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FACULDADE DE CIÊNCIAS E TECNOLOGIAS



ADVANCED DATA VISUALIZATION

Intermediate Project Delivery

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Index

1	Introduction	2
2	Data	2
2.1	Pre-Processing	2
2.2	Attributes	2
3	Design	2
3.1	Plots	2
3.2	Colour Palette	5
4	Conclusion	5

1 Introduction

In this first part of the semester we have been developing several plots that can be displayed in our Dashboard, and choosing the adequate data to display since we have loads of data from the most various type of car. We have inspired ourselves in what we would like to see in a page about cars since we have different levels of car knowledge and for our understanding this will make the project be more helpful for all kinds of knowledge. We have implemented a portion of the work we intended to that related with our references from the Proposal.

2 Data

2.1 Pre-Processing

The pre-processing has been almost complete, needing just a bit of attention when it comes to the Electrical and Hybrid vehicles because their attributes are not in the same space as the normal combustion cars and our goal is to have the information easily accessible for every user that goes to check the dataset or some details of it.

One of our objectives was to be able to get the country list for every manufacturer. For this, we created a complimentary .csv file that contained all the unique manufacturers and the country they are based in. This will be helpful in trying to capture even more information about the cars and the manufacturers themselves.

2.2 Attributes

Until now, we have covered loads of information in our project and aim to cover more so that we can get a more complete dashboard. For now, we have used the more general columns, and we weren't able to analyse the specific columns that are related to Electrical cars, but hope to do it very soon so that our Comparison of Specific cars plot works even if the user tries to compare an electrical car and a normal diesel combustion car.

3 Design

3.1 Plots

- Average Maximum Speed by Brand by Year
- Average Power by Brand by Year
- Comparison of Specific Cars
- Compare Average Combined Consumption by Brand
- Manufacturer Count per Country
- Power vs Displacement per Fuel Type
- Top Speed vs Power
- Combined Consumption x Segment or Model

