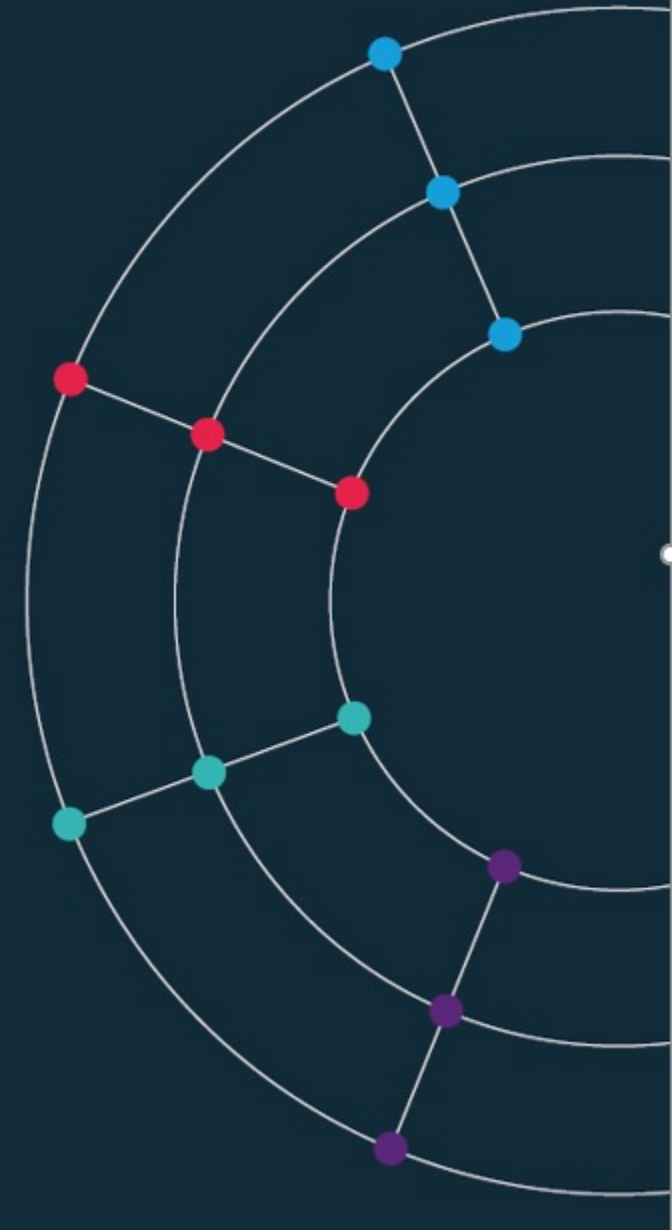




# Session 2.

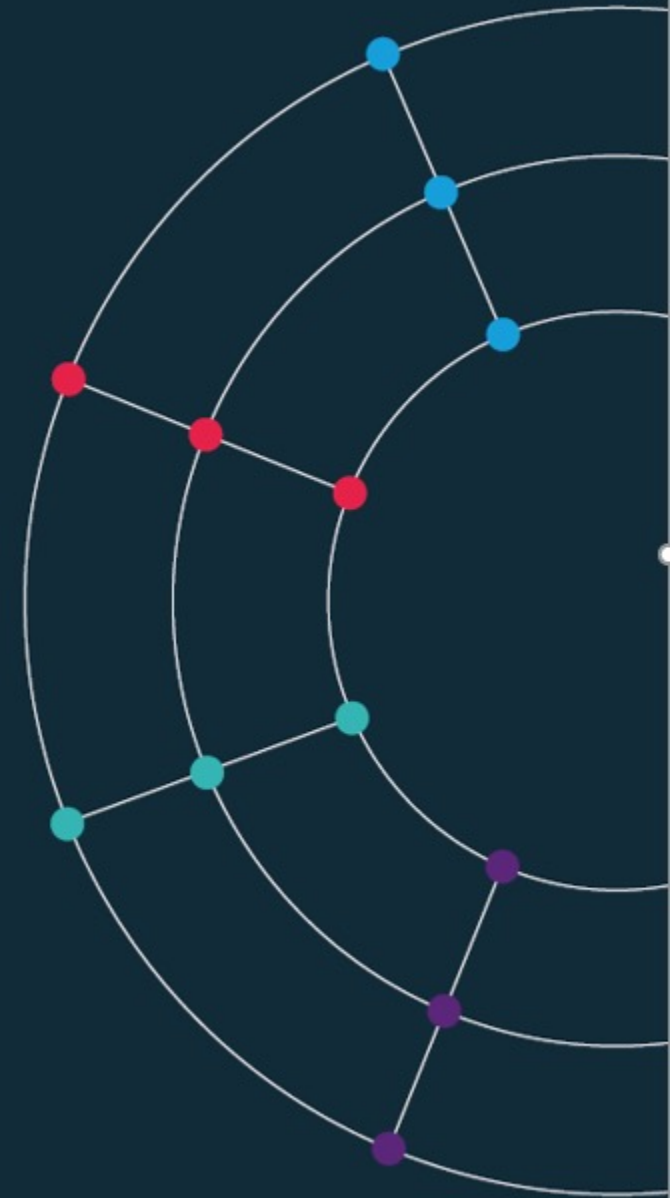
