

## Relax, Inc. Insights

There are a lot of insights to be derived from the data provided from Relax Inc. Initially, I think it is important to note that data provided included 12,000 users and over 200k logins. Of the 200k logins, there were only 8,823 unique user\_id's making these logins, leaving approximately 3,200 of the 12k users provided that have no activity. Trying to understand how many of these 8,823 users were considered "adopted" was a bit of a challenge. The solution I came up with was in the way of a nested for loop. In short, this loop went through each user id and would check if it was one of the 8,823 that showed activity. If it was, I would filter the activity by that user and check to see there were at least 3 separate days of activity within a 7 day period. If so, I included a column that would update to 1 if they were considered adopted, and 0 if not. Below is the code block that allowed me to achieve this information:

```
for i in range(1,12001):
    cur_df = df_activity[df_activity['user_id'] == i]
    if cur_df.shape[0] == 0:
        pass
    elif cur_df.shape[0] > 0:
        for x in range(cur_df.shape[0]):
            end_date = cur_df['date'].iloc[x] + pd.Timedelta(days=7)
            cur_date = cur_df['date'].iloc[x]
            date_range_df = cur_df[(cur_df['date'] >= cur_date) & (cur_df['date'] <= end_date)]
            if date_range_df['date'].nunique() >= 3:
                df_activity.loc[df_activity['user_id'] == i, 'adopted'] = 1
                break
            else: pass
```

This showed me that the number of adopted users of the 8,823 was actually only 1,656. I merged this information with the actual user information to begin analyzing any patterns within the users that signified a higher likelihood of adoption. One interesting chart I found was in relation to the source of creation for the user. As you can see below, most users that were considered adopted originated from an "ORG\_INVITE". I went on to build out a Random Forest Classifier model to further evaluate what features may have a higher impact on whether or not a user is adopted. The most important feature this came up with was the "last\_session\_creation\_time". This makes sense to me as if a user showed activity more recently, they are likely to have been using the product. Although I would like to spend more time understanding the data and pulling more insights, this is what I was able to glean off an initial pass.

