

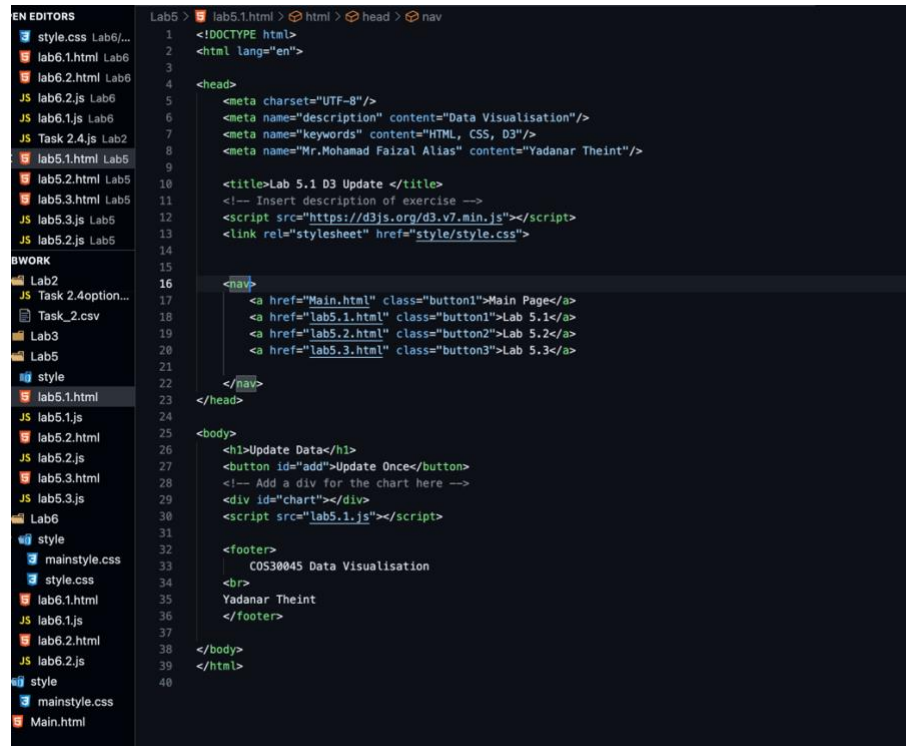
Name – Yadanar Theint

Student ID – 104992813

GitHub - <https://github.com/Treasure-Mei-box/COS30045/tree/main>

Hosting Website – <http://yadanartheint.infinityfreeapp.com/Labwork/Lab1/Main.html>

Lab 5.1



```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8"/>
6   <meta name="description" content="Data Visualisation"/>
7   <meta name="keywords" content="HTML, CSS, D3"/>
8   <meta name="Mr.Mohamad Faizal Alias" content="Yadanar Theint"/>
9
10  <title>Lab 5.1 D3 Update </title>
11  <!-- Insert description of exercise -->
12  <script src="https://d3js.org/d3.v7.min.js"></script>
13  <link rel="stylesheet" href="style/style.css">
14
15
16  <nav>
17    <a href="Main.html" class="button1">Main Page</a>
18    <a href="lab5.1.html" class="button1">Lab 5.1</a>
19    <a href="lab5.2.html" class="button2">Lab 5.2</a>
20    <a href="lab5.3.html" class="button3">Lab 5.3</a>
21  </nav>
22
23 </head>
24
25 <body>
26   <h1>Update Data</h1>
27   <button id="add">Update Once</button>
28   <!-- Add a div for the chart here -->
29   <div id="chart"></div>
30   <script src="lab5.1.js"></script>
31
32   <footer>
33     COS30045 Data Visualisation
34     <br>
35     Yadanar Theint
36   </footer>
37
38 </body>
39 </html>
```

Lab5 > JS lab5.1.js > ...

