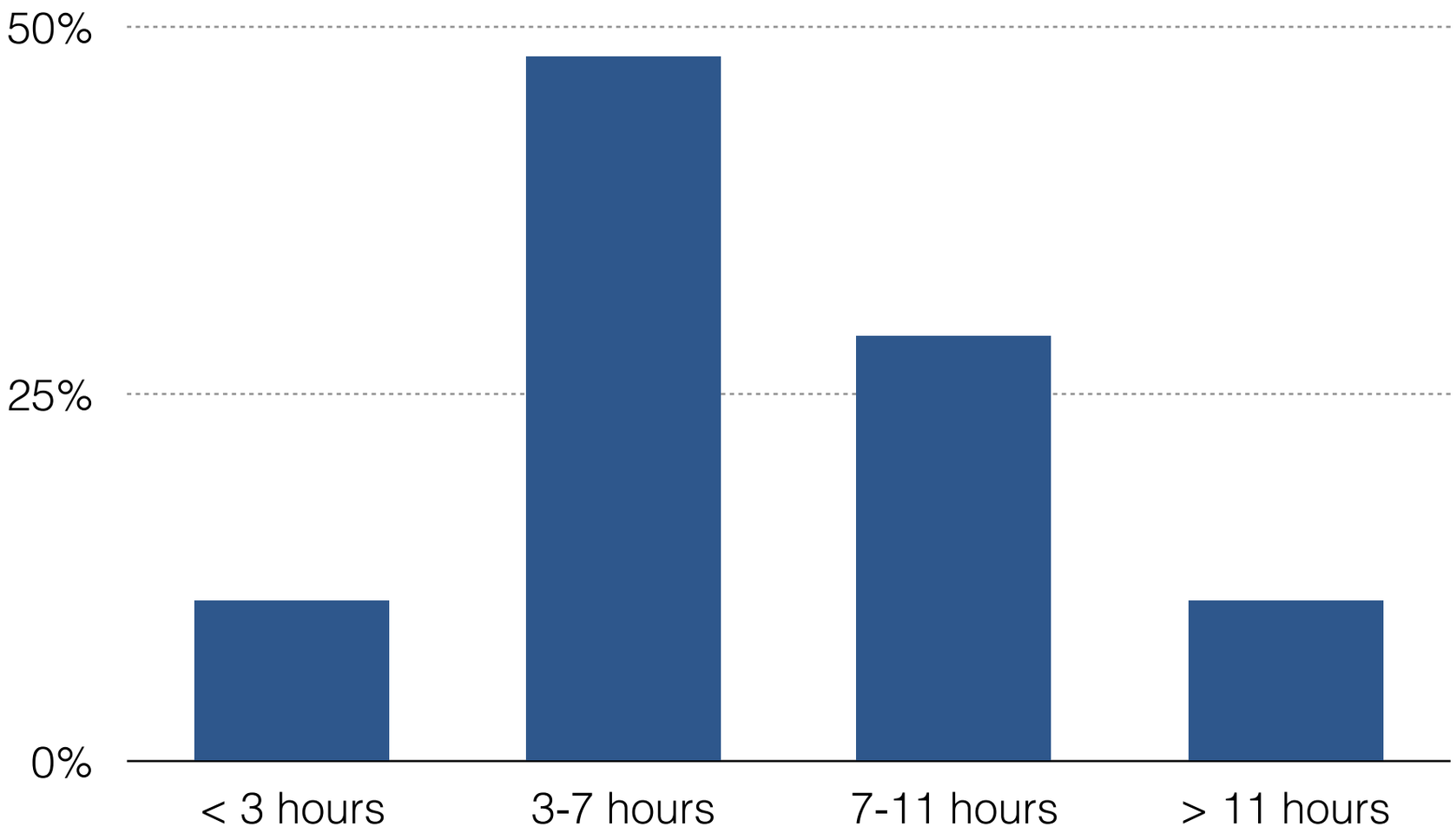
Lab 3

Introduction to SVG and D3

Homework 2

Technical Part + Design Part



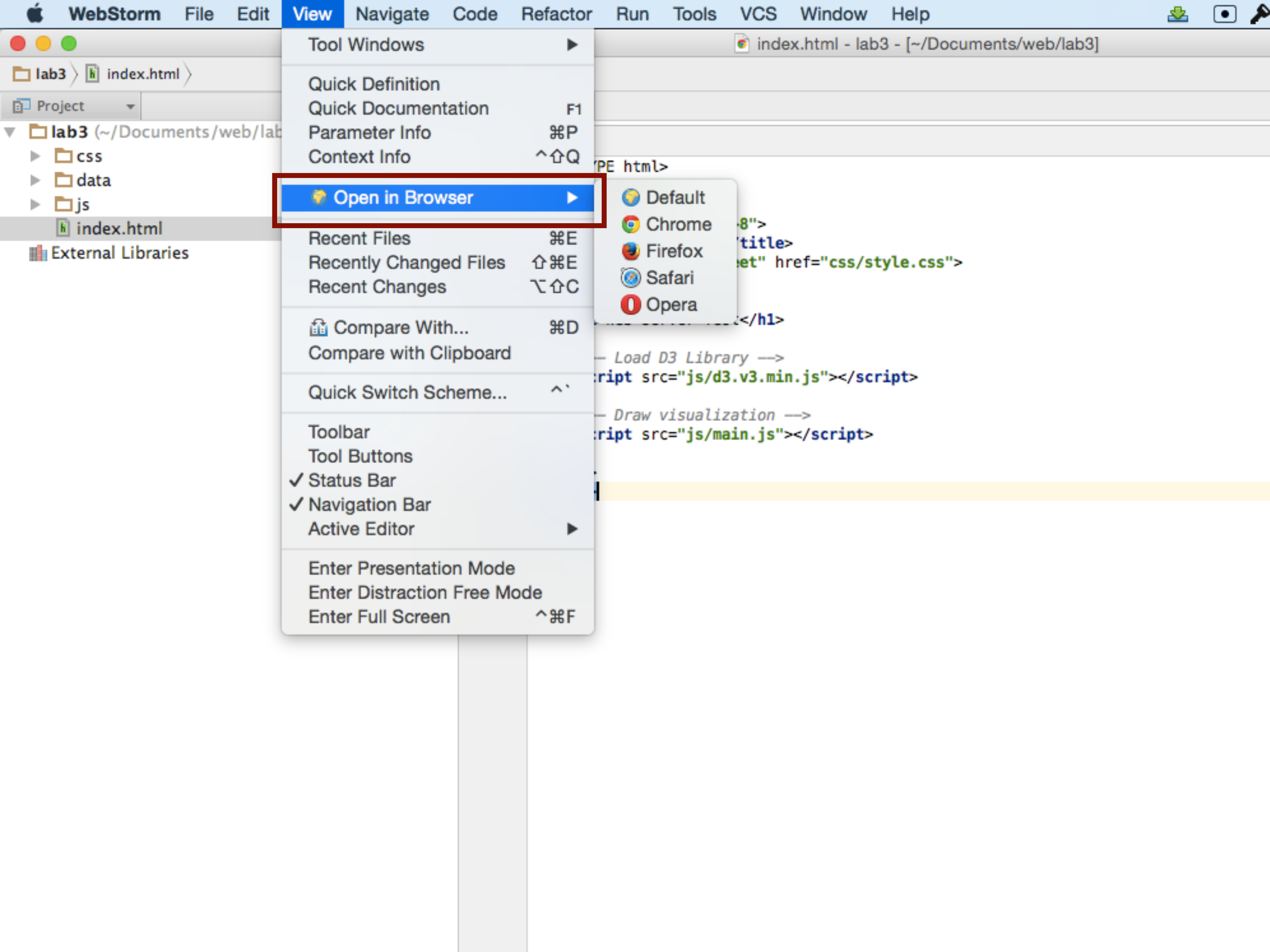
Lab / Homework Feedback

- Vocareum upload -> Zip files
- Design webpages for standard desktop monitor
- Some activities are intentionally left open, for you to think about it.
- Submission instructions for lab -> Hand in your code. No need to hand in console input/output.

