# **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/>

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

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 assigment for this lab

Details

1. **Info**

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

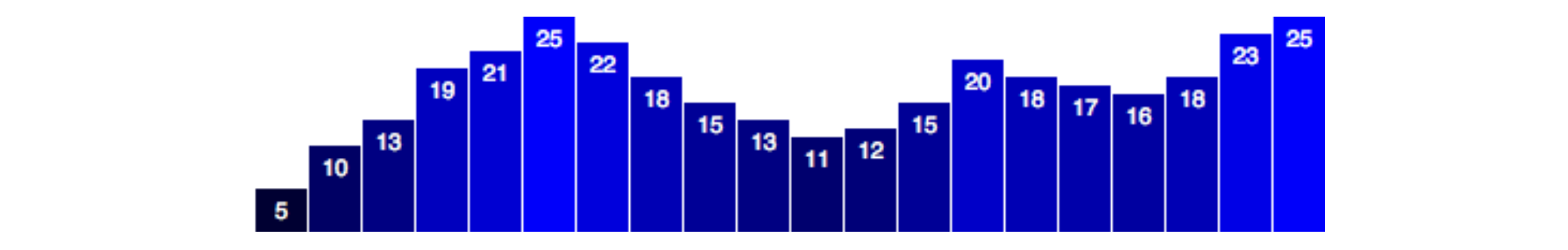
* Your name
* Your student ID
* The course tile “Data science and data visualization”
* The lab title “Lab 2 – Introduction to D3.js”
* The text “This is all my own work. I did not copy the code from any other source”

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, function(error, data) {

if (error) {

console.log(error);

}

else {

console.log(data);

// your code to handle the data and draw charts

}

}

* 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 on circle with radius=5pixels.
* Assume that the midterm and final score contributes 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