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```
var svg1 = d3.select("#chart")
    .attr("height", h);

// Bind data and create bars
updateBars(dataset);

// D3 event handler for the button
d3.select("button").on("click", function() {
    dataset = generateDataset(dataset.length, 25);
    yScale.domain([0, d3.max(dataset)]);
    updateBars(dataset);
});

// Function to generate a new dataset
function generateDataset(numValues, maxValue) {
    var data = [];
    for (var i = 0; i < numValues; i++) {
        var newNumber = Math.floor(Math.random() * maxValue);
        data.push(newNumber);
    }
    return data;
}

// Function to update the bars on the chart
function updateBars(data) {
    // Join new data
    var bars = svg1.selectAll("rect")
        .data(data);

    // Update bars
    bars.enter()
        .append("rect")
        .merge(bars)
        .transition()
        .duration(500)
        .attr("x", function(d, i) { return xScale(i); })
        .attr("y", function(d) { return yScale(d); })
        .attr("width", xScale.bandwidth())
        .attr("height", function(d) { return h - yScale(d); })
        .attr("fill", "green");

    // Remove old bars
    bars.exit().remove();
}
```

Lab6/...
lab6.1.html Lab6
lab6.2.html Lab6
lab6.2.js Lab6
lab6.1.js Lab6
Task 2.4.js Lab2
lab5.1.html Lab5
lab5.1.js Lab5
lab5.2.html Lab5
lab5.3.html Lab5
lab5.3.js Lab5
Lab2
Task 2.4option...
Task_2.csv
Lab3
Lab5
style
lab5.1.html
lab5.1.js
lab5.2.html
lab5.2.js
lab5.3.html
lab5.3.js
Lab6
style
mainstyle.css
style.css
lab6.1.html
lab6.1.js
lab6.2.html
lab6.2.js
style
mainstyle.css
Main.html

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Main Page

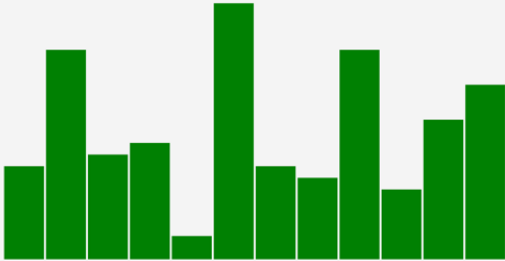
Lab 5.1

Lab 5.2

Lab 5.3

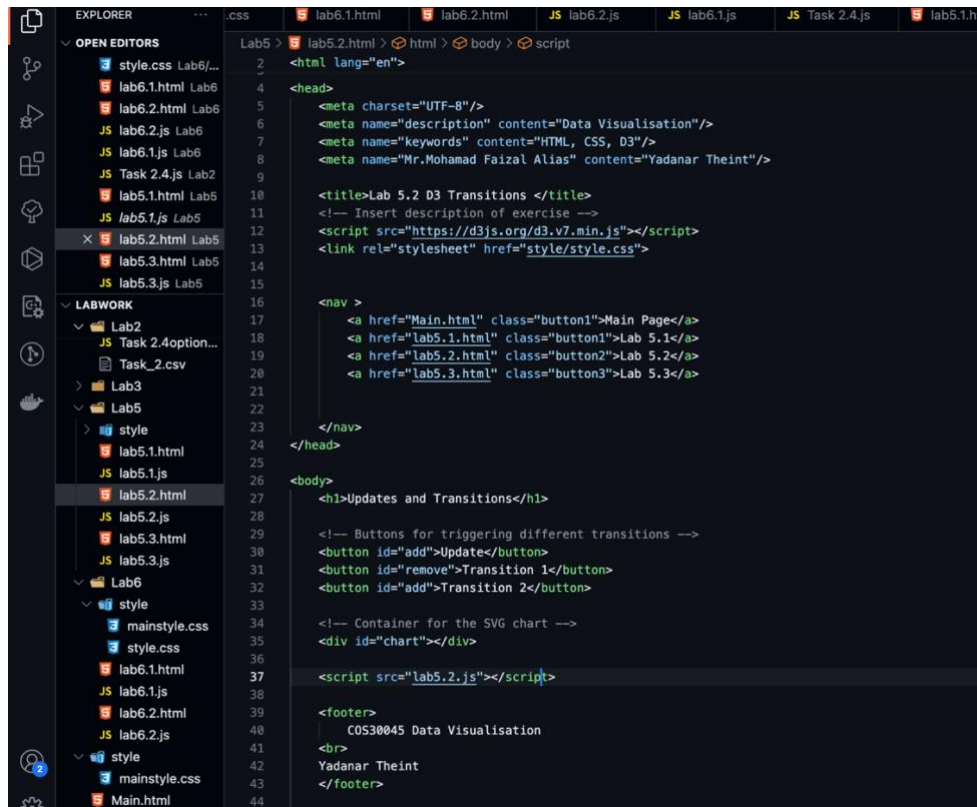
Update Data

Update Once

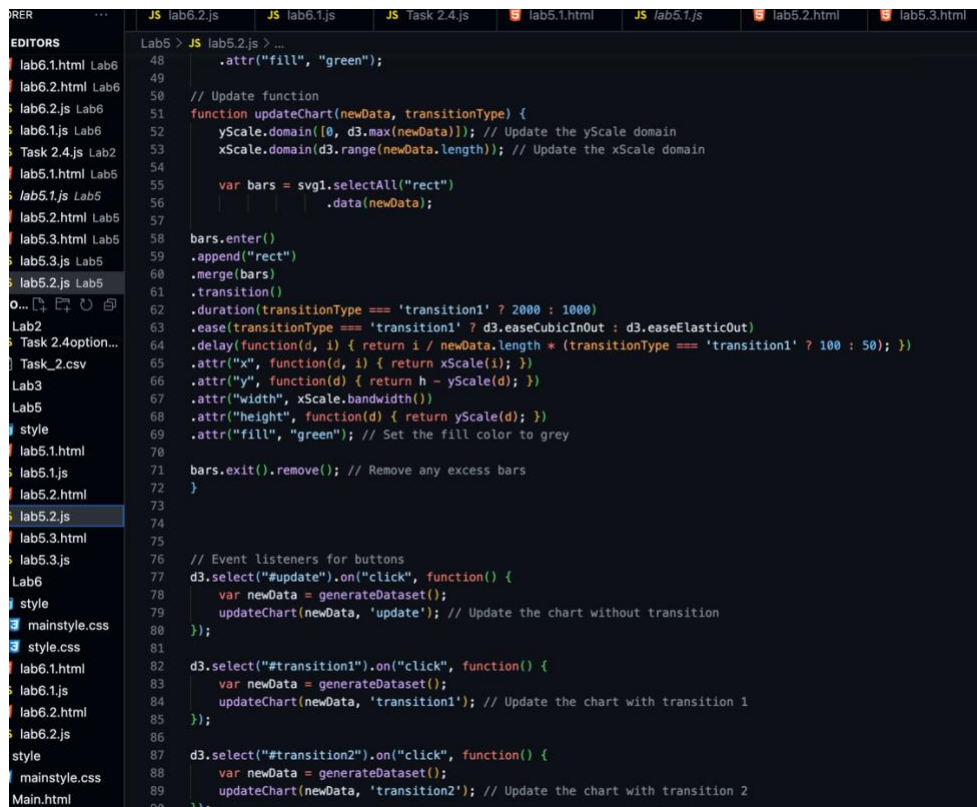


COS30045 Data Visualisation
Yadanar Theint

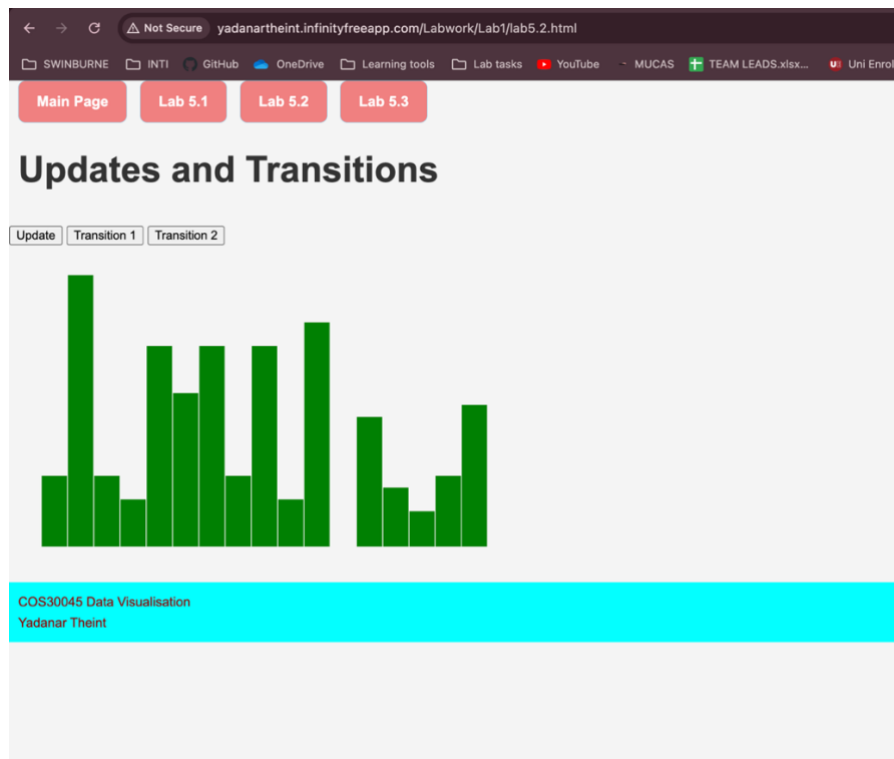
Lab 5.2



