```
tt()
```

D3 FTW!

Schedule

1. Why you're using D3

2. D3 Concepts
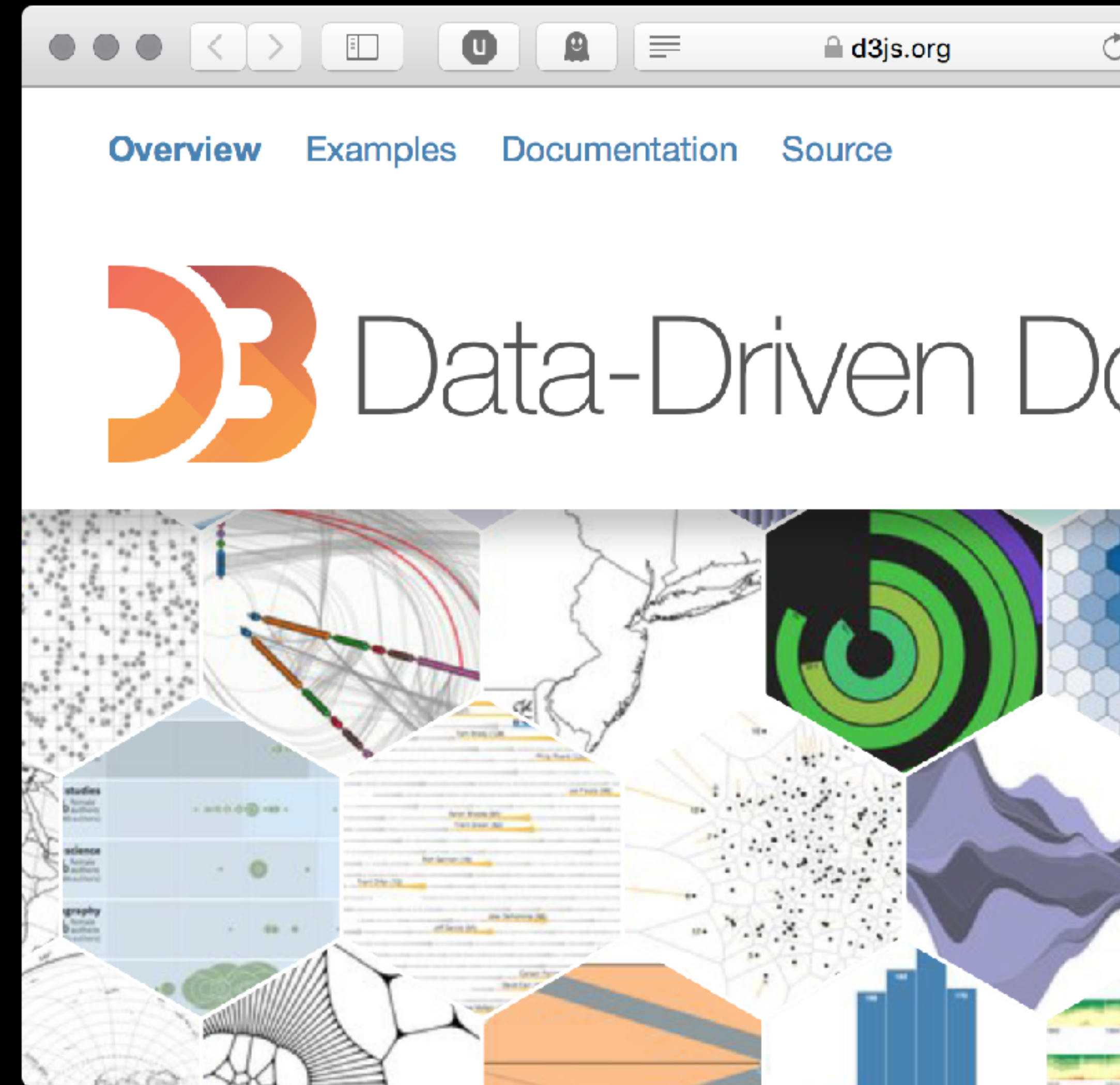
3. Let's get started

Schedule

D3

Data **D**riven **D**ocuments

D3

"D3.js is a JavaScript library for **manipulating documents based on data.**

D3 helps you bring data to life using HTML, SVG, and CSS.

