# Zapier Monthly Active Users Analysis

## Thought process

Definitions:

- A user is considered active when he has, at least, one task in the past 28 days;
- A user is considered churn during the 28 days following their last day active, unless they become active again.

1. Find periods where a user is active
    a. Find a day with *sum_tasks_used* greater than zero, for any account, and set that day as the start for the activity period for a user
    b. Set the end of the activity period as 28 days after the start
2. Condense activity time periods
    a. Since a user might perform more tasks within a previous activity period, there'll be overlapping activity periods
    b. This step packs all the dates, ensuring a holistic perspective on activity periods per user
3. Find periods where a user can become churn
    a. Between activity periods, there can be gaps where a user can be churn (due to no activity in the previous 28 days)
4. Find periods where a user is churn
    a. For each period of active (condensed as per step 2) find the possible churn period by creating periods starting one day after the last activity day and ending 29 after
    b. Match this last period to the possible periods a user can be churn (as per step 3)
5. Add missing dates to the dataset
    a. In the original data there are, for some users, missing days in the period that goes from 2017-01-01 to 2017-06-01, cross joining the data with a table that has all the possible days for that period will ensure no days are missing for the analysis
    b. Using the periods of churn and activity it's possible to identify the status of a user each day

# Views with key data for analysis

## monthly_new_users

Grouped monthly data for:

- Number of churn users
- Monthly active users
- Users at the start of the month (number of active users on the first day of the month)

## monthly_new_users

Grouped monthly data for:

- New users for that month (their first activity is within that month)

## user_days

Grouped data per user, regarding:

- Number of days in churn state
- Number of active days
- Total tasks performed
- Total number of accounts

## avg_churn_dur

Grouped data per user, regarding:

- Average length of churn periods
- Number of churn periods

*Note: All data is between 2017-01-01 to 2017-06-01*