# **Data Science and Data Visualization**

# **Lab 2 – Introduction to D3.js**

Reference:

JSON: <https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/JSON>

D3: <https://d3js.org/> - Be careful with the version of D3

D3 tutorials: <https://github.com/d3/d3/wiki/Tutorials>

D3 load data with parser - <https://github.com/d3/d3-dsv#dsv_parse>

Instructions

* Use ONLY D3 library
* Read chapter 5 and 6 of the Interactive Data Visualization for the Web
* Submit your work (all html, js, css files) to the blackboard assignment for this lab

Details

1. **Info**

Create an HTML web page with the title “Lab 2”. It contains the following text:

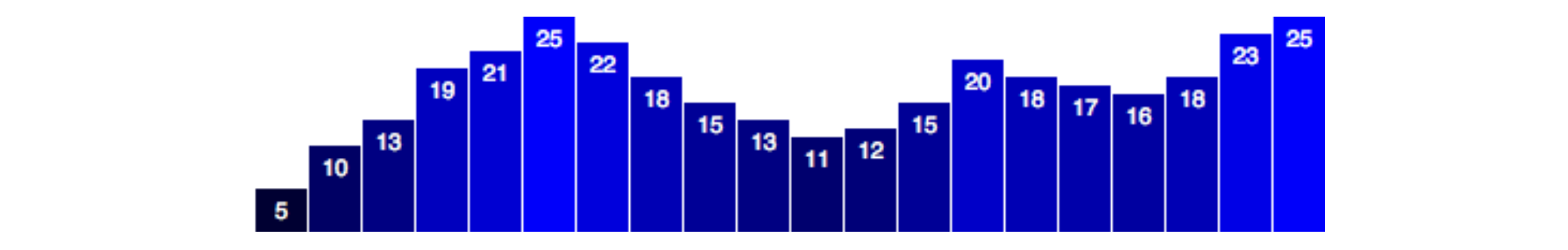
* Your name,
* Your student ID,
* The course tile “Data science and data visualization”,
* The lab title “Lab 2 – Introduction to D3.js”,
* The text “This is all my own work. I did not copy the code from any other source”.

1. **Bar chart**

* In the same page, write code to draw bar chart with D3.js.
* The bar chart should be dynamic. It should be able to draw any dataset.
* Each column in the bar chart should
  + be colored based on the value that it represents,
  + have label to show the value

Create an array of size 20 and initialized it with a random value, then draw the bar chart

The result should look like the following



Hints: Read about the following functions of d3

* selectAll
* data
* enter

1. **Scatterplot**

In the same web page, draw a scatterplot chart.

* Read a csv file using d3

d3.csv("https://tungth.github.io/data/vis-lab2-data.csv",rowConverter)

.then(data => {

// your code to handle the data and draw charts

console.log(data)

your\_draw\_chart\_function(data);

});

function your\_draw\_chart\_function(data) {

console.log(data.length)

}

* You should write code to use the given data to produce a scatterplot that shows the score of students in their midterm and final exam. The midterm exam score should be encoded with x-position, and the final exam score should be encoded with y-position.   
  Each value should be shown as a circle with radius=5pixels.
* Assume that the midterm and final scores contribute to the final score 40% and 60%, correspondingly. Highlight all students who cannot pass the course (their score is below 50)

1. **Histogram**

* Use the same source file and the bar chart in part 1, draw an histogram for the data with 10 bins