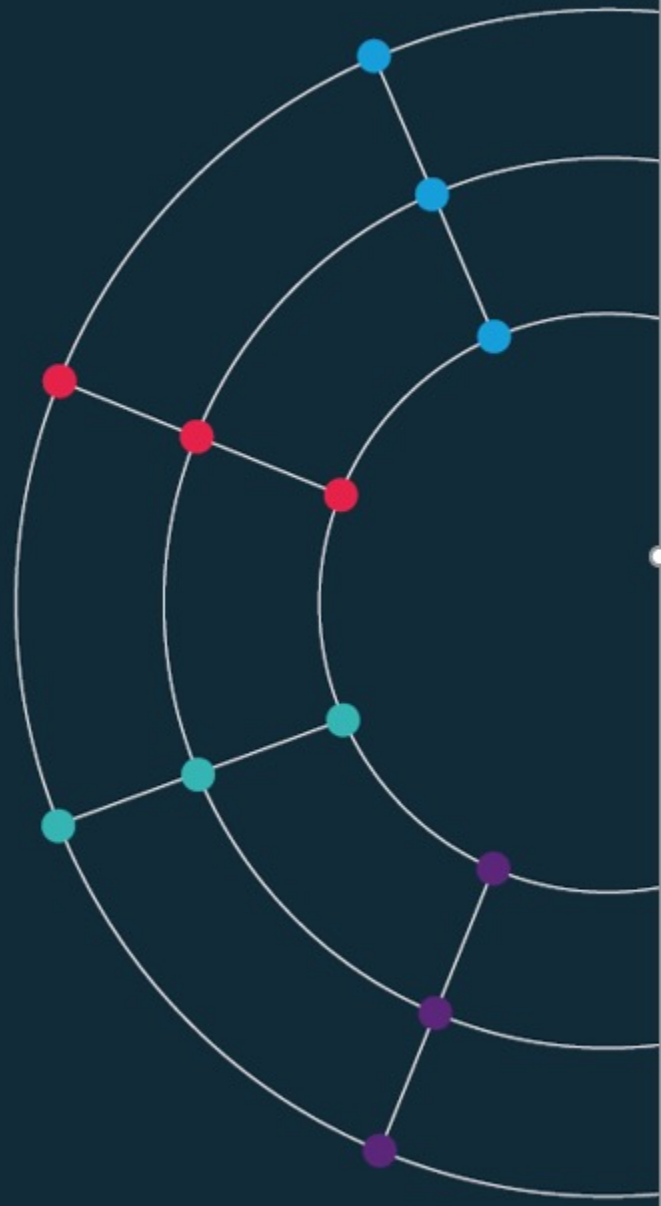
Building your first website



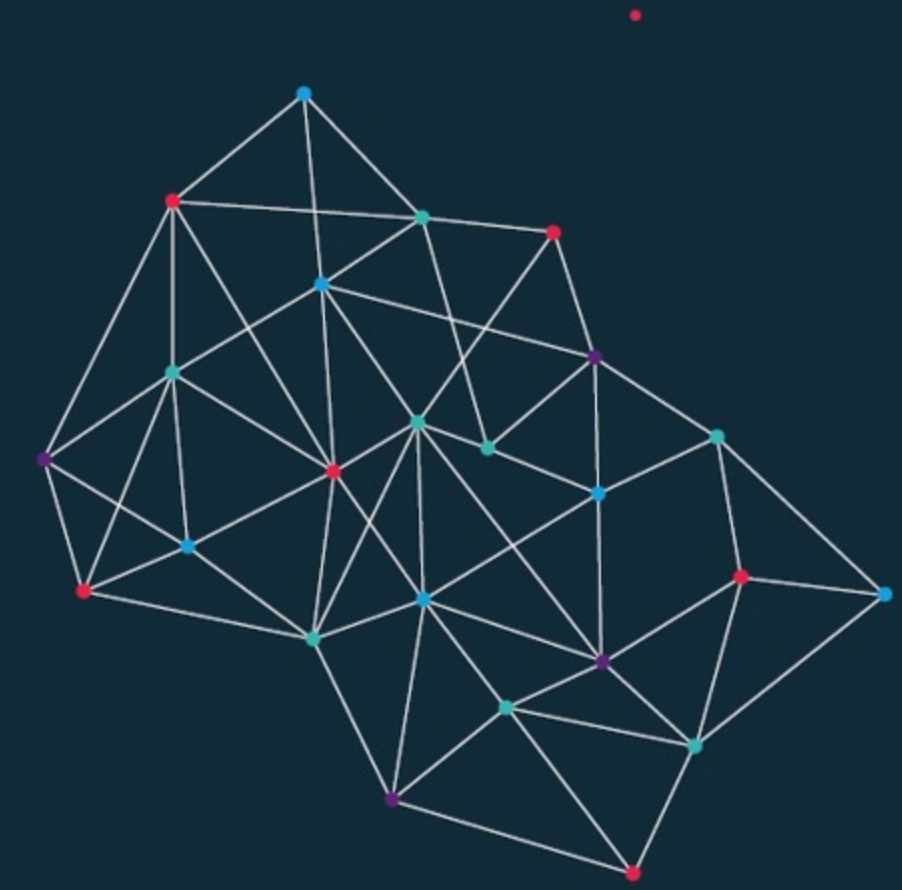
Session 2.