```
Lab5 > lab5.2.html > html > body > script
1 <html lang="en">
2
3 <head>
4   <meta charset="UTF-8"/>
5   <meta name="description" content="Data Visualisation"/>
6   <meta name="keywords" content="HTML, CSS, D3"/>
7   <meta name="Mr.Mohamad Faizal Alias" content="Yadanar Theint"/>
8
9   <title>Lab 5.2 D3 Transitions </title>
10  <!-- Insert description of exercise -->
11  <script src="https://d3js.org/d3.v7.min.js"></script>
12  <link rel="stylesheet" href="style/style.css">
13
14  <nav >
15    <a href="Main.html" class="button1">Main Page</a>
16    <a href="Lab5.1.html" class="button1">Lab 5.1</a>
17    <a href="Lab5.2.html" class="button2">Lab 5.2</a>
18    <a href="Lab5.3.html" class="button3">Lab 5.3</a>
19  </nav>
20
21 </head>
22
23 <body>
24  <h1>Updates and Transitions</h1>
25
26  <!-- Buttons for triggering different transitions -->
27  <button id="add">Update</button>
28  <button id="remove">Transition 1</button>
29  <button id="add">Transition 2</button>
30
31  <!-- Container for the SVG chart -->
32  <div id="chart"></div>
33
34  <script src="lab5.2.js"></script>
35
36 </body>
37
38 <footer>
39   COS30045 Data Visualisation
40   <br>
41   Yadanar Theint
42 </footer>
43
44
```