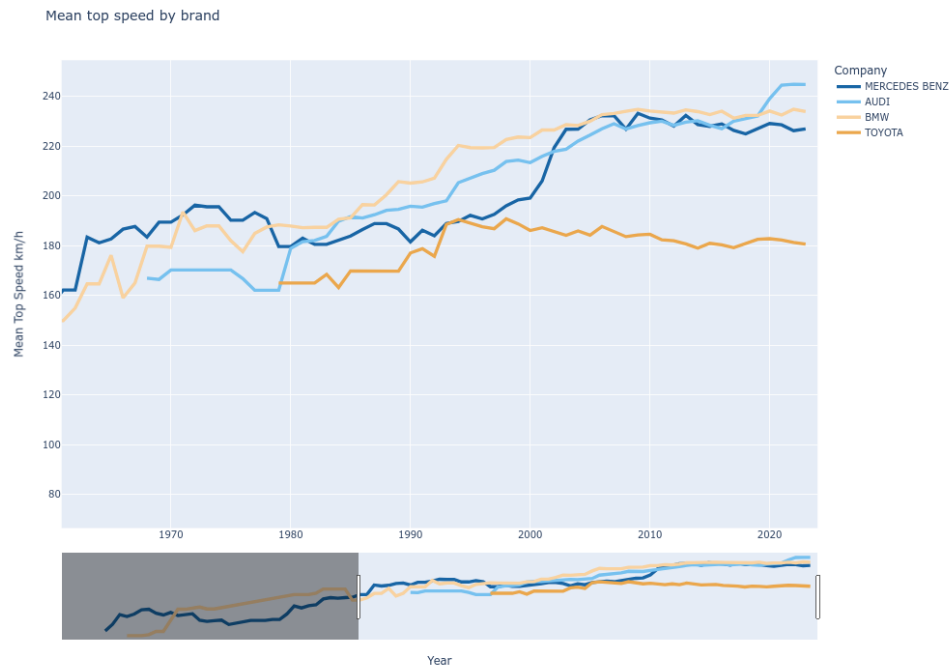


Fig. 1: Average Maximum Speed by Brand by Year

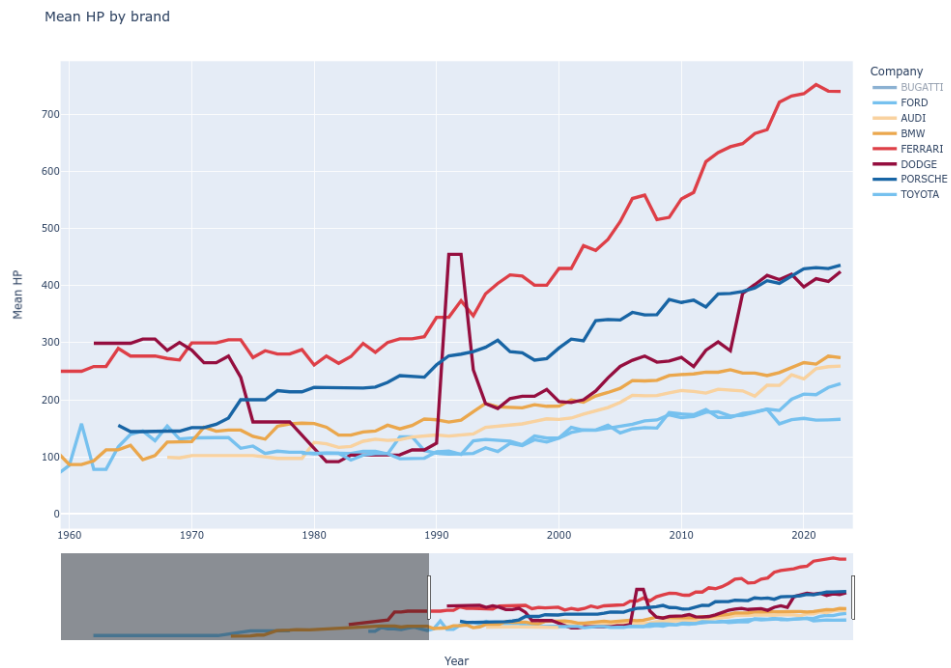


Fig. 2: Average Power by Brand by Year

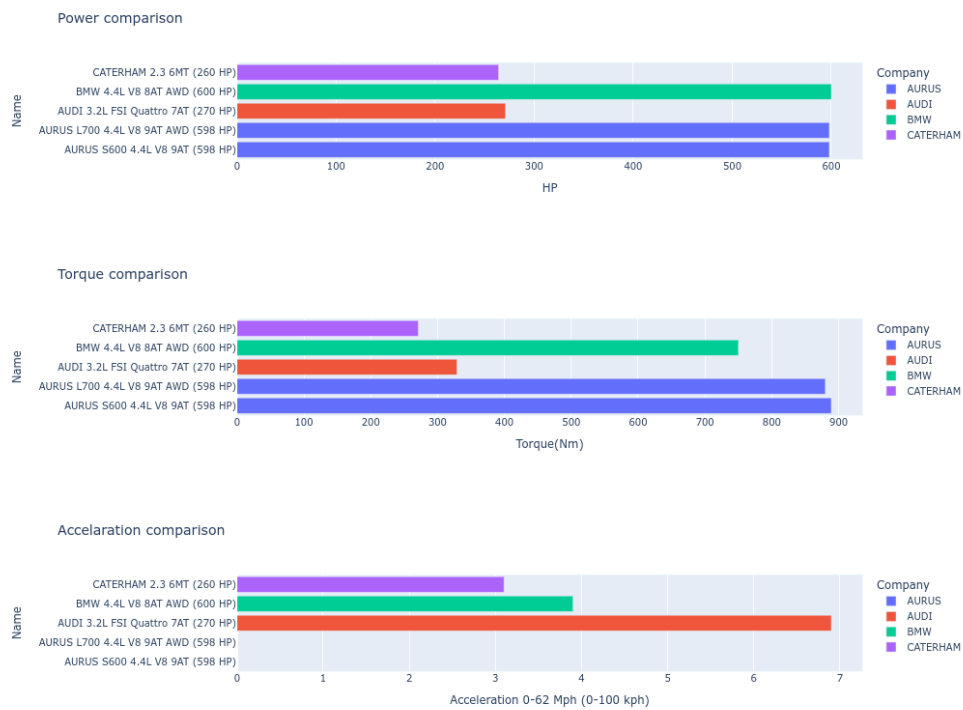


Fig. 3: Comparison of Specific Cars

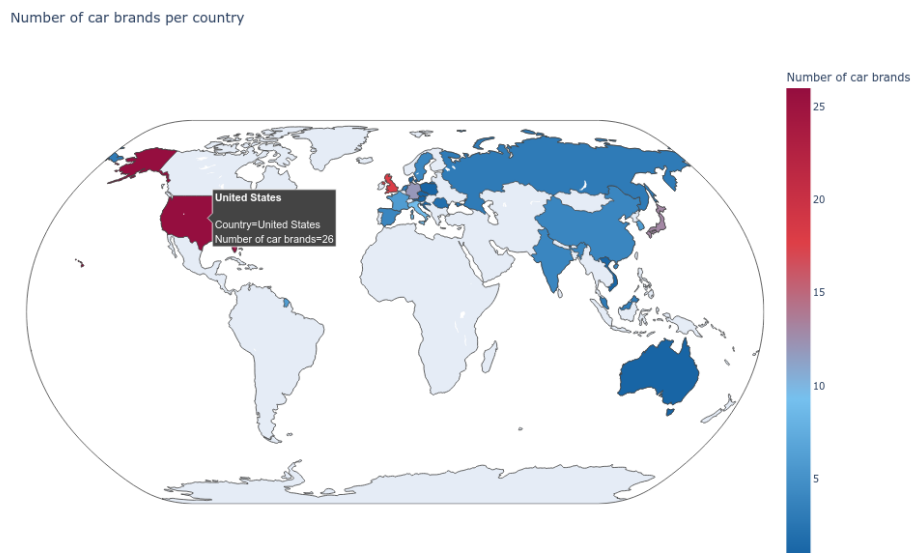


Fig. 4: Enter Caption

In this plot the aim is to be able to visualize the combined miles per gallon consumption translating it into litres per 100 kilometres, with the segment that a car belongs to or the model since there are different models and segments inside one manufacturer.

Segment Comparison: This is the default view of this graphic. Here it is only going to be presented the average combined consumption per segment.

Model Comparison: The user chooses a segment and in the plot various models appear (from the segment selected) from different brands.