Building your first website

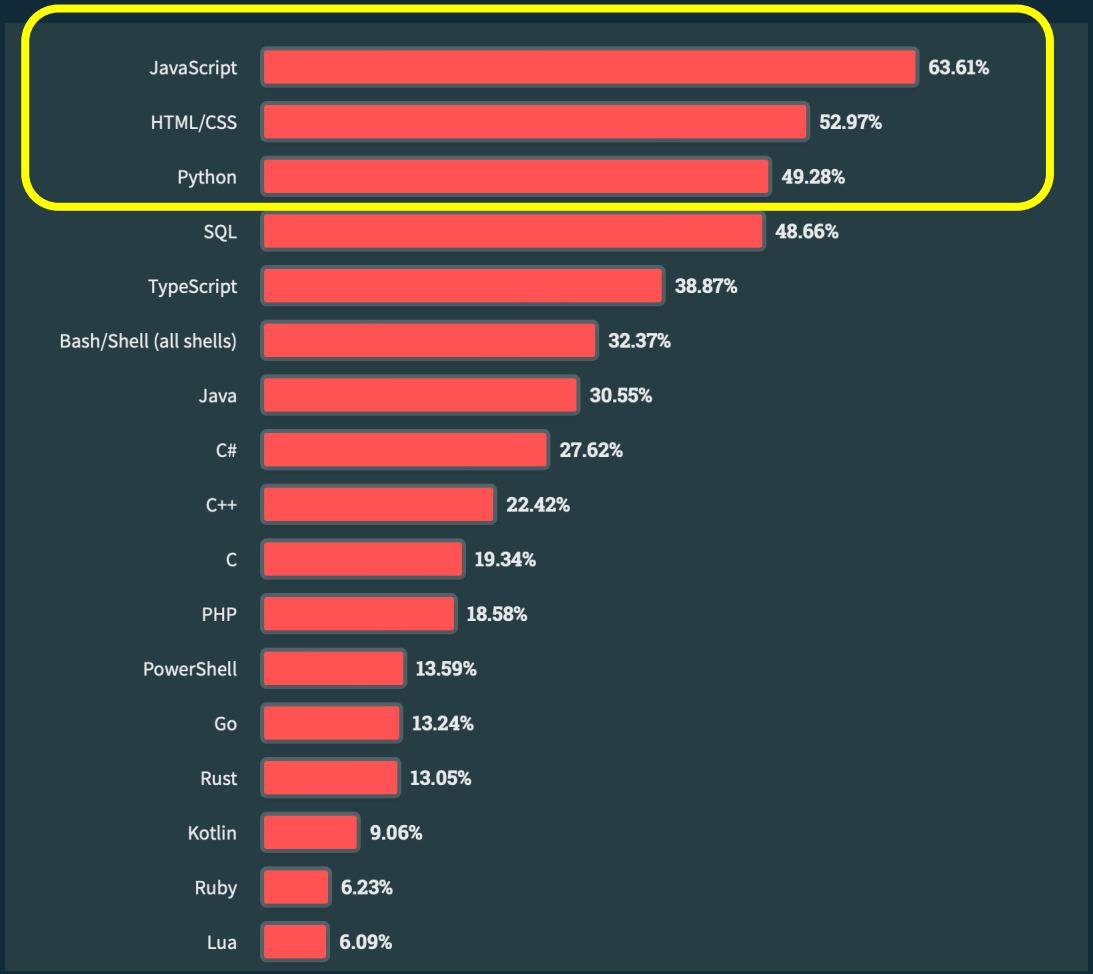
Introduction + building blocks



Building blocks.



Most used languages, 2023.