```
Lab5 > JS lab5.2.js > ...
48 .attr("fill", "green");
49
50 // Update function
51 function updateChart(newData, transitionType) {
52   yScale.domain([0, d3.max(newData)]); // Update the yScale domain
53   xScale.domain(d3.range(newData.length)); // Update the xScale domain
54
55   var bars = svg1.selectAll("rect")
56     .data(newData);
57
58   bars.enter()
59     .append("rect")
60     .merge(bars)
61     .transition()
62     .duration(transitionType === 'transition1' ? 2000 : 1000)
63     .ease(transitionType === 'transition1' ? d3.easeCubicInOut : d3.easeElasticOut)
64     .delay(function(d, i) { return i / newData.length * (transitionType === 'transition1' ? 100 : 50); })
65     .attr("x", function(d, i) { return xScale(i); })
66     .attr("y", function(d) { return h - yScale(d); })
67     .attr("width", xScale.bandwidth())
68     .attr("height", function(d) { return yScale(d); })
69     .attr("fill", "green"); // Set the fill color to grey
70
71   bars.exit().remove(); // Remove any excess bars
72 }
73
74 // Event listeners for buttons
75
76 d3.select("#update").on("click", function() {
77   var newData = generateDataset();
78   updateChart(newData, 'update'); // Update the chart without transition
79 });
80
81 d3.select("#transition1").on("click", function() {
82   var newData = generateDataset();
83   updateChart(newData, 'transition1'); // Update the chart with transition 1
84 });
85
86 d3.select("#transition2").on("click", function() {
87   var newData = generateDataset();
88   updateChart(newData, 'transition2'); // Update the chart with transition 2
89 });
90
```



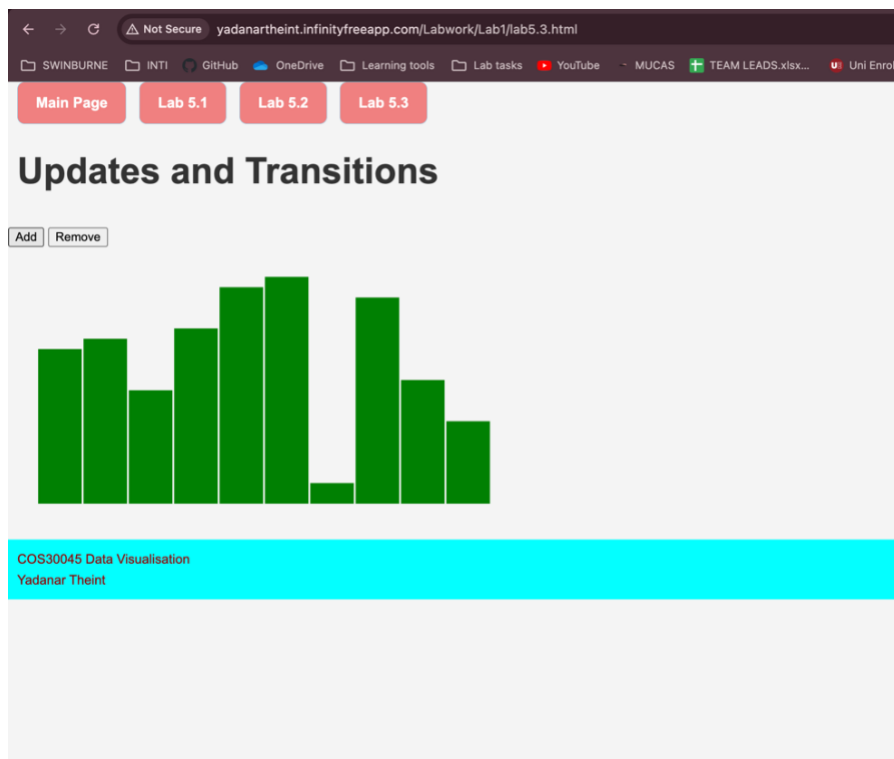
Lab 5.3

```
EXPLORER
  OPEN EDITORS
    lab6.1.html Lab6
    lab6.2.html Lab6
    JS lab6.2.js Lab6
    JS lab6.1.js Lab6
    JS Task 2.4.js Lab2
    lab5.1.html Lab5
    JS lab5.1.js Lab5
    lab5.2.html Lab5
    X lab5.3.html Lab5
    JS lab5.3.js Lab5
    JS lab5.2.js Lab5
  LABWORK
    Lab2
      JS Task 2.4option...
      Task_2.csv
    Lab3
    Lab5
      style
      lab5.1.html
      JS lab5.1.js
      lab5.2.html
      JS lab5.2.js
      lab5.3.html
      JS lab5.3.js
    Lab6
      style
      mainstyle.css
      style.css
      lab6.1.html
      JS lab6.1.js
      lab6.2.html
      JS lab6.2.js
      style
      mainstyle.css
      Main.html
  JS lab6.2.js
  JS lab6.1.js
  JS Task 2.4.js
  lab5.1.html
  JS lab5.1.js
  lab5.2.html

Lab5 > lab5.3.html > html > body
2 <html lang="en">
3 <head>
4   <meta name="description" content="Data Visualisation"/>
5   <meta name="keywords" content="HTML, CSS, D3"/>
6   <meta name="Mr.Mohamad Faizal Alias" content="Yadanar Theint"/>
7
8   <title>Lab 5.2 D3 Transitions </title>
9   <!-- Insert description of exercise -->
10  <script src="https://d3js.org/d3.v7.min.js"></script>
11  <link rel="stylesheet" href="style/style.css">
12
13  <nav >
14    <a href="Main.html" class="button1">Main Page</a>
15    <a href="lab5.1.html" class="button1">Lab 5.1</a>
16    <a href="lab5.2.html" class="button2">Lab 5.2</a>
17    <a href="lab5.3.html" class="button3">Lab 5.3</a>
18  </nav>
19 </head>
20
21 <body>
22   <h1>Updates and Transitions</h1>
23
24   <!-- Buttons for triggering different transitions -->
25   <button id="add">Add</button>
26   <button id="remove">Remove</button>
27
28   <!-- Container for the SVG chart -->
29   <div id="chart"></div>
30
31   <script src="lab5.3.js"></script>
32
33   <footer>
34     COS30045 Data Visualisation
35     <br>
36     Yadanar Theint
37   </footer>
38 </body>
39 </html>
```