(…)D3 is extremely fast, supporting large datasets and dynamic behaviours for interaction and animation."

D3 vs Instant Mix

- RawGraphs.io

- LocalFocus.nl

- Flourish.studio

Just add water!

D3 vs Chart.js
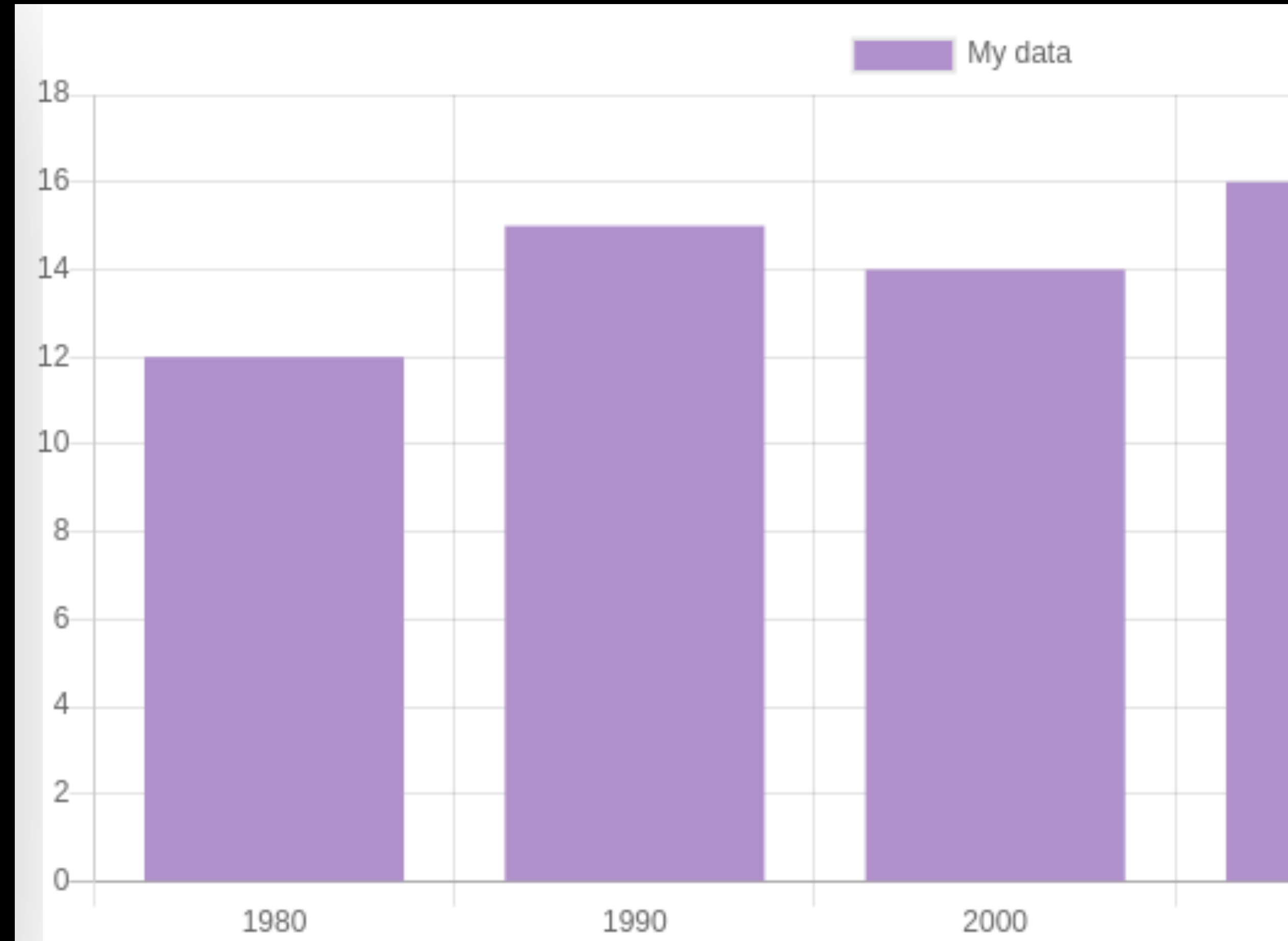


```
<canvas id="myChart"></canvas>

<script>
new Chart("myChart", {
  type: "bar",
  data: {
    labels: ["1980", "1990", "2000", "2010", "2020"],
    datasets: [
      {
        label: "My data",
        backgroundColor: "#af90ca",
        data: [12, 15, 14, 16, 18],
