



Analytics Engineer - Technical Test

Introduction

The task requires you to create a data model using anonymised data for us to understand your technical skills but also your approach to modelling and documentation. The purpose is to:



Demonstrate your technical SQL & modelling skills



Give insight into how you communicate and document solutions



Show how you approach ambiguous real-world problems

We're not expecting you to spend days creating a perfect solution but rather show us how you work in reality.

Project Outline

The marketing team at ClearScore require a complete and accurate model of all of our user accounts in order to plan and forecast marketing campaigns and who they will target. At minimum the model should contain the users status (ie. is the account active or closed) and if they are **currently** opted in to receive marketing. Please **do not** include internal test users (internal_user = TRUE).

You have 5 tables available to utilise - you may not require all of them.

- **user_account** table containing 1 record per user. A record is added when a user creates a new account shown by the 'created_date'
- **user_account_closures** table containing the timestamp an account was closed. Only users with closed accounts will have records in this table. It is

possible for users to have more than 1 record in this table ie. if the account closes, reopens and then closes again.

- **user_account_reactivations** table containing the timestamp an account was reactivated. Only users with reopened accounts will have records in this table. It is possible for users to have more than 1 record in this table ie. a user can be reactivated multiple times.
- **user_marketing_preferences** table containing a record for when a users marketing opt-in preferences change. Note that one user_id may have multiple records in this table if their marketing preferences have updated.

Note: For some of our earliest users, their opt in to receive marketing was not captured using our current process. If we do not know the marketing preferences for a user and they signed up to ClearScore prior to 2019, we assume that they have opted out. For users created 2020-01-01 onward, they will have at least 1 record in this table.

- **user_account_attributes** attributes of the account holder captured during the signup process

*Samples of the tables can be found in the provided excel sheet.

Your task:

- Write the SQL query (any dialect but **please specify** which) to generate an output model/dataset which fulfils these requirements (We don't expect you to actually run this code so don't worry about this being perfect - we care more about how you interpret the data and what the output will be)
- Create the supporting documentation to allow the marketing team and data analysts to understand and use your model.
- What further datasets may be useful to enrich this data and how might the marketing team use this?

The task is graded on

- Showing you understand the brief and how data can be used in a business context
- Technical proficiency in SQL and a knowledge of best practice

- Clarity in the presentation of your solution

Throughout the task, if anything is unclear you are free to make common sense assumptions. **Please make any assumptions explicit as we value your thought process as well as the result.**

This task shouldn't take you more than a few hours to complete and document.

Submission

Please submit your solutions and any supporting documentation via the submission link.

Any documentation should be easy to digest for anyone looking to understand the approach and content of your solution.