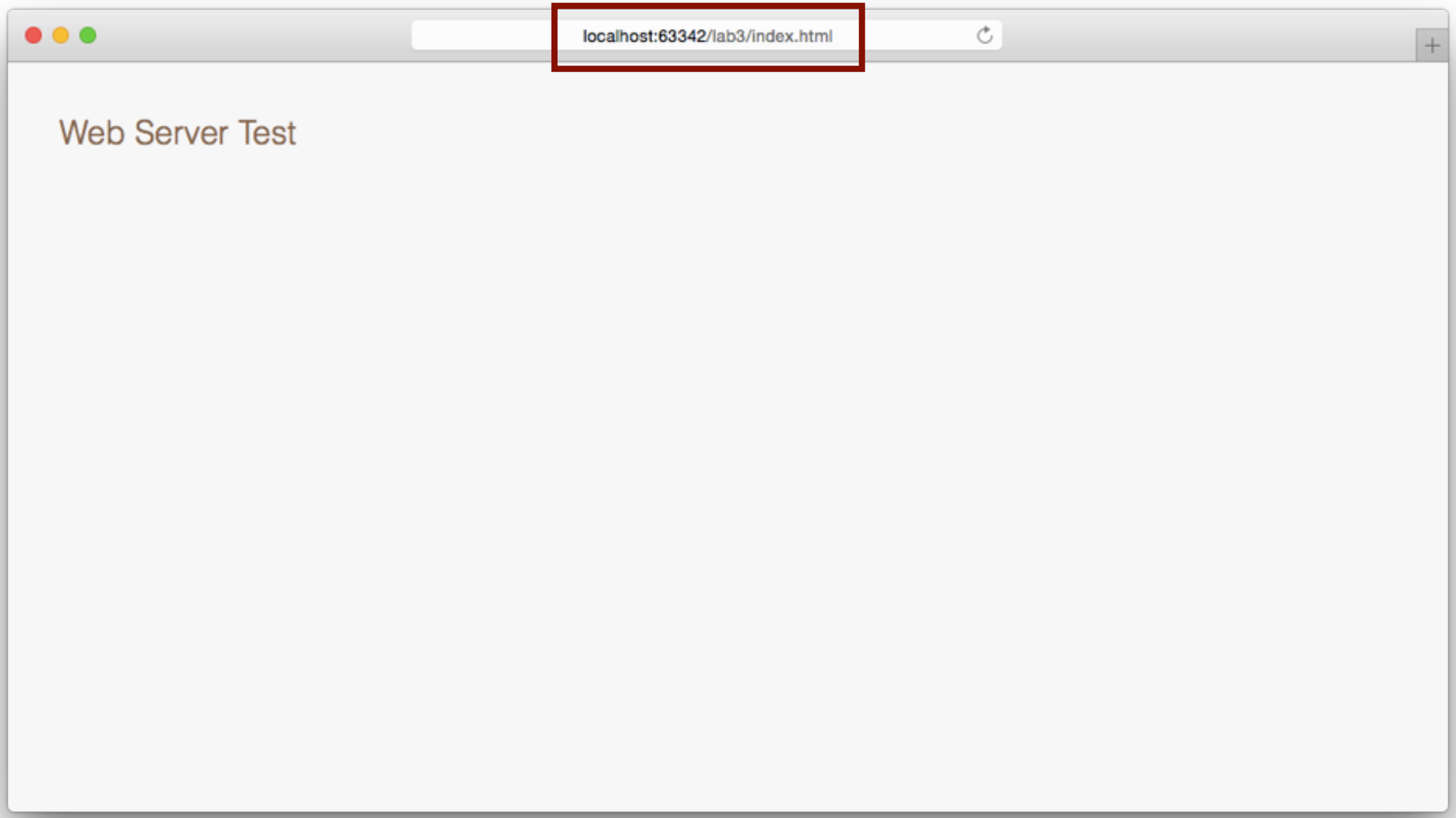
READ THE MANUAL

Follow the step by step instructions
before you start with the activities.

CS
171



WebStorm File Edit View Navigate Code Refactor Run Tools VCS Window Help
index.html - lab3 - [~/Documents/web/lab3]
lab3 index.html
Project
lab3 (~/Documents/web/lab
css
data
js
index.html
External Libraries
Tool Windows
Quick Definition
Quick Documentation F1
Parameter Info ⌘P
Context Info ^⇧Q
Open in Browser
Default
Chrome
Firefox
Safari
Opera
Recent Files ⌘E
Recently Changed Files ⇧⌘E
Recent Changes ⌥⇧C
Compare With... ⌘D
Compare with Clipboard
Quick Switch Scheme... ^`
Toolbar
Tool Buttons
Status Bar
Navigation Bar
Active Editor
Enter Presentation Mode
Enter Distraction Free Mode
Enter Full Screen ^⌘F


localhost:63342/lab3/index.html
Web Server Test

Lab 3

Introduction to SVG and D3

https://canvas.harvard.edu/courses/

› Modules › Lab 3 - Instructions

D3 Example

PROGRAMMING EXPERIENCE

CS 171

Data: programming-experience.csv

id	ranking	experience
1	1	Very comfortable
2	1	Very comfortable
...		
34	2	Comfortable
35	2	Comfortable
36	2	Comfortable
...		
150	4	Less comfortable
...		
186	5	Not at all comfortable