      },
    ],
  }
});
</script>
```
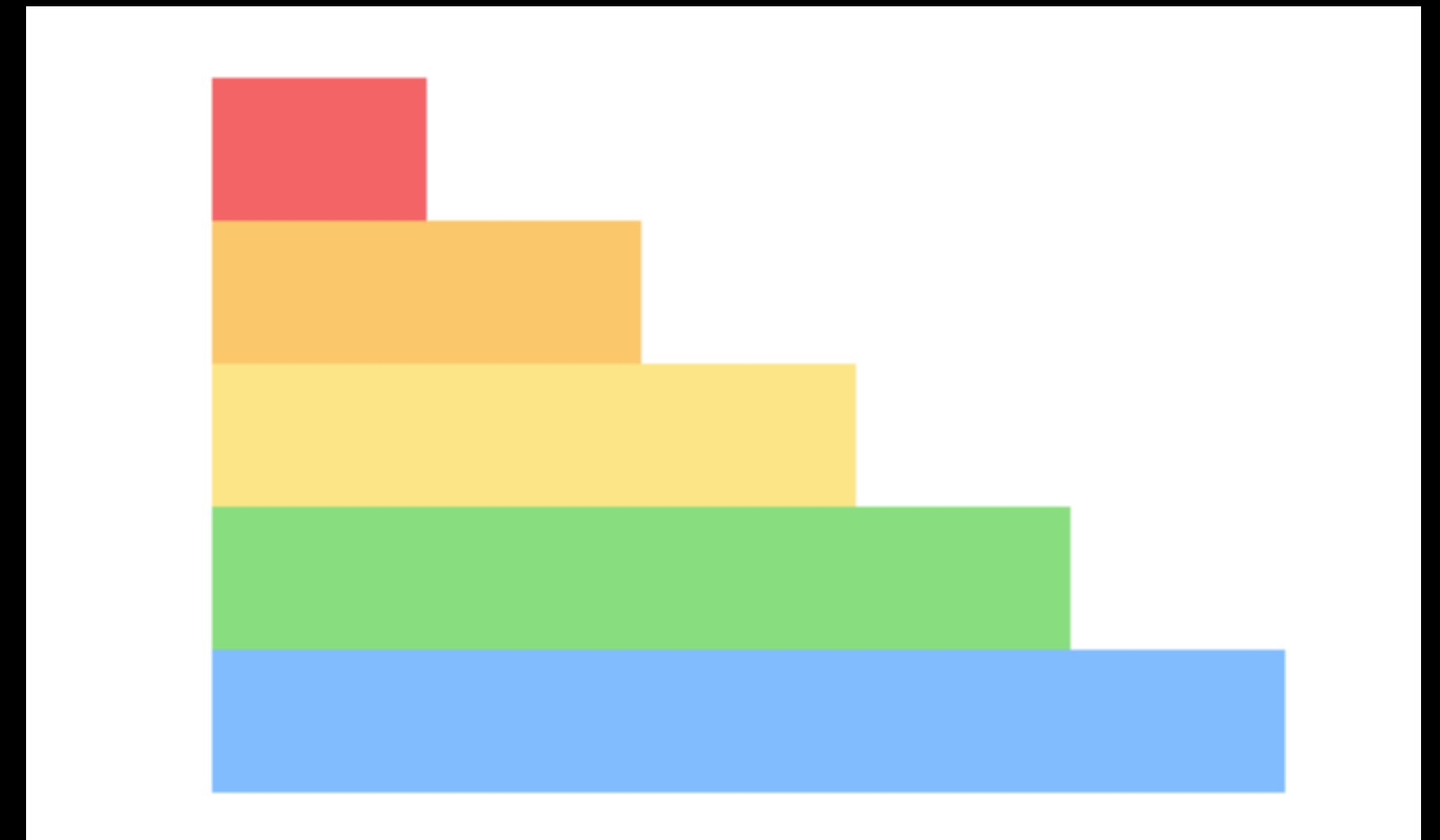
D3 vs Chart.css

```html
                                                                          html
1    <table class="charts-css bar">
2
3      <caption> 2016 Summer Olympics Medal Table </caption>
4
5      <thead>
6        <tr>
7          <th scope="col"> Country </th>
8          <th scope="col"> Gold </th>
9          <th scope="col"> Silver </th>
10         <th scope="col"> Bronze </th>
11       </tr>
12     </thead>
13
14     <tbody>
