FIRN
Analytics • Knowledge • Insight

Case Study
Snowflake, dbt & Power BI

The task

In this case study we would like you to build an ELT process, bringing together data sources to enable further analysis. The result of this process will be to enable further analysis to understand whether there are enough charging stations for electric cars registered in New Zealand.

Create an analytics warehouse, creating appropriate tables including a table with metrics for:

- Registered Electric cars in New Zealand
- Charging Stations around New Zealand
- Distance between Stations (hint - haversine function)
- etc.

Integrate the Motor Vehicle Register and EV Roam Charging Stations data from data.govt.nz to investigate how the number of electric cars vs charging stations has changed over the last few years. Has supply kept up with demand. Are the charging stations logically placed across New Zealand?

The outcome of this case study should be an ELT process in dbt and Snowflake, and if you have time visualisations in Power BI.

It's up to you on how you would like to present your results, but something along the lines of tables created and populated in Snowflake, your dbt project, and a dashboard to highlight a story, if you can find one.

What we are looking for

We will be looking for the following minimum outputs;

- Show how you handle a slightly vague request like this. Feel free to ask me any questions but in general we are the customer, so we don't know what we really want and need to be guided.
- Gain a working knowledge and/or show your skills in Snowflake, dbt and Power BI.

- Show you understand how to create a database, schemas and tables or views in Snowflake in a clear and logical way.
- Show you understand what an ELT process is, what are the important components, and how to create one in a clear and logical way.
- Present to me what is built, who you saw as the end user, the approach you took, how you built the database and ELT process, and possibly dashboards, and the thought processes you went through in delivering the outcome.
- When you present, imagine you are talking to us as the client, explain the benefits of using the transformations you've built
- Are there enough charging stations to supply the number of registered electric vehicles?

The Data

The Vehicle Register data can be found here: https://drive.google.com/file/d/1zZ3rGppZs36Y_Mcxu343qQ73tjwiqCQF/view?usp=sharing

The Charging Station data can be found here: https://drive.google.com/file/d/1zZmEFN26x9odtheT1VVvqV6oSg0P8N0P/view?usp=sharing

Original source of data: https://catalogue.data.govt.nz/dataset

Software

You can download full trial versions of the software below:

- Snowflake: 30 day trial here
- dbt: here
- Power BI - here

You can also access training material in the links below:

- Snowflake: Zero to Snowflake; Snowflake Training Resources
- dbt: dbt Cloud Fundamentals
- Power BI: Power BI Learning Paths

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Good luck!

We hope you enjoy using some potentially new tools, and the opportunity to showcase your abilities.

Any questions give me a shout - sarah@firn.nz

Your recruiter will be in touch with a time to present.