```
EXPLORER
  OPEN EDITORS
    lab6.1.html Lab6
    lab6.2.html Lab6
    JS lab6.2.js Lab6
    JS lab6.1.js Lab6
    JS Task 2.4.js Lab2
    lab5.1.html Lab5
    JS lab5.1.js Lab5
    lab5.2.html Lab5
    lab5.3.html Lab5
    X JS lab5.3.js Lab5
    JS lab5.2.js Lab5
  LABWORK
    Lab2
      JS Task 2.4option...
      Task_2.csv
    Lab3
    Lab5
      style
        lab5.1.html
        JS lab5.1.js
        lab5.2.html
        JS lab5.2.js
        lab5.3.html
        JS lab5.3.js
      Lab6
        style
          mainstyle.css
          style.css
          lab6.1.html
          JS lab6.1.js
          lab6.2.html
          JS lab6.2.js
        style
          mainstyle.css
          Main.html

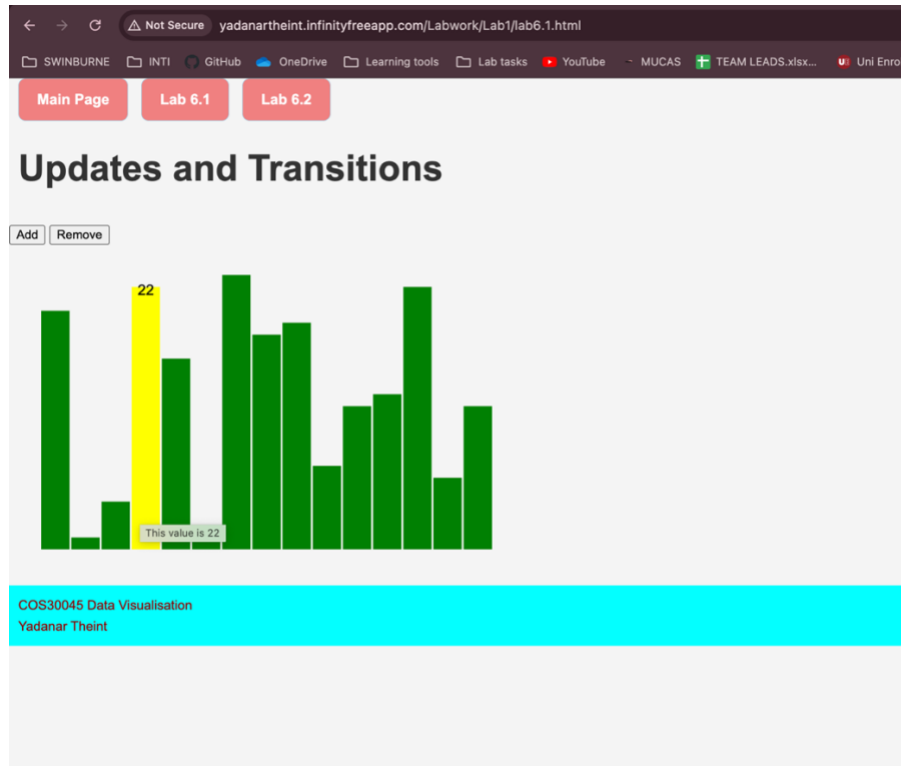
Lab5 > JS lab5.3.js > ...
24 function updateChart() {
25   yscale.domain([0, d3.max(dataset)]);
26   xscale.domain(d3.range(dataset.length));
27
28   // Select all bars and bind the data
29   var bars = svg.selectAll("rect")
30     .data(dataset);
31
32   // Enter selection for new bars
33   bars.enter()
34     .append("rect")
35     .attr("fill", "green")
36     .merge(bars) // Merge enter and update selection
37     .transition()
38     .duration(500)
39     .attr("x", function(d, i) { return xScale(i); })
40     .attr("y", function(d) { return h - yScale(d); })
41     .attr("width", xScale.bandwidth())
42     .attr("height", function(d) { return yScale(d); })
43     .attr("fill", "green");
44
45   // Exit selection for removing bars
46   bars.exit()
47     .transition()
48     .duration(500)
49     .attr("x", w)
50     .remove();
51
52 }
53
54 // Event listener for the 'Add' button
55 d3.select("#add").on("click", function() {
56   // Generate new number and add to the dataset
57   var newNumber = Math.floor(Math.random() * maxValue);
58   dataset.push(newNumber);
59   updateChart(); // Update the chart
60 });
61
62 // Event listener for the 'Remove' button
63 d3.select("#remove").on("click", function() {
64   // Remove the first element of the array
65   dataset.shift();
66   updateChart(); // Update the chart
67 });
```



Lab 6.1

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8"/>
6   <meta name="description" content="Data Visualisation"/>
7   <meta name="keywords" content="HTML, CSS, D3"/>