D3 Example

Project Structure

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>D3 Project</title>
    <link rel="stylesheet" href="css/style.css">
</head>
<body>

    <!-- Draw visualization -->
    <script src="js/main.js"></script>

    <!-- Load D3 Library -->
    <script src="js/d3.v3.min.js"></script>

</body>
</html>
```

index.html

```
d3.csv("data/programming-experience.csv", function(data) {

    // Work with data

});

// Do something else, without the data
```

main.js

Web Inspector — localhost — lab3

Console

Filter Console Log | All | Errors | Warnings | Logs

main.js:7

```
Array (186)
 0   {id: "1", ranking: "1", experience: "Very comfortable"}
 1   {id: "2", ranking: "1", experience: "Very comfortable"}
 2   {id: "3", ranking: "1", experience: "Very comfortable"}
 3   {id: "4", ranking: "1", experience: "Very comfortable"}
 4   {id: "5", ranking: "1", experience: "Very comfortable"}
 5   {id: "6", ranking: "1", experience: "Very comfortable"}
 6   {id: "7", ranking: "1", experience: "Very comfortable"}
 7   {id: "8", ranking: "1", experience: "Very comfortable"}
 8   {id: "9", ranking: "1", experience: "Very comfortable"}
 9   {id: "10", ranking: "1", experience: "Very comfortable"}
10   {id: "11", ranking: "1", experience: "Very comfortable"}
11   {id: "12", ranking: "1", experience: "Very comfortable"}
12   {id: "13", ranking: "1", experience: "Very comfortable"}
13   {id: "14", ranking: "1", experience: "Very comfortable"}
14   {id: "15", ranking: "1", experience: "Very comfortable"}
15   {id: "16", ranking: "1", experience: "Very comfortable"}
16   {id: "17", ranking: "1", experience: "Very comfortable"}
17   {id: "18", ranking: "1", experience: "Very comfortable"}
18   {id: "19", ranking: "1", experience: "Very comfortable"}
19   {id: "20", ranking: "1", experience: "Very comfortable"}
20   {id: "21", ranking: "1", experience: "Very comfortable"}
21   {id: "22", ranking: "1", experience: "Very comfortable"}
22   {id: "23", ranking: "1", experience: "Very comfortable"}
23   {id: "24", ranking: "1", experience: "Very comfortable"}
24   {id: "25", ranking: "1", experience: "Very comfortable"}
```

```
d3.csv("data/programming-experience.csv", function(data) {

  // Add SVG element (drawing area)
  d3.select("body")

});
```

main.js

```
d3.csv("data/programming-experience.csv", function(data) {

  // Add SVG element (drawing area)
  d3.select("#chart-area")

});
```

main.js

```
d3.csv("data/programming-experience.csv", function(data) {

  // Add SVG element (drawing area)
  d3.select("body").append("svg")

});
```

main.js

```
d3.csv("data/programming-experience.csv", function(data) {

  // Add SVG element (drawing area)
  d3.select("body").append("svg")
    .attr("width", 1000)
    .attr("height", 400);

});
```

main.js

```
d3.csv("data/programming-experience.csv", function(data) {

  // Add SVG element (drawing area)
  var svg = d3.select("body").append("svg")
    .attr("width", 1000)
    .attr("height", 400);

});
```

main.js

Method Chaining:

```
var svg = d3.select("body").append("svg")
  .attr("width", 1000)
  .attr("height", 400);
```

Alternative:

```
var body = d3.select("body");
var svg = body.append("svg");

svg.attr("width", 1000);
svg.attr("height", 400);
```

```
d3.csv("data/programming-experience.csv", function(data) {

  // Add SVG element (drawing area)
  var svg = d3.select("body").append("svg")
    .attr("width", 1000)
    .attr("height", 400);

});
```

main.js

```
d3.csv("data/programming-experience.csv", function(data) {
  var svg = ...

