Beek Data Challenge - Data Analyst

If you have received this, it is because we are super excited to get to know your technical skills and also give you an idea of some of the awesome developments we do with data at Beek.

Feel free to answer in any way you like (GDoc, word, pdf, etc) and send it to us via email (andres@beek.io). Also do not forget to add attachments of all the code used.

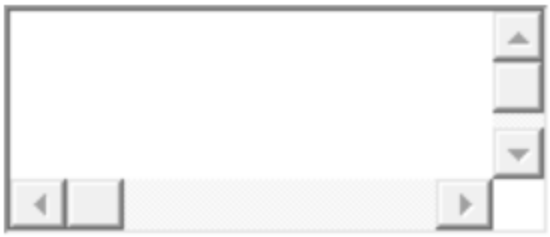
Brain Teasers

Marketing reactivation campaigns

Our marketing team wants to develop a project to reactive churned users using Facebook Ads or in-app notifications:

- What data points would you consider measuring or adding to our database to measure the success of these campaigns?
- What metrics would you suggest to measure the success of these campaigns?
- How would you compare which channel is more effective (facebook ads vs in app notifications)?

Your answer:



UX/UI Experiment

At Beek our UX/UI designers love to experiment by changing colors of our “subscribe” button to see if we have a higher conversion rate to join our subscription.

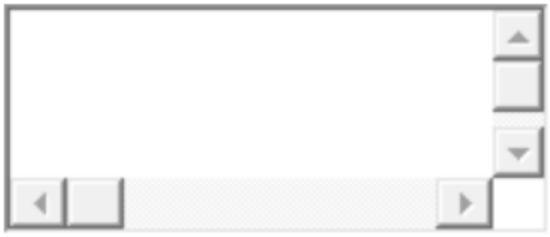
We have decided to set up this problem as a hypothesis test where:

> H0: the proportion of users that convert to subscribers with the change in color of the button is equal to the proportion of users that convert to subscribers without the change in color of the button.
>
> H1: the proportion of users that convert to subscribers with the change in color of the button is higher than the proportion of users that convert to subscribers without the change in color of the button.

After executing the experiment we obtained a p-value of 0.032 with a significance level of 0.01 for the difference of proportions and with a confidence interval of 99% with the form (-0.05, 0.05).

From the results above, what would be your conclusion and recommendation for our UX/UI team about the experiment?

Your answer:



Database exploration and analysis

We have the current dummy database (not actual values) that has a very similar schema to our production database.

Database credentials:

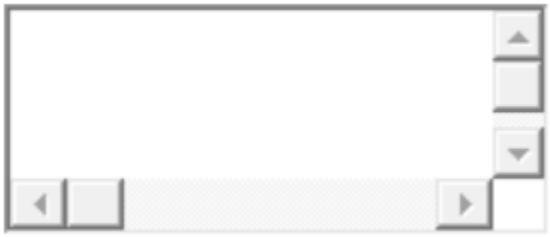
- host: 35.227.110.100
- database_name: postgres
- user: postgres

- password: n$EYUJRrmZ9jz2>7o
- port: 5432

Connect to the database using your favorite SQL IDE and answer the following questions (please add each code snippet for the questions answered):

1. What are the top ten users (user_id's) and audiobooks (audiobook_id's) with more audio time listened?
2. Calculate the WAU - weekly unique active users (where an active = a user that plays an audiobook) for the dates provided in the data.
3. Calculate the week over week retention rate of active users for the dates provided in the data? (a retained user is one that listened to an audiobook in week N-1 and also listened again in week N, where N is the week shown in the column)
4. What is the average time listened (in hours) per user for the last 30 days for the data provided?
5. What has been the month over month growth (%) for the number of audiobook plays?
6. What is the distribution per month of users subscribed based on their first audiobook play? (y- axis: count of subscribed users, x: first month of audiobook play)
7. What is the favorite book category for the subscribed user with the most listened time?
8. What is the book category that has been showing more popularity? Why and how did you picked it?
9. Given the following user_id: *950858* and based on the data what would be the next audiobook you would recommend? Explain your reasoning!

Your answer:



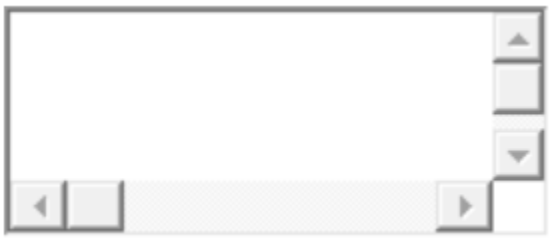
Final Project

Our CEO needs a top level dashboard with the most important KPIs (key performance indicators) or metrics for our company. Create this dashboard!

Key points:

- For every KPI please include documentation of the query used.
- You can use any tool you want but we recommend: Metabase, Google Data Studio, or even Tableau Desktop which gives a 14 day trial.
- Use the database credentials provided above.

Your answer:



Congrats, you are done!! After receiving your responses it will take us 2 days to get back to you and if we are satisfied, we will schedule a follow-up interview.

Review questions