8   <meta name="Mr.Mohamad Faizal Alias" content="Yadananar Theint"/>
9
10  <title>Lab 6.1 D3 Transitions </title>
11  <!-- Insert description of exercise -->
12  <script src="https://d3js.org/d3.v7.min.js"></script>
13  <link rel="stylesheet" href="style/style.css">
14
15
16  <nav>
17    <a href="Main.html" class="button1">Main Page</a>
18    <a href="lab6.1.html" class="button1">Lab 6.1</a>
19    <a href="lab6.2.html" class="button2">Lab 6.2</a>
20  </nav>
21
22 </head>
23
24 <body>
25   <h1>Updates and Transitions</h1>
26
27   <!-- Buttons for triggering different transitions -->
28   <button id="add">Add</button>
29   <button id="remove">Remove</button>
30
31   <!-- Container for the SVG chart -->
32   <div id="chart"></div>
33
34   <script src="lab6.1.js"></script>
35
36 </script>
37 <footer>
38   COS30045 Data Visualisation
39   <br>
40   Yadananar Theint
41 </footer>
42
43 </body>
44 </html>
```

```
24 var mouseoverFunction = function(event, d) {
31   var yPosition = parseFloat(d3.select(this).attr("y")) + 10;
32
33   svg1.append("text")
34     .attr("id", "tooltip")
35     .attr("x", xPosition)
36     .attr("y", yPosition)
37     .attr("text-anchor", "middle")
38     .text(d);
39
40   var mouseoutFunction = function() {
41     d3.select(this)
42       .transition()
43       .duration(100)
44       .attr("fill", "green");
45
46     d3.select("#tooltip").remove();
47   };
48
49   // Function to update the chart
50   function updateChart() {
51     // Update the scales
52     yScale.domain([0, d3.max(dataset)]);
53     xScale.domain(d3.range(dataset.length));
54
55     // Select all bars and bind the data
56     var bars = svg1.selectAll("rect")
57       .data(dataset);
58
59     // Enter selection for new bars
60     bars.enter()
61       .append("rect")
62       .attr("fill", "green")
63       .merge(bars) // Merge enter and update selection
64       .on("mouseover", mouseoverFunction)
65       .on("mouseout", mouseoutFunction)
66       .transition()
67       .duration(500)
68       .attr("x", function(d, i) { return xScale(i); })
69       .attr("y", function(d) { return yScale(d); })
70       .attr("width", xScale.bandwidth())
71       .attr("height", function(d) { return h - yScale(d); });
72 }
```