  // Add rectangles
  svg.selectAll("rect")
      .data(data)
```

```
});
```

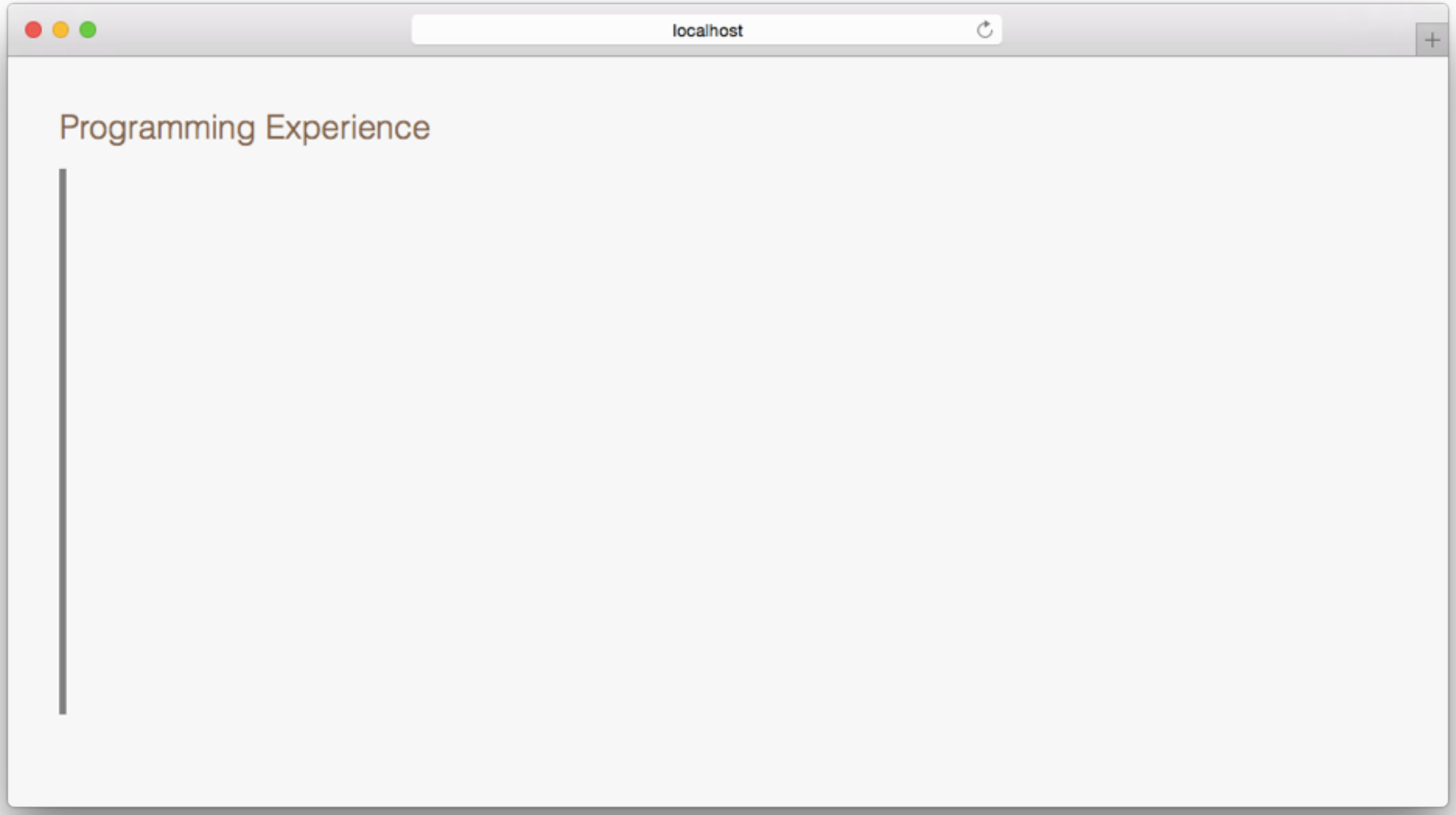
main.js

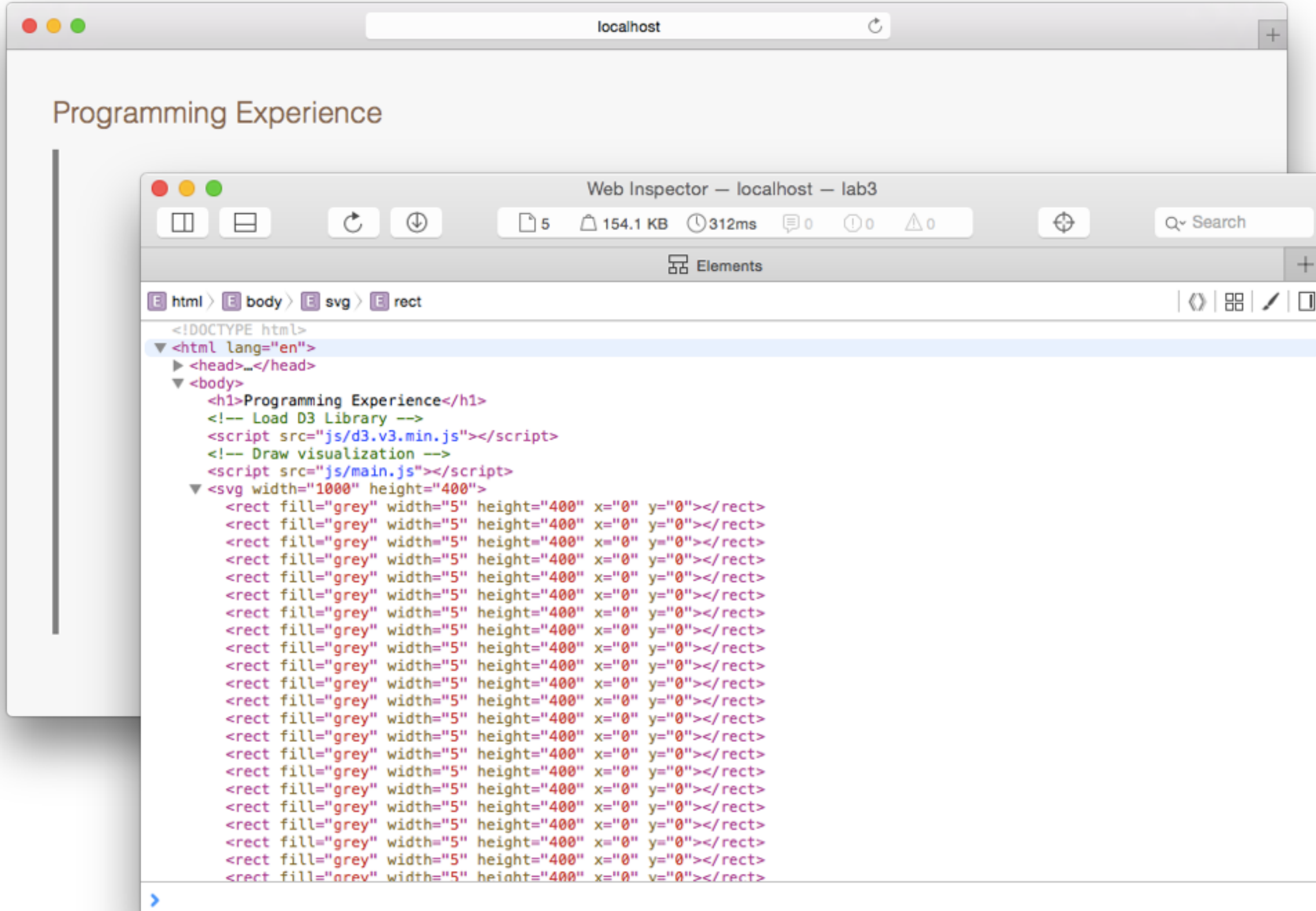
```
d3.csv("data/programming-experience.csv", function(data) {