*Building your first website*



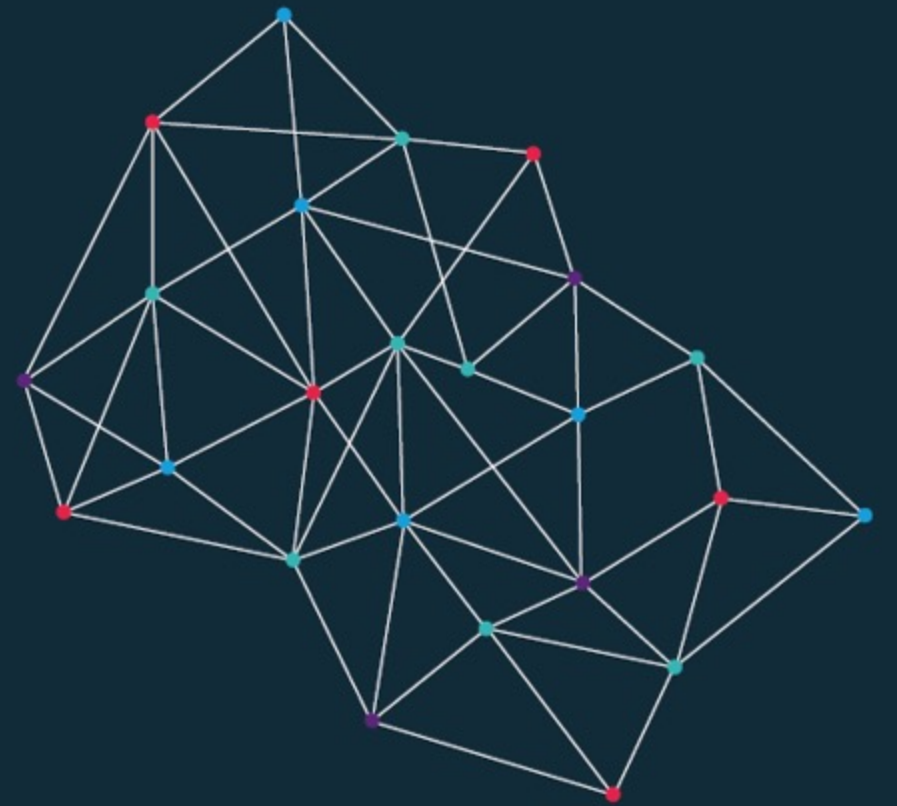
# Session 2.

