



Business data analyst tech challenge

The Swissborg app allows users to easily buy and trade cryptos. They can make fiat or crypto deposits and withdrawals, trade between any two currencies directly, earn additional yield on some tokens, or purchase complex investment products such as automatically rebalanced thematic bundles.

A. Case study

Recently we launched a new product, the [golden thematic](#). In this tech challenge we ask you to step into the role of a data analyst collaborating with the product manager responsible for the release.

We will provide the following two datasets that you can use

user_list table [download here](#):

Containing one row per user with information around onboarding. The table contains records only on users who started the onboarding during 2023 H1.

- User_id: unique identifier of user
- country_code: country of residence of the user, given during registration
- phone_registered_at: the time the user first registered their phone number in the SwissBorg app, this is the first step of the onboarding process.
- verified_at: timestamp when user's identity verification was first approved. After this point they can access all features within the app (deposits, trading, purchasing investment products)
- first_deposit_timestamp: the time the user first transferred any funds to the SwissBorg app.
- Total_claimed_wealth_usd: categorical, Self-declared total wealth of the user
- Current age of the user

transaction_summary table [download here](#):

Daily aggregates of deposits, withdrawals, spot trade volumes (simple trading between different currencies available in the app), and purchase or selling of thematic products (web3 or golden thematic). This table also only contains data for users who started the onboarding process during 2023 H1.

Tasks:

- I. Two weeks before the public release of the golden thematic, the responsible product manager reaches out to ask for an assessment on what they can expect in terms of adoption for this new product. Propose a set of metrics that you believe to be relevant, and create a business report that you could present to the product manager and the executive team that evaluates the possible business impact of the new feature. How would you define pessimistic/realistic/optimistic targets for the most relevant proposed metrics?
- II. During your initial discussion the product manager mentions several times that some user segmentation would be great, but they don't have any clear ideas in mind. Take this into account during your exploration and in your presentation.
- III. A week after the launch of the new golden thematic, the product manager comes back to you asking to evaluate the success of the release, as he finds it somewhat underwhelming. He also asks what can be done to increase adoption, and once again mentions a cohort analysis to identify better/worse performing user groups. Can you find any patterns that could help improve overall adoption? If yes, what actions can you propose? What (if any) additional support would you need to deliver on those?

B. SQL challenges:

Considering the above datasets, create sql queries according to the following specifications:

1. Write a query that gives the number of users passing each step of the activation funnel (installation - verification - deposit - purchase of any thematic bundle), broken down per country, with conversion rates between each step as well as the overall conversion rate from the start of the user funnel.
2. Write a query that returns a daily time series of the 14-day rolling net deposit-withdrawal amount per country for 2023 H1.
3. Write a query and create a corresponding chart that you believe the best highlights the similarities or differences of the distribution of investment amounts into the web3 and golden thematic.

Deliveries:

Please provide the scripts/notebook of your analysis, and create a presentation summarizing your findings and recommendations that you could present to stakeholders (product/marketing managers).

For the questions about the SQL queries, please provide the queries and also create a plot where it is asked. Optional tip: Feel free to use the [pandasql](#) library to test the queries (not required, fully up to you if you find it useful.)

Good luck!