

CS5044 – d3.js practical

TOP 5 FOOTBALL LEAGUES TRANSFER SPENDING



WORD COUNT: 143 + 85 + 54

Website link: 143 + 85

# DATA & QUESTIONS

The football transfer market has transformed and changed over the years. Using the power of JavaScript and D3.js we will be exploring the following question:

* How do the top 5 league transfer spending’s compare with each other over the seasons and what players positions are mostly involved in these transfers?

To answer this question, we will be using data obtained from [Kaggle](https://www.kaggle.com/vardan95ghazaryan/top-250-football-transfers-from-2000-to-2018). Our chosen dataset has recorded details of the 250 most expensive transfers each season. The data collection holds data for all the leagues; however, we will be working with a subsample of it which involves only the top 5 football leagues which are 3339 from the original 4700 observations:

1. Premier League
2. Bundesliga
3. LaLiga
4. Ligue 1
5. Serie A

The dataset provides us with 10 attributes, but we will be using only four of them:

|  |  |  |
| --- | --- | --- |
| Attribute Name | Attribute Type | Attribute Meaning |
| Season | Ordinal (String) | Season transfer was made |
| Position | Nominal (String) | Player’s playing position involved in transfer |
| League\_to | Nominal (String) | The league the player is being transferred to |
| Transfer\_fee | Numerical (Integer) | The transfer fee amount in € |

[TABLE 1.1] Showing the attributes that were used in whole visualisation

# IMPLEMENTATION

As a beginning stage we followed a ‘5-sheet ideation process’ to brainstorm multiple options of expressing the data

When we first started undertaking the project in terms of coding, we were not familiar with the D3.js technology. For this reason, we worked on a simple solution and iteratively added more complex features to improve the final result. Different ideas, tutorials were inspired from which our code is based on:

1. [D3 Block](https://bl.ocks.org/)
2. [Stack-Overflow](https://stackoverflow.com/)
3. [D3-Gallery](https://www.d3-graph-gallery.com/)

Specific blocks/links can be found on code comments.

# DESCRIPTION OF VISUALISATION

Each data attribute has been encoded with a specific visual variable to allow the visualisation to communicate with the user in an expressive and effective manner. In addition to this two of the attributes have been used as filters to allow the user to interact with data and the visualisation state.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ATTRIBUTE | ATTRIBUTE TYPE | VISUAL VARIABLE | REASON OF VISUAL VARIABLE | EXPRESSIVE(YES/NO) |
| Season | ORDINAL | POSITION | Showing the sequential order of the seasons | YES |
| Position | NOMINAL | POSITION | Each position indicates a different value | YES |
| League\_to | NOMINAL | COLOUR(HUE) | Different colour indicates a different league | YES |
| Transfer\_fee | QUANTITATIVE | LENTGH/POSITION | Larger length or furthest position means larger transfer amount | YES |

[TABLE 1.2] Showing the attributes used in visualization with their visual variable used to encode it.

|  |  |  |  |
| --- | --- | --- | --- |
| ATTRIBUTE | ATTRIBUTE TYPE | INTERACTION TYPE | REASON |
| Season | NOMINAL | (CHECKBOX)FILTER | To allow the user to filter out data not interested in. Checkbox to allow user compare seasons that are not sequential. |
| League | NOMINAL | (CHECKBOX)FILTER | To allow the user compare only leagues interested in. |

[TABLE 1.3] Showing the attributes used in visualization as interactions for the user.

# INSIGHTS FROM THE VISUALISATION & CRITICAL DISCUSSION

* Insights a user can get from it
* Ex. Most $ spent was in 17/18 you can see bar graph
* Explain each graph
* Through all seasons except 2 seasons, PL spent the most

# REFERENCES

[1] Data was collected from Kaggle at : <https://www.kaggle.com/vardan95ghazaryan/top-250-football-transfers-from-2000-to-2018>

[2] Block.org at : https://bl.ocks.org

[3] Stack-Overflow at : https://stackoverflow.com

[4] D3-Gallery at : <https://www.d3-graph-gallery.com>

[5] Jonathan C. Roberts, C. H. (n.d.). *etching designs using the Five Design-Sheet Methodology.* Retrieved from http://fds.design/wp-content/uploads/2015/10/fds- presentation-final-ieeevis2015.pdf

[6] Book for effective visuals : **Design for information: an introduction to the histories, theories, and best practices behind effective information visualizations**