3.2 Colour Palette

Having a set colour palette since the beginning of our project has helped a lot in terms of design and colours for our graphics. There was a need to had another colour since we wanted to display even more information about the cars and companies chosen. By augmenting the number of colours even by one, we can display more information in our graphics.

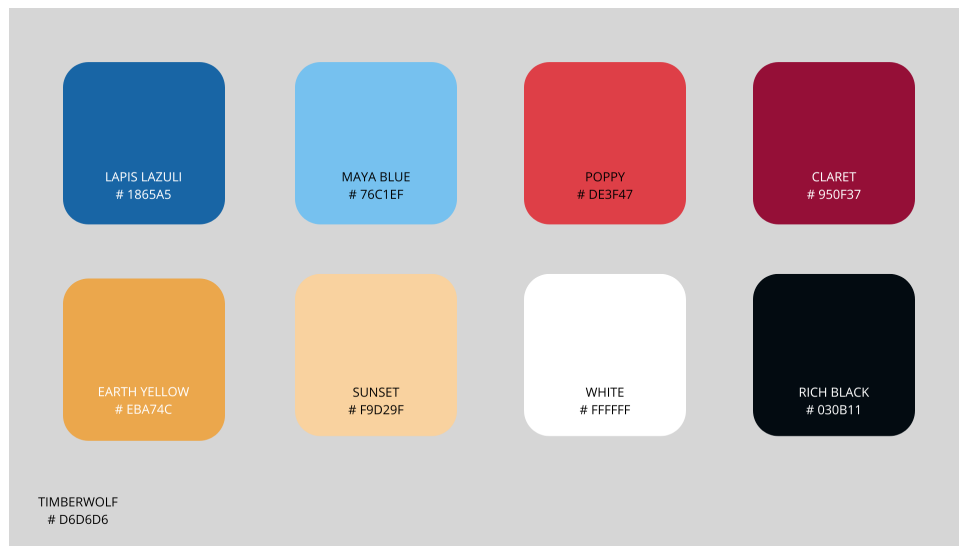


Figure 1 - Chosen Palette for this Project

4 Conclusion

In this intermediate delivery we have developed quite a few graphics, but they still need a bit of work designwise. With this, we aim to continue developing this Dashboard and help people that don't understand a lot of cars to be able to navigate our Dashboard and gain a little knowledge.

References

- [1] *Car Specification Dataset*. <https://www.kaggle.com/datasets/usefashrfi/car-specification-dataset>.