

Visualization Project Report

Assignment 1

17th February 2020

Implementation Details – [Link to YouTube](#)

I have designed a responsive user interface using Bootstrap and jQuery. To plot the charts, I have used D3.js. I have performed code modularization so that new pieces can be added by making only a few changes.

```
index.html JS index.js JS barChart.js JS dataProcessing.js x
> JS dataProcessing.js > ...
1  metaData = {
2    "Categorical": {
3      "Nationality": { key: "nat", data: [], natData: [] },
4      "Age": { key: "age", data: [], natData: [] },
5      "Turned Pro": { key: "turned_pro", data: [], natData: [] }
6    },
7    "Numerical": {
8      "Weight": { key: "weight", data: [], natData: [] },
9      "Height": { key: "height", data: [], natData: [] },
10     "Aces": { key: "aces", data: [], natData: [] },
11     "Double Faults": { key: "double_faults", data: [], natData: [] }
12   }
13 }
14
```

```
▼ CSS
# barChart.css
# main.css
▼ data / ATP
atp_info.csv
Modify_Data.ipynb
players_info.csv
▼ JS
JS barChart.js
JS dataProcessing.js
JS histogram.js
JS index.js
JS player.js
JS trial.js
index.html
Project Report.docx
```

Tasks

1) Present a menu to allow users to select a variable and update chart

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Categorical Numerical

Numerical Variables

Select a parameter

Weight

Weight

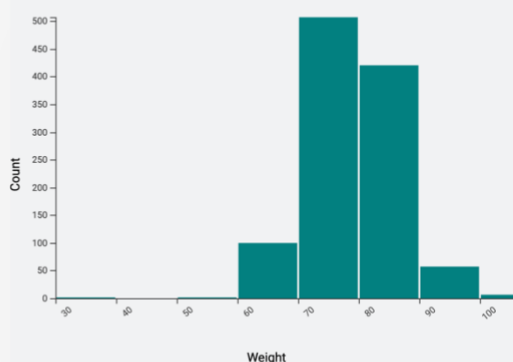
Height

Aces

Double Faults

5 15 25

Distribution of tennis players by Weight



Dropdown is used to control the chart on the right.

