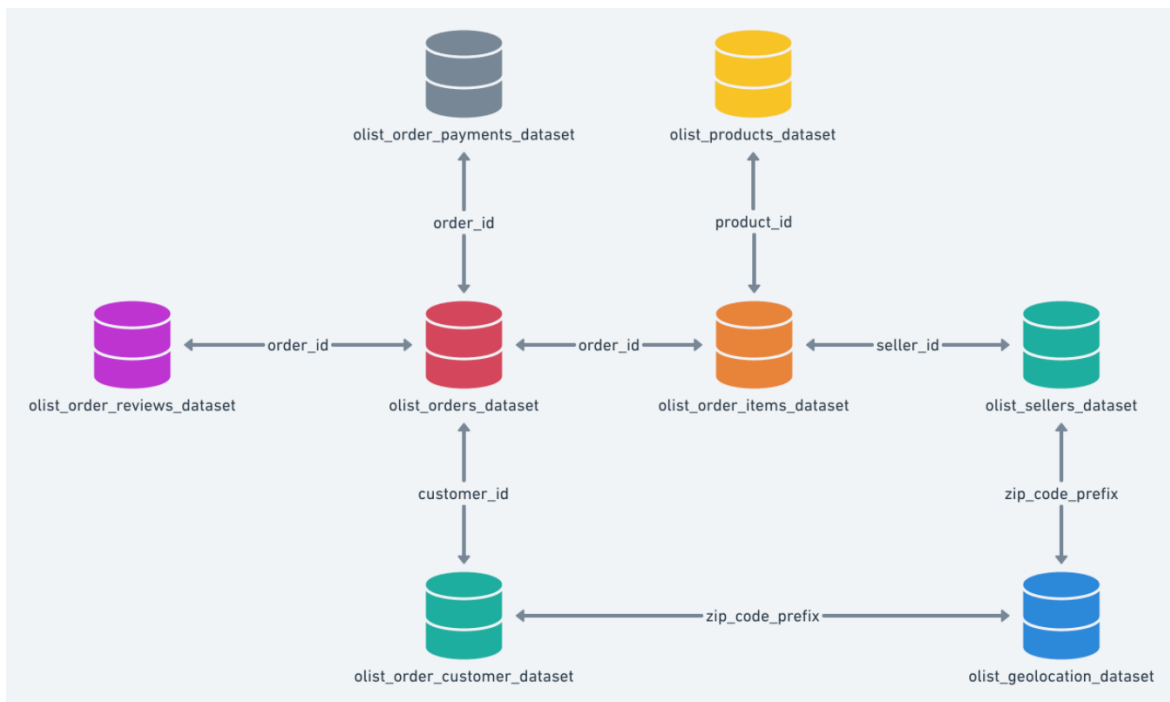


At VALOREO we are really interested in knowing how our products and brands will perform in the market. This lets us know how much inventory to keep around! Following are CSV files which have data about orders from the Brazilian market:

<https://drive.google.com/file/d/12-wtV2yVzbECr3lAKdKi8y8qgXYraire/view?usp=sharing>

In the zip archive you'll find several CSV files which have the following structure:



Your tasks will be:

- 1) find the top 20 best seller products and generate a model which forecasts the sales these will have in the next year on a week-by-week basis. The model should also be flexible to changing the product price and adjusting the forecast based on this price.
- 2) Considering that the cost of each sold product is 70% of the actual price determine what products compose the 80% of the profits for the last 2 years, with this expose the most and least profitable categories for Valoreo. If you had a certain budget (\$100,000 USD) for marketing push, how do you distribute it among the categories and why?
- 3) Can you propose a way to group sellers to profile them? This groups can be referenced or preferred for certain kind of customer?

We expect to receive a zip file with your solution. It is preferred to be a Python script or notebook, please be sure to add all your code's dependencies on a requirements.txt file. Also please add a README with any special instructions on how to run the code.

Please be sure to explain your process and back up the points you consider important with graphs.

Evaluation Criteria:

1. Clean and Scalable Code
2. Analysis of Data
3. Cleaning of Data (if necessary)
4. Over and under fitting
5. Test and Validation methods
6. Output accuracy of the model
7. Well commented code which explains trade-offs and reasoning behind it.

Note that while use of snippets of code from the internet is encouraged, any plagiarism from models on the web will disqualify you immediately from this process.

From the moment you receive this document it is expected to receive your answer at most 48 hours later.

Thanks again for applying to VALOREO. We wish you the best of success.