  var svg = ...

  // Add rectangles
  svg.selectAll("rect")
      .data(data)
    .enter().append("rect")

});
```

main.js

```
d3.csv("data/programming-experience.csv", function(data) {
  var svg = ...

  // Add rectangles
  svg.selectAll("rect")
      .data(data)
    .enter().append("rect")
      .attr("fill", "grey")
      .attr("width", 5)
      .attr("height", 400)
      .attr("y", 0)
      .attr("x", 0);




});
```

main.js


localhost
Programming Experience



localhost
Programming Experience
Web Inspector — localhost — lab3
5
154.1 KB
312ms
0
0
0
Search
Elements
html
body
svg
rect
<!DOCTYPE html>
<html lang="en">
<head>…</head>
<body>
<h1>Programming Experience</h1>
<!-- Load D3 Library -->
<script src="js/d3.v3.min.js"></script>
<!-- Draw visualization -->
<script src="js/main.js"></script>
<svg width="1000" height="400">
<rect fill="grey" width="5" height="400" x="0" y="0"></rect>
<rect fill="grey" width="5" height="400" x="0" y="0"></rect>
<rect fill="grey" width="5" height="400" x="0" y="0"></rect>
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<rect fill="grey" width="5" height="400" x="0" y="0"></rect>
<rect fill="grey" width="5" height="400" x="0" y="0"></rect>

```
d3.csv("data/programming-experience.csv", function(data) {
  var svg = ...