15       <tr>
16         <th scope="row"> USA </th>
17         <td> 46 </td>
18         <td> 37 </td>
19         <td> 38 </td>
20       </tr>
21       <tr>
22         <th scope="row"> GBR </th>
23         <td> 27 </td>
24         <td> 23 </td>
25         <td> 17 </td>
26       </tr>
27       <tr>
28         <th scope="row"> CHN </th>
29         <td> 26 </td>
30         <td> 18 </td>
31         <td> 26 </td>
32       </tr>
33     </tbody>
34
35   </table>
```
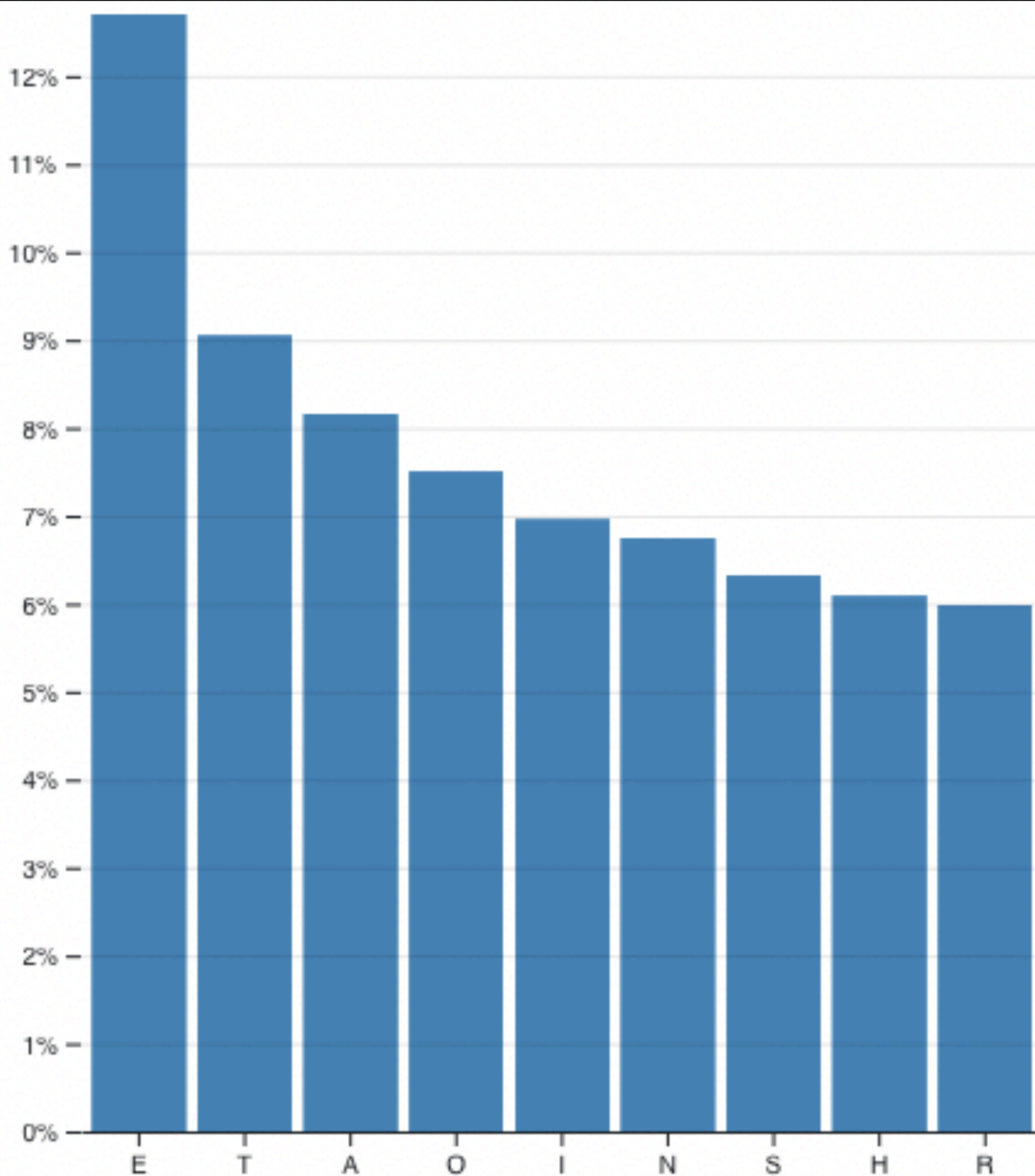
D3 Concepts

