

This project references the code from the following notebook:

https://github.com/clahonta/SB_other_assignments/blob/master/relax%20inc/relax_challenge/relax%20inc%20final.ipynb

For this project, the first priority was to identify the “adopted” users. With the given criteria (user who has logged into the product 3x in a 7-day period), this was going to require quite a bit of cleaning.

The first step (input 4 in the contained notebook) was to create a separate data set that only contains users with 3+ logins. Next (input 5), columns were created to mark years, months, and days, in order to calculate the 7-day period needed to define adopted users.

I then wrote a `for` loop (input 7) to go through each user’s logins, first calculating the number of logins the user had. If the user had the requisite number of logins, a second loop began to add together the differences in days between logins. Based on these calculations, three logins within a 7-day period would assign a `1` value to users who were deemed “adopted,” and a `0` to those who were not. After rejoining this set of adopted users to the main list of users, a `0` value was given to users who were not looped through (input 10). These users were not analyzed because of their low number of logins, which already declines them as “adopted” users.

I decided a simple random forest model would be a quick and easy way to determine who became adopted users, so I went ahead with a 75/25 train/test split (input 12) and dummied all of the categorical features. The results (input 15) revealed the top five features: `source_PERSONAL_PROJECTS`, `source_GUEST_INVITE`, `org_0`, `opted_in_to_mailing_list`, and `invited_by_178`. In short, these are the first sources to begin investigating effects on users becoming adopted users. For the most part, it appears source has a strong effect on how a user becomes adopted. Personal Projects and Guest Invites seem to be sources of conversion, as does the user opting into the mailing list. These sources indicate either personal connection to other users or a conscious decision to opt-in to the service, both of which logically connect to adoption. Invitations from specific orgs or users are interesting as topics for future research, but may be less actionable without investigation into these users/orgs and their connections.