  // Add rectangles
  svg.selectAll("rect")
      .data(data)
    .enter().append("rect")
      .attr("fill", "grey")
      .attr("width", 5)
      .attr("height", 400)
      .attr("y", 0)
      .attr("x", function(d, index){
        return (index * 5);
      });


});
```

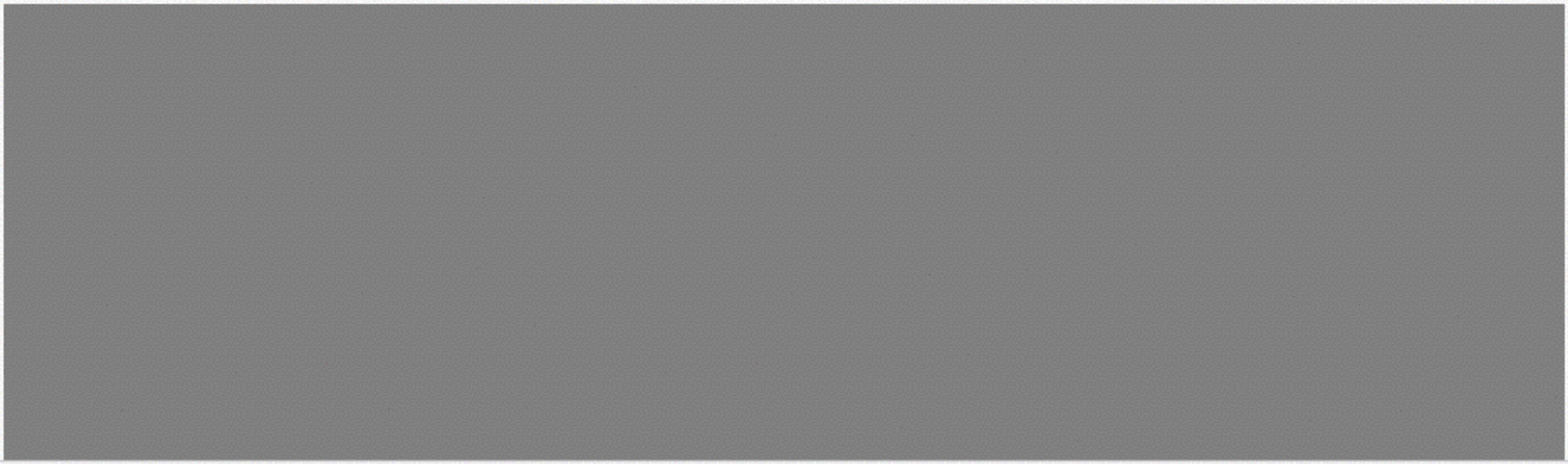
main.js

localhost

Programming Experience

localhost:63342/lab3/index.html

Programming Experience



4 – – 0 0 0 Search

Elements

html › body › svg › rect

```
<script src="js/d3.v3.min.js"></script>
<!-- Draw visualization -->
<script src="js/main.js"></script>
<svg width="1000" height="400">
  <rect fill="grey" width="5" height="400" y="0" x="0"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="5"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="10"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="15"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="20"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="25"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="30"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="35"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="40"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="45"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="50"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="55"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="60"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="65"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="70"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="75"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="80"></rect>
  <rect fill="grey" width="5" height="400" y="0" x="85"></rect>
```

```
d3.csv("data/programming-experience.csv", function(data) {
  var svg = ...

  svg.selectAll("rect")
      .data(data)
    .enter().append("rect")
      .attr("fill", function(d) {
        if(d.experience == "Very comfortable")
          return "darkred";
        else
          return "grey";
      })
      .attr("width", 5)
      .attr("height", 400)
      .attr("y", 0)
      .attr("x", function(d, index){
        return (index * 5);
      });
});
```

main.js

localhost

Programming Experience