*Building your first website*

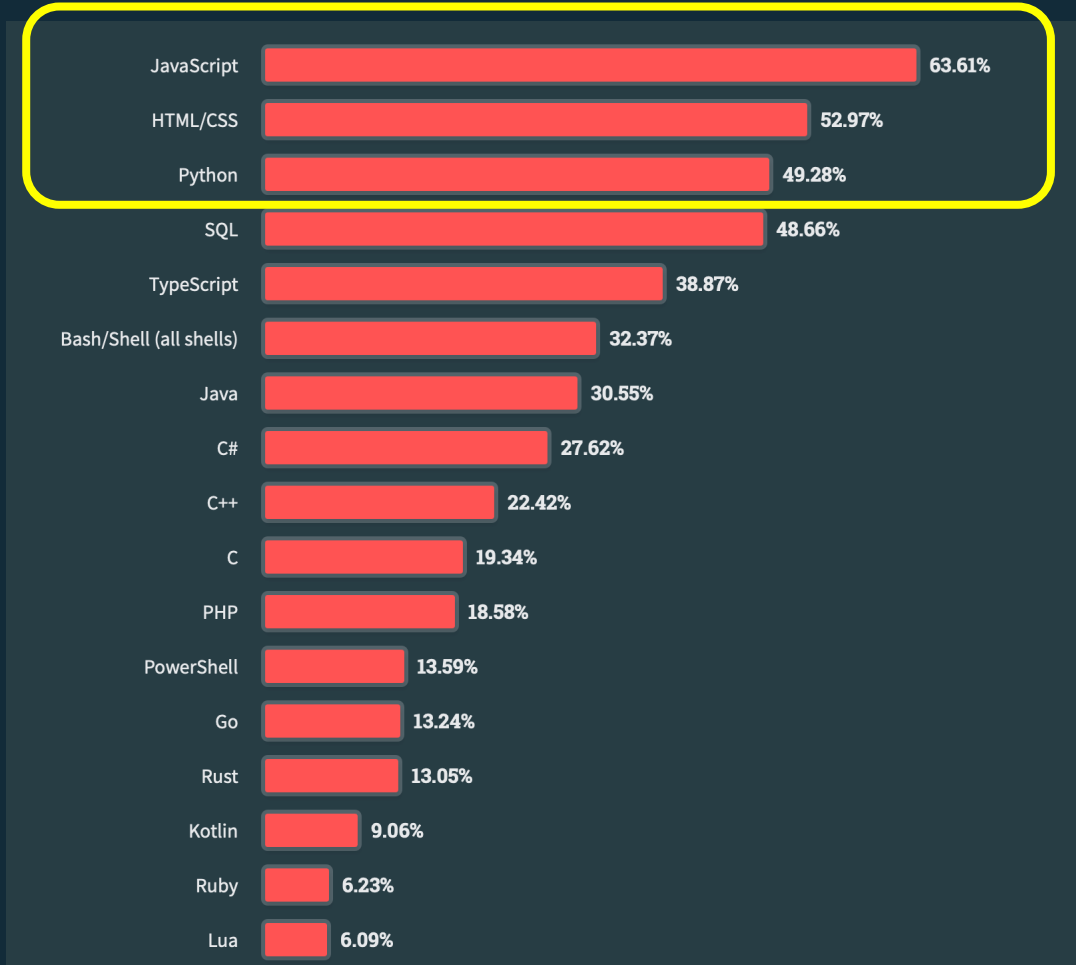
*Introduction + building blocks*



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>

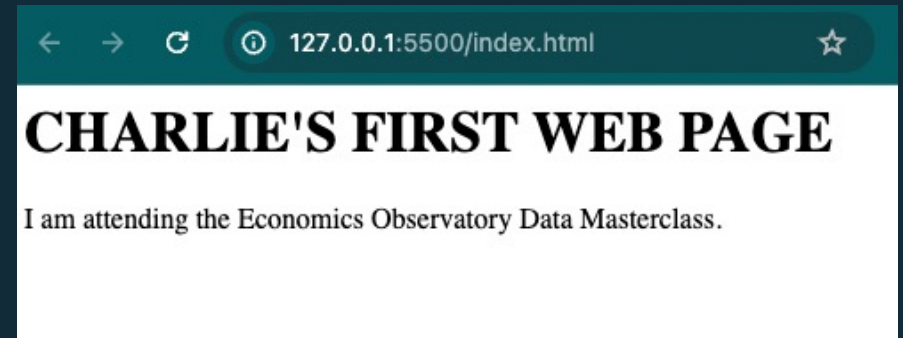
<!-- The body contains things you see -->
<!-- Most elements both open and close, with the content in the middle -->
<!-- Indenting is optional, but helps with readability -->
<body>
  <h1>My First Heading</h1>
  <p>My first paragraph.</p>
</body>
</html>
```

# 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 files 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.

```
/* CSS files 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;  
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```

```
/* Format my heading */
```

```
h1 {  
  font-family: "Catamaran";  
  font-variant: small-caps;  
  font-size: 60px;  
  color: ■ #320064;  
  font-weight: 900;  
  margin: 0px 0px 30px 0px;
```

```
}
```