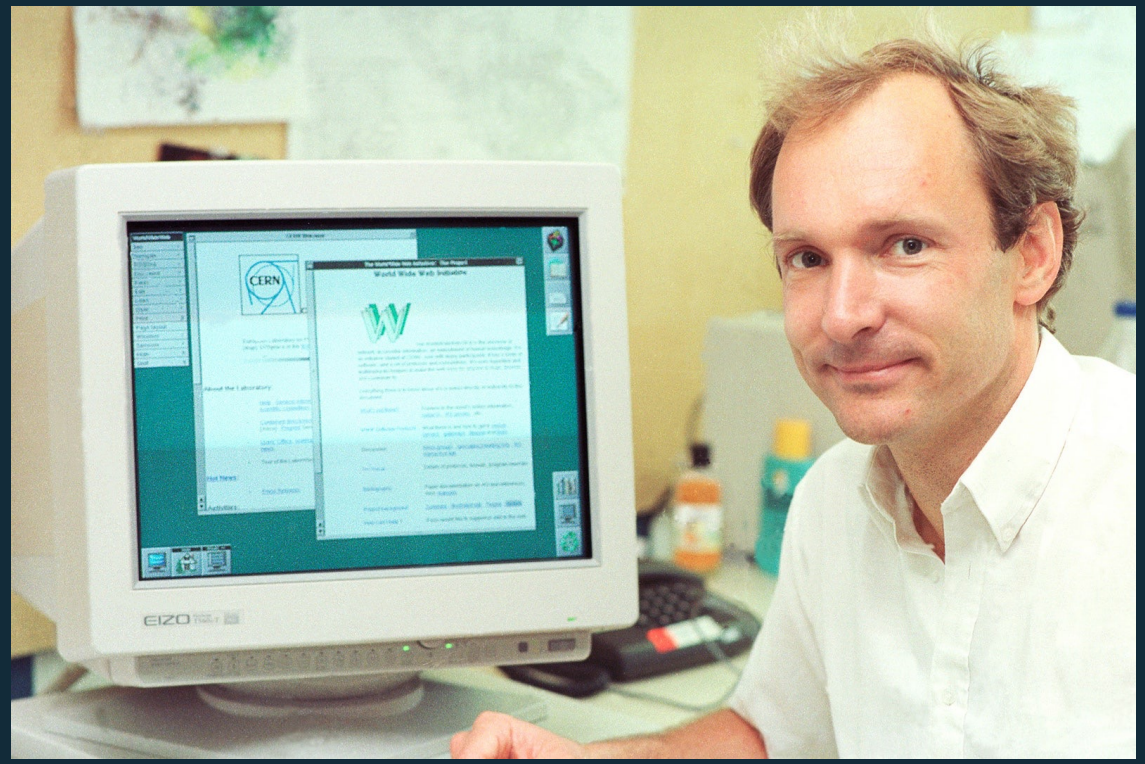


https://survey.stackoverflow.co/2023/#technology

HTML.

Hyper-Text Markup Language

- **1993.** Invented at CERN by Tim Berners-Lee.
- **Big idea.** The HT in the name is the big idea. There are/were lots of markup languages but HTML linked joined documents together, by adding hyperlinks.



Tim Berners-Lee. Image: CERN

https://home.cern/science/computing/birth-web/short-history-web

https://www.vanityfair.com/news/2018/07/the-man-who-created-the-world-wide-web-has-some-regrets

HTML example.

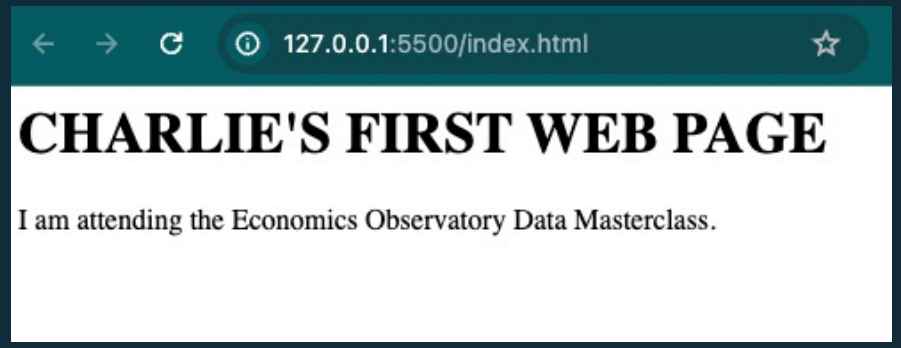
```
<!DOCTYPE html>
<html>

<!-- THIS IS A COMMENT [HIGHLIGHT TEXT, THEN CONTROL+/] -->
<!-- Economics Observatory, Data Science for Public Policy -->

<head>
    <title>Page Title</title>
</head>

<!-- The body contains things you see -->
<!-- Most elements both open and close, with the content in the middle -->
<!-- Indenting is optional, but helps with readability -->
<body>
    <h1>My First Heading</h1>
    <p>My first paragraph.</p>
</body>
</html>
```

CSS.

