# Assignment 2 – Multi line using D3JS

Data: data\_sample.csv attached to the assignment

## Part 1 table of data: (40 Points)

The data\_sample.csv file includes data for a supply chain. The column EstimatedCost is the estimate provided by the supply chain consultant experts (e.g. $1000 Per Ton) of the Final Product, before delivering to the customer each month. The three other columns are the actual costs of Raw Materials Cost, Workmanship Cost, and Storage Cost in the warehouse. Use JavaScript (or Python), to calculate the margin of profit for each month considering the final price sold Estimate cost x 1.1.

The final columns should be

Date, EstimatedCost, RawMaterial, Workmanship, Storage, **ActualCost**, **SoldPrice**, **Margin of Profit**

To make all uniform, please follow these equations:

**ActualCost** = Raw Material Cost + Workmanship Cost + Storage Cost  
**SoldPrice** =  Estimate Cost x 1.1  
**MarginOfProfit**  = Sold Price -  Actual Cost

* 25/50 points for table
* 5/50 Column Captions
* 5/50 Border styling
* 5/50 Readability, font size, margins, and padding

## Part 2 Line chart: Line generator (50 Points)

Multiline Chart using D3js

Line chart should have 4 lines marks (refer to marks and channels) in 1 plot (1 SVG)

Line 1: Estimated Cost

Line 2: Actual Cost Price

Line 3: Sold Price

Line 4: Margin of Profit

* Use d3.scaleLinear and d3.scaleTime
* Convert the date into date format, check the examples, and the video
* You can either use const color = d3.scaleOrdinal(d3.schemeCategory10) or use colors from colorbrewer.
* Use of transition and styling to make the chart look nicer (extra points)
* SVG viewBox(0 0 1000 800)

Points for Part 2: (60 points)

* 5/60 points **per** each Line
* 10/60 xAxis & yAxis
* 10/60 legend
* 20/60 Correct Scaling, margins, styling, and readability of the labels.

FAQ:

1- How to apply Equations above?

Use either one of the methods below:

* Method 1: Use array map operator in JavaScript (code should be in visualization file)
* Method 2: Use Python (include code)

2- Do I have to put both the table and Visualization (line chart) in 1 html page side by side?

Yes

3- Can I use any random styling?

No, please use color brewer for styling: <https://colorbrewer2.org/#type=qualitative&scheme=Paired&n=4>

4. How do I make a table?

Use your own code, or just take the following code

function TableGenerator(data,container){

const table = d3.selectAll(container)

.append("Table")

.selectAll(".rows")

.data(data)

.enter()

.append("tr")

.selectAll(".td")

.data((d,i)=> {

if(i===0){

return Object.keys(d);

}

else{

return Object.values(d)

}

})

.enter()

.append("td")

.text(d=>d)

}

Other resources:

[Linkedin Learning](https://www.linkedin.com/learning-login/share?account=74653914&forceAccount=false&redirect=https%3A%2F%2Fwww.linkedin.com%2Flearning%2Flearning-data-visualization-with-d3-js%2Fusing-transitions-and-animations%3Ftrk%3Dshare_video_url%26shareId%3DF6gThrvrTt2a3bAPC0cj2w%253D%253D)

<https://d3js.org/>

Free books:

   D3.js in Action  
   <https://www.manning.com/books/d3-js-in-action>

   D3 in Depth  
   <https://www.d3indepth.com/>

   Data Visualization with D3 CookBook  
   <https://subscription.packtpub.com/book/web_development/9781782162162/1>