2) Draw a bar chart if a categorical variable is selected

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Categorical Numerical

Categorical Variables

Select a parameter

Nationality

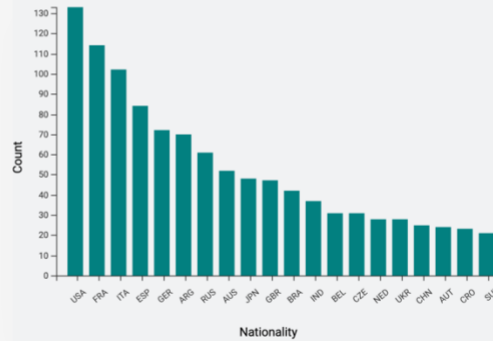
Modify X-axis

☒ Sorted by Values

Slide number of bars

5 20 25

Distribution of tennis players by Nationality



3) Draw a histogram if a numerical variable is selected

Visualization

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Categorical Numerical

Numerical Variables

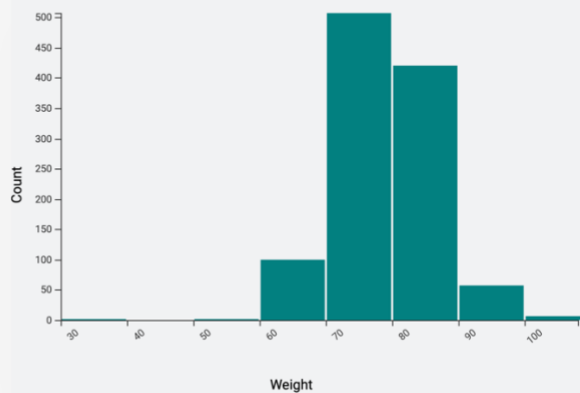
Select a parameter

Weight

Slide number of bins

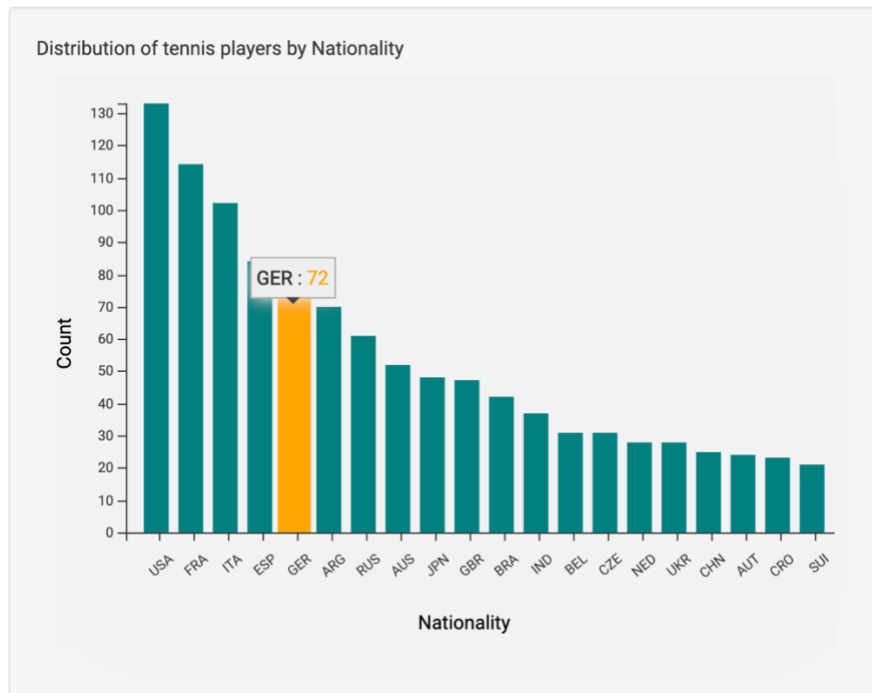
5 15 25

Distribution of tennis players by Weight



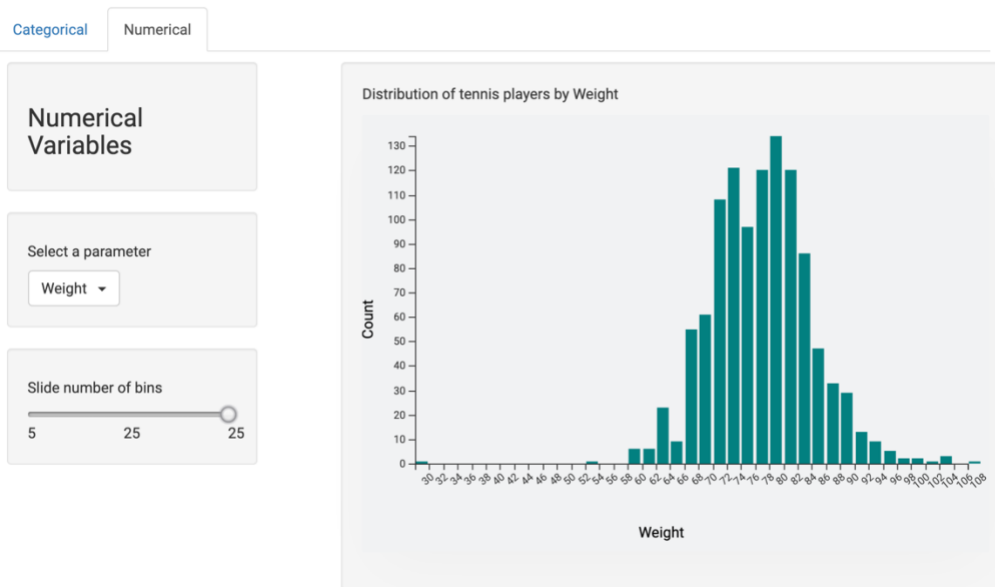
4) On mouse-over display the value of the bar on top of the bar

5) On mouse-over also make the bar wider and higher to focus on it



6) Mouse (with left mouse button down) move left (right) should decrease (increase) bin width/size (for numerical variables only)





Tools Used

Libraries/Technologies used:

- D3.js v5
- Bootstrap and jQuery
- HTML, CSS and JS

Data Set

ATP Players Info (1500, 35):

- The data extracted from [ATP](#) contains 35 different categories upon which the tennis players.
- Categorical data: Nationality, Age, Turned Pro Year
- Numerical data: Weight, Height, Aces, Double Fault

ATP Tournament Info (44065, 33):

- The data extracted from [Open data](#) contains 33 different categories upon which every tennis match ever played is categorized.