Lab 6.2

```
EXPLORER
OPEN EDITORS
lab6.1.html Lab6
lab6.2.html Lab6
JS lab6.2.js Lab6
JS lab6.1.js Lab6
JS Task 2.4.js Lab2
lab5.1.html Lab5
lab5.1.js Lab5
lab5.2.html Lab5
lab5.3.html Lab5
lab5.3.js Lab5
lab5.2.js Lab5
LABWORK
Lab2
JS Task 2.4option...
Task_2.csv
Lab3
Lab5
style
lab5.1.html
lab5.1.js
lab5.2.html
lab5.2.js
lab5.3.html
lab5.3.js
Lab6
style
mainstyle.css
style.css
lab6.1.html
lab6.1.js
lab6.2.html
lab6.2.js
style
mainstyle.css
Main.html
style.css
lab6.1.html
lab6.2.html
JS lab6.2.js
JS lab6.1.js
JS Task 2.4.js
Lab6 > lab6.2.html > html > head > nav > a.button2
2 <html lang="en">
3 <head>
4
5 <meta name="keywords" content="HTML, CSS, D3"/>
6 <meta name="Mr.Mohamad Faizal Alias" content="Yadanar Theint"/>
7
8
9
10 <title>Lab 5.2 D3 Transitions </title>
11 <!-- Insert description of exercise -->
12 <script src="https://d3js.org/d3.v7.min.js"></script>
13 <link rel="stylesheet" href="style/style.css">
14
15
16
17 <nav >
18 <a href="Main.html" class="button1">Main Page</a>
19 <a href="lab6.1.html" class="button1">Lab 6.1</a>
20 <a href="lab6.2.html" class="button2">Lab 6.2</a>
21
22 </nav>
23 </head>
24
25 <body>
26 <h1>Updates and Transitions</h1>
27
28 <!-- Buttons for triggering different transitions -->
29 <button id="add">Add</button>
30 <button id="remove">Remove</button>
31 <button id="sort">Sort</button>
32
33 <!-- Container for the SVG chart -->
34 <div id="chart"></div>
35
36 <script src="lab6.2.js"></script>
37
38 <footer>
39 COS30045 Data Visualisation
40 Yadanar Theint
41 </footer>
42
43 </body>
44 </html>
```

EXPLORER

OPEN EDITORS

LABWORK

Lab6 > JS lab6.2.js > ...

```
83 }
84
85 // Event listener for the 'Add' button
86 d3.select("#add").on("click", function() {
87   // Generate new number and add to the dataset
88   var newNumber = Math.floor(Math.random() * maxValue);
89   dataset.push(newNumber);
90   updateChart(); // Update the chart
91 });
92
93 // Event listener for the 'Remove' button
94 d3.select("#remove").on("click", function() {
95   // Remove the first element of the array
96   dataset.shift();
97   updateChart(); // Update the chart
98 });
99
100 // Sort the bars based on the current sort order
101 var sortOrder = false;
102 function sortBars() {
103   sortOrder = !sortOrder; // toggle the order state
104   var x = sortOrder ? d3.ascending : d3.descending; // determine sort function
105
106   svg1.selectAll("rect")
107     .sort(function(a, b) {
108       return sortOrder ? d3.ascending(a, b) : d3.descending(a, b);
109     })
110     .transition()
111     .duration(1000)
112     .attr("x", function(d, i) {
113       return xScale(i);
114     });
115
116   // Re-bind the data to follow the new order
117   xScale.domain(dataset.sort(sortOrder ? d3.ascending : d3.descending).map(function(d, i) {
118     return i;
119   }));
120
121   updateChart(); // Update the chart
122 }
123
124 // Event listener for the 'Sort' button
125 d3.select("#sort").on("click", sortBars);
126
```

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Main Page

Lab 6.1

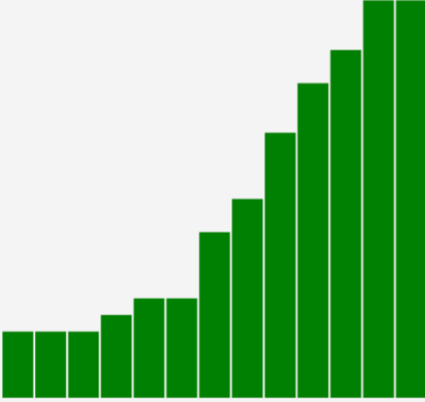
Lab 6.2

Updates and Transitions

Add

Remove

Sort



COS30045 Data Visualisation
Yadanar Theint