# 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>
```

# 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>

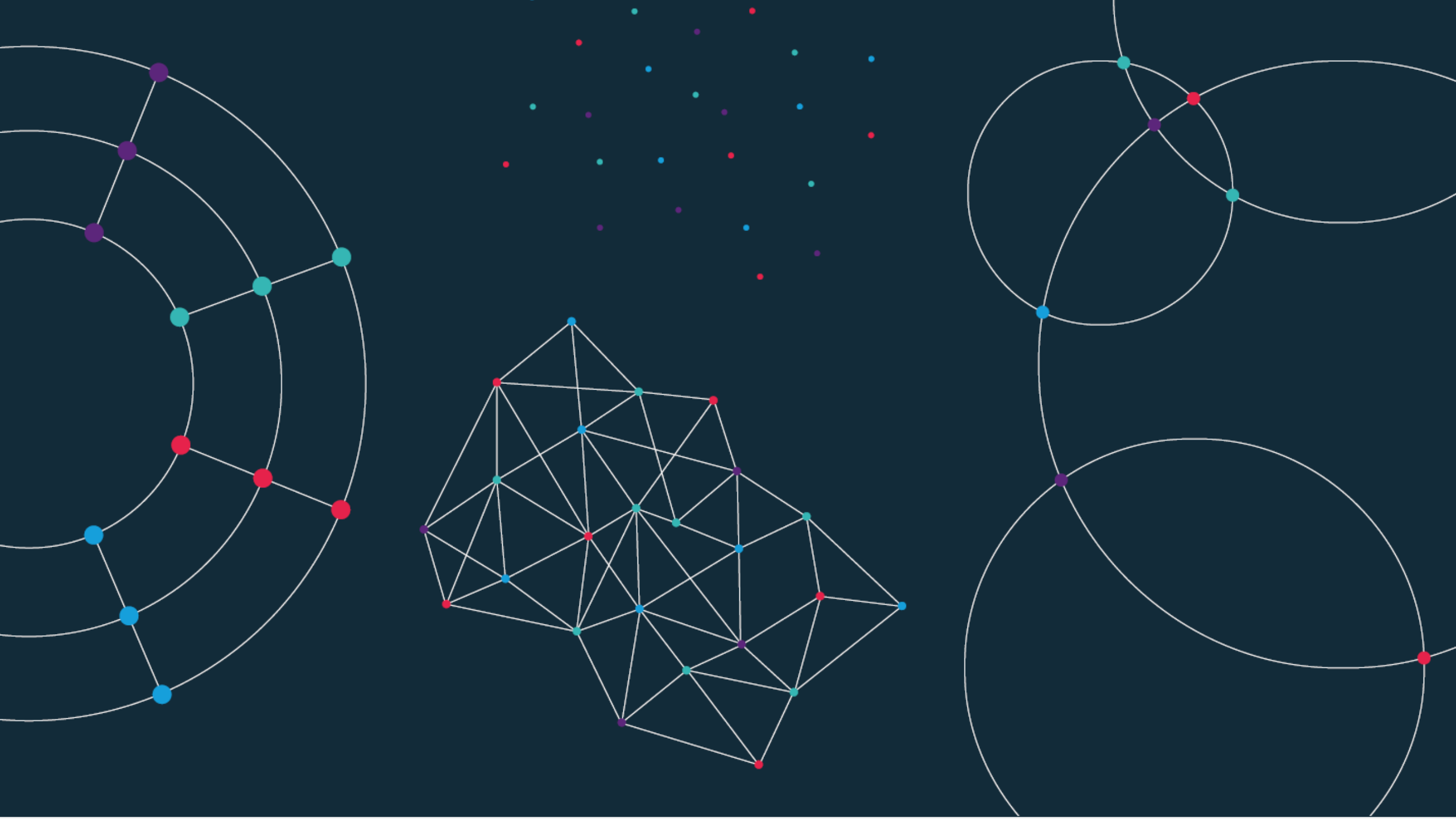
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  <figure id="Location1"></figure>
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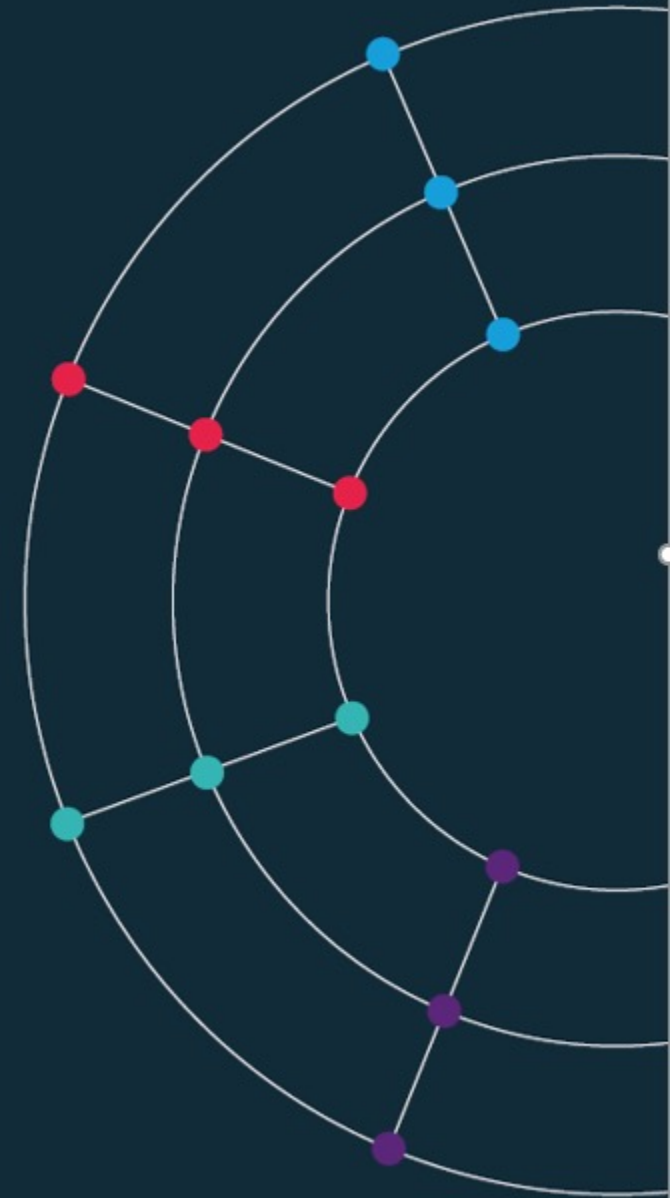
</html>
```