D3 Concepts

Selections

Joins

Scale

Axes

Ticks

Accessor functions

Selections

d3.select() is kinda like document.querySelector()

d3.selectAll is kinda like document.querySelectorAll()

Name	Behaviour	Example
.style	Update the style	d3.selectAll('circle').style('fill', 'red')
.attr	Update an attribute	d3.selectAll('rect').attr('width', 10)
.classed	Add/remove a class attribute	d3.select('.item').classed('selected', true)
.property	Update an element's property	d3.selectAll('.checkbox').property('checked', false)
.text	Update the text content	d3.select('div.title').text('My new book')
.html	Change the html content	d3.select('.legend').html('<div class="block"></div><div>0 - 10</div>')

Joins

Data joins are kinda like doing a mail merge in Office to create address labels based on a list in Excel

Here we use d3.join() to create a <rect> element for each item in our myData array

```
<svg id="chart"></svg>

<script>
let myData = [40, 10, 20, 60, 30];


d3.select('#chart')
  .selectAll('rect')
  .data(myData)
  .join('rect');
</script>
```

Scales

Scales help you calculate how big elements of your graph are going to be and where are they positioned. We'll cover these on Wednesday.
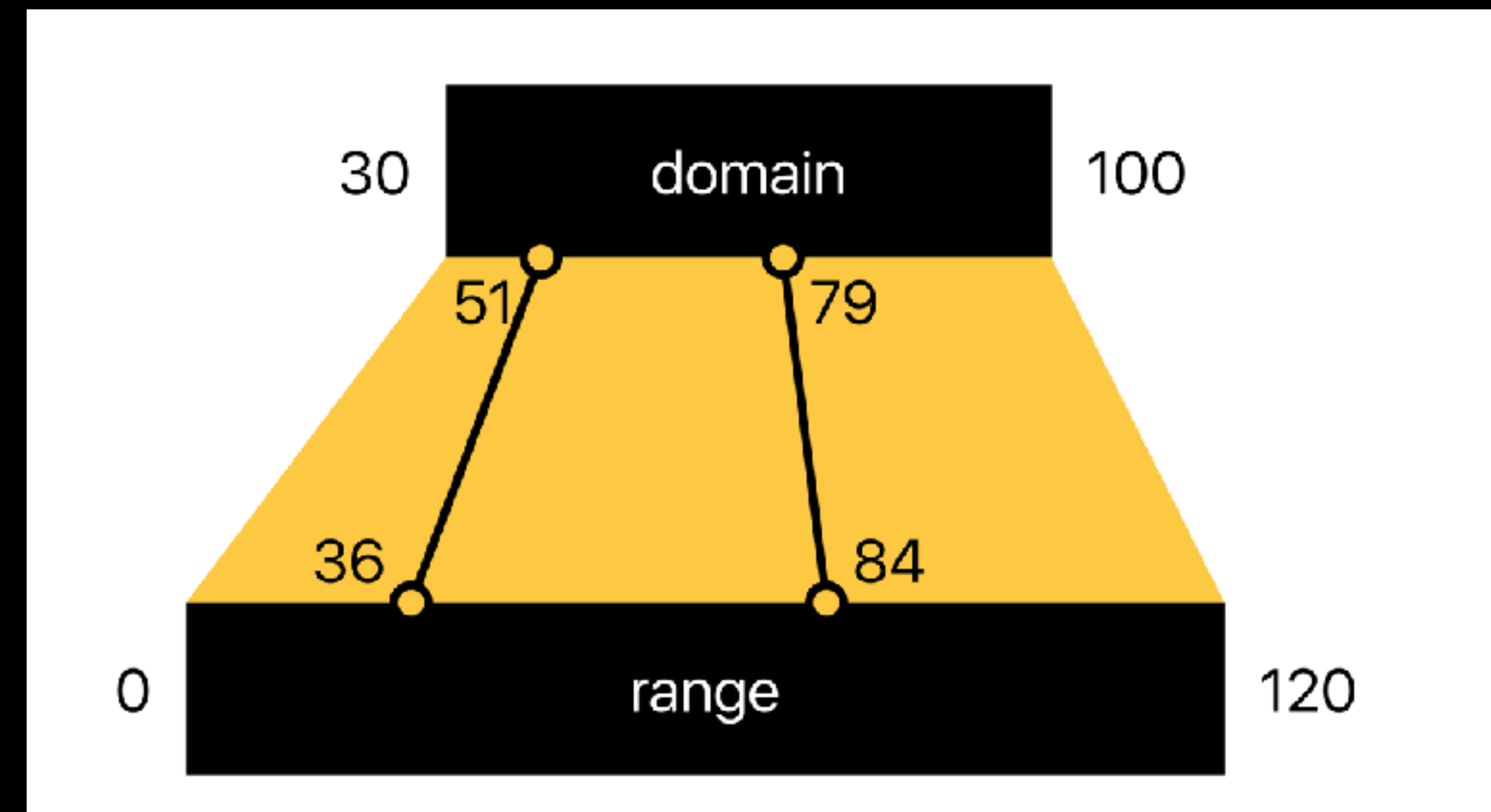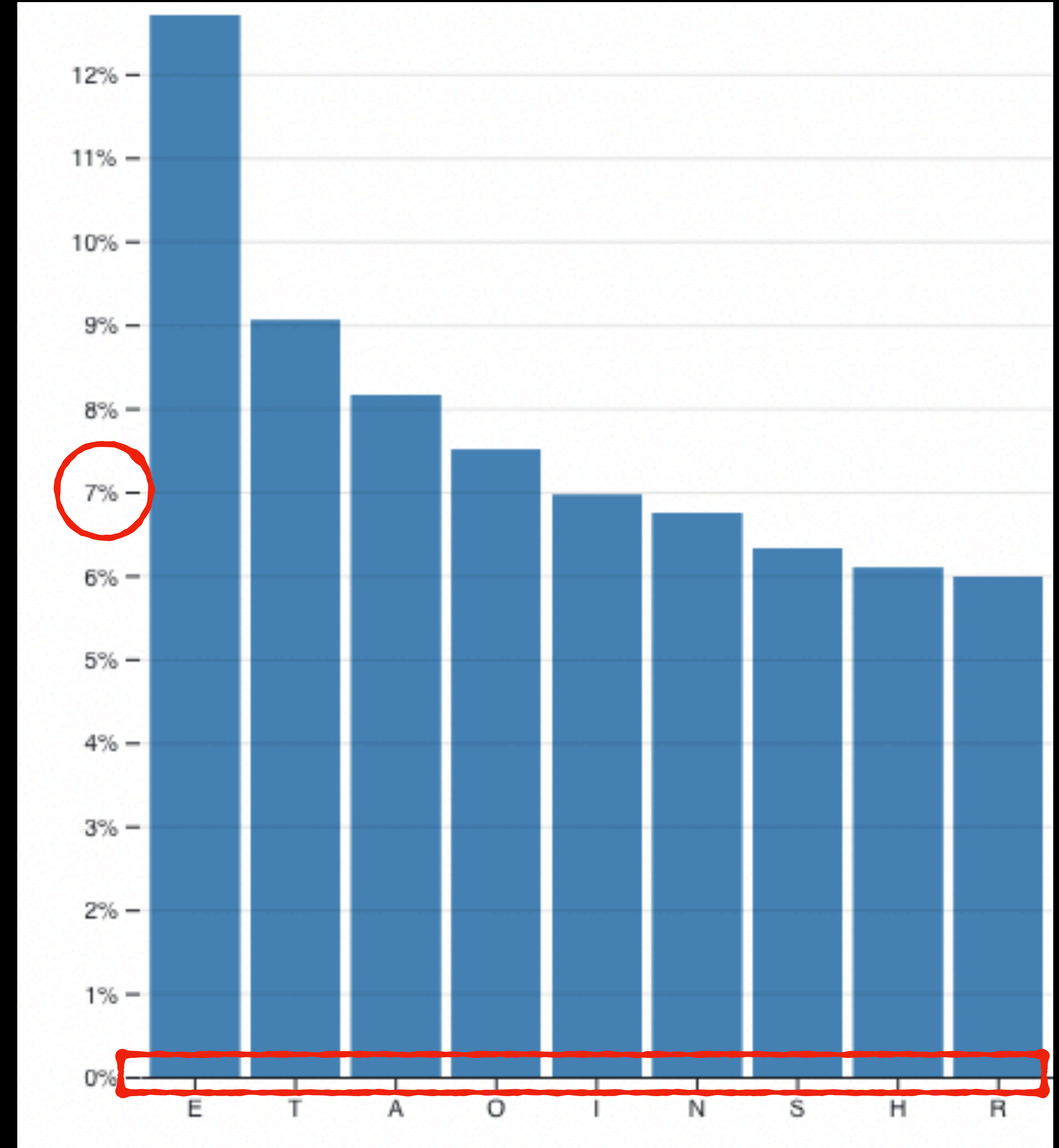
Axes & Ticks

Ticks ->

Axes ->

Accessor functions

```html
<svg id="chart"></svg>

<script>
  const myData = [
    { day: "Monday", cars: 40 },
    { day: "Tuesday", cars: 10 },
    { day: "Wednesday", cars: 20 },
    { day: "Thursday", cars: 60 },
    { day: "Friday", cars: 30 },
  ];

  d3.select("#chart")
    .selectAll("rect")
    .data(myData)
    .join("rect")
    .attr('width', d => d.cars);  <- Accessor function
</script>
```

If you're using JSON (an array of objects) you'll need to tell D3 which property you want to use

Schedule

Exercise

1. Browse through examples on the D3 website (d3js.org)

2. Create a bar chart using D3:

   1. https://observablehq.com/@d3/lets-make-a-bar-chart

   2. https://www.d3indepth.com/selections/

   3. https://www.d3indepth.com/datajoins/

Uncaught SyntaxError
Unexpected end of input