Cascading Style Sheets

- 1994. First proposal – again at CERN.
- Applies styles to the different parts of your site.
- Challenge is to link the styles you chose, to the parts of your site where you wanted them.
- This is done using tags (also classes and ids)

No CSS applied:



CSS applied:

CSS example.

```css
/* CSS files can can also be used to access e.g. fonts */
@import url('https://fonts.googleapis.com/css2?family=Catam

/* Format my paragraph */
p {
    font-size: 18px;
    margin: 5px 5px;
    line-height: 22.4px;
    color: #323232;
}

/* Format my heading */
h1 {
    font-family: "Catamaran";
    font-variant: small-caps;
    font-size: 60px;
    color: #320064;
    font-weight: 900;
    margin: 0px 0px 30px 0px;
}
```

CSS example.

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```

Putting HTML and CSS together.

To link an HTML page to a CSS file you specify the location in the head section of your page.

```
<!-- Here is the head section of my HTML file -->
<head>
<title>Page Title</title>

<!-- Now I add a link to my CSS file -->
<link rel="stylesheet" href="example1.css">
</head>
```

The page will now have the styles set out in the CSS file.

JavaScript.

- History. JS launched by Netscape in 1995. Key developer was Brendan Eich. Brief war with Microsoft before widespread adoption. Now used in almost all (>95%) of web sites.
- In Data Science. Some uses of JS.
  - Fetching data. Grab data from another site, via an API, when you open your page.
  - Cleaning and manipulating data. Prepare and analyse the data for use in a chart or table.
  - Visualising data. Display the data in a way you wish. There are lots of charting “libraries” that do this. For example, Vega Lite and Charts.js.
  - Interactivity. Make visualisations interactive + sites fun and engaging.

JavaScript example.

```
<!DOCTYPE html>
<html>


<head>
    <!-- JS can be used to load external resources. Here we load Vega Lite library including its “embed” function-->
    <script src="https://cdn.jsdelivr.net/npm/vega@5"></script>
    <script src="https://cdn.jsdelivr.net/npm/vega-lite@5"></script>
    <script src="https://cdn.jsdelivr.net/npm/vega-embed@6"></script>
</head>


<body>
    <!-- Create a "figure" tag and give it the UNIQUE id of "Location1" -->
    <figure id="Location1"></figure>
</body>



<!-- Next we can use the tag script to tell the HTML file we are going to start writing in JavaScript -->
<script>
    // Now we are in JavaScript, so comments start with //

    // Declaring a variable, giving it the name chart1_spec, and storing the JSON that defines a chart in it.
    var chart1_spec = "s2_chart1.json";

    // The vegaEmbed function needs to know (a) what, and (b) where to embed the chart.
    vegaEmbed('#Location1', chart1_spec)
</script>

</html>
```

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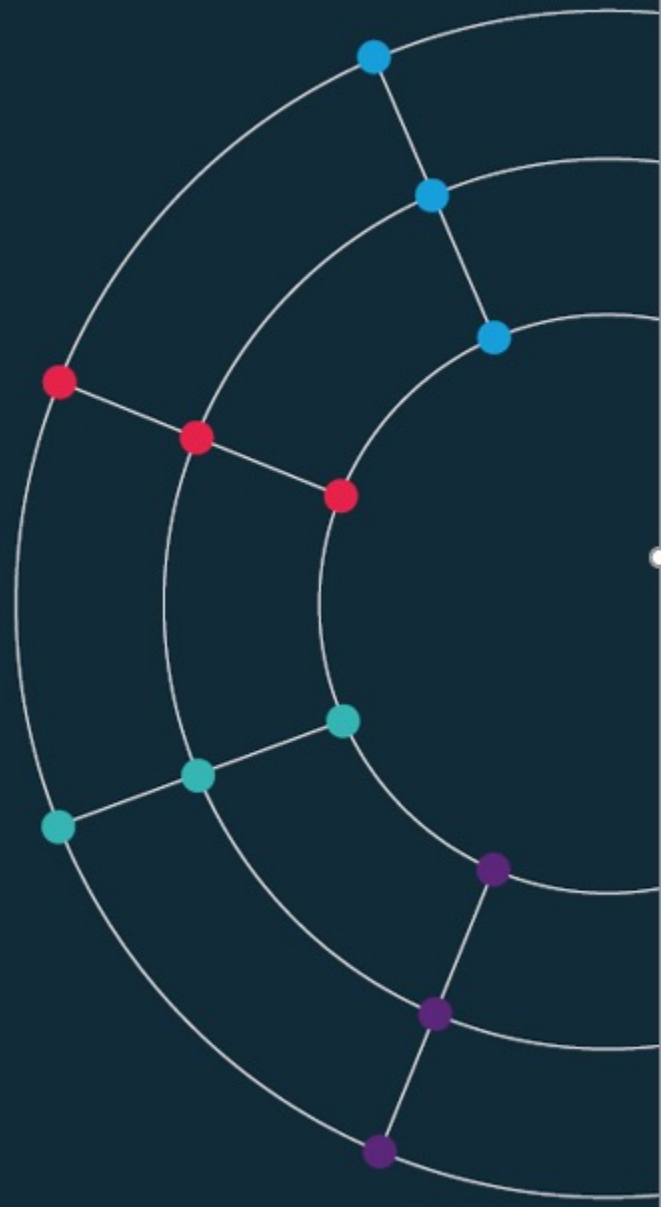
Building your first website