# Session 2.

*Building your first website*

*Code-along*

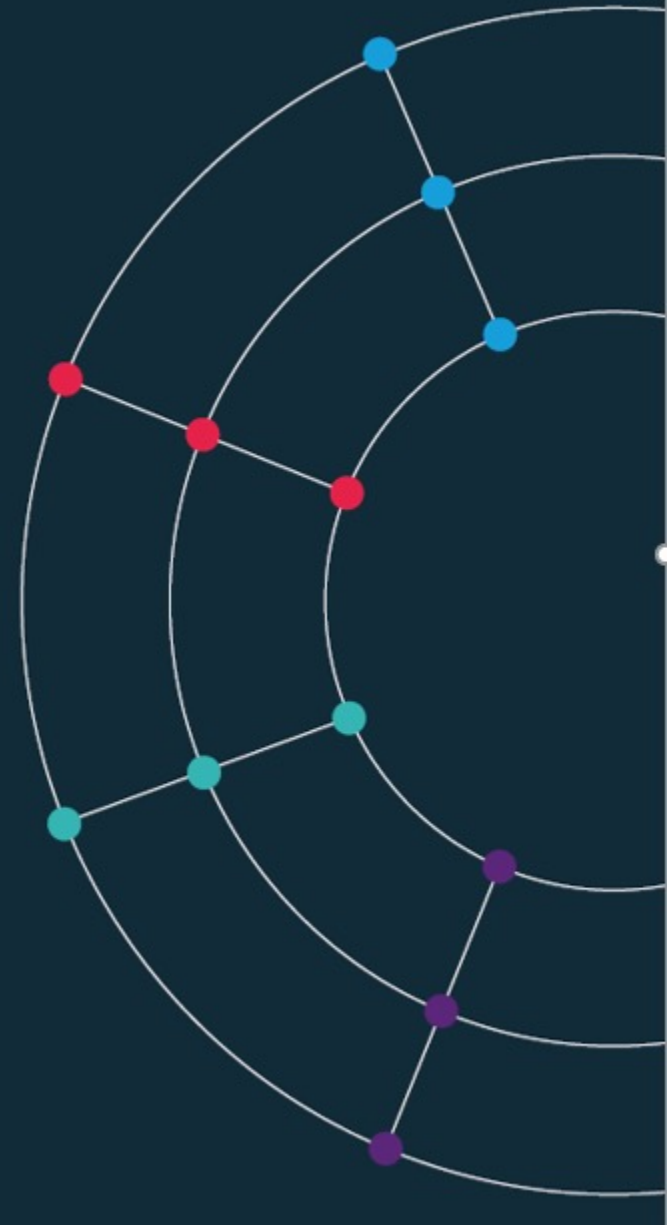




# Session 2.

*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.

- 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