Code-along



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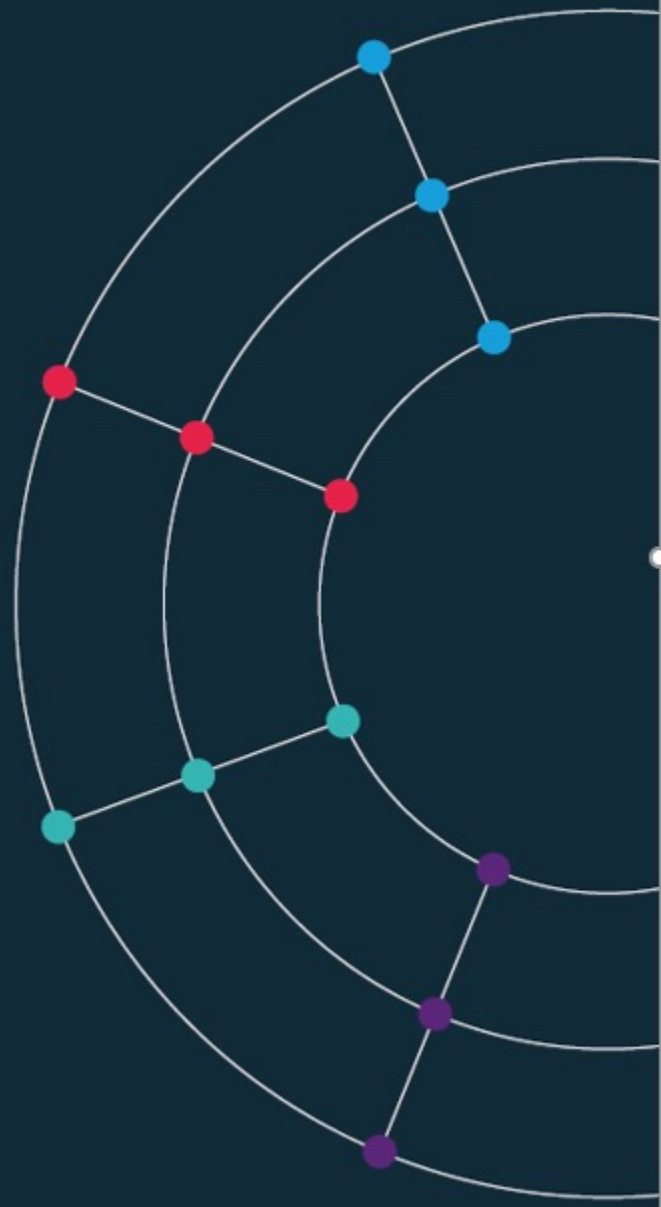
Building your first website

https://economicsobservatory.com/modern-data-visualisation



Code-along.

In this second practical session, we will be using VS Code and GitHub to build your personal website.

1. Edit your HTML (name, bio, etc)
2. Add some CSS (choose colours, fonts, etc)
3. Embed an example JSON chart

HTML.

- Create and edit your “index.html” file
- Use “s2_example1.html” for inspiration

CSS – three-tier format.

- Edit your CSS file
- Use “s2_example1.css”, “s2_example2.css” or “s2_example3.css” file to start:
  - Beginner: s2_example1.css
  - Intermediate: s2_example2.css
  - Advanced: s2_example3.css
- Link “s2_example1.css” (or others) to “index.html” using:

<link rel="stylesheet" href=”s2_example1.css"> (inside html head)

JSON.

- Edit your “index.html” file, and add JSON files to your file structure
- There are already two example charts embedded in the example HTML. Try replacing these with a chart from Section 1, or adding a new chart altogether