Data **1**

Objectives **1**

Data

The data provided captures some basic measures of application engagement within the first 14 days of a new account as well as if the account converted to paid within that 14 day period.

- 1 row per account
    - An account corresponds to a law firm.
    - Each account is 14 days old (i.e. data is collected from the first 14 days of the account's life with the application).
- Columns:
    - Number of page views in the 1st hour, day, week, 2 weeks
    - Time to complete goals: first matter, first time entry, first bill
        - Measured in seconds.
        - Null values indicate a goal was not reached.
        - These generally correspond to engagement with specific features within the application during the 14 day period.
    - Time to invite a second user.
        - Measured in seconds.
        - Null values indicate a second user was not invited.
        - Note that not all firms have more than one user.
    - Time to conversion to paid (i.e. an account gives us money for the first time).
        - Measured in seconds.
        - Null values indicate an account did not convert during the 14 day period.
    - Conversion value
        - Measured in USD.
- Training set: 1000 accounts
- Test set: 100 accounts

Objective

We are interested in understanding and increasing conversion rates. i.e. we'd like to develop a hypothesis for the question "how do we increase paid conversion rates in the first 14 days?"

Additional Context

- The business follows a typical SaaS model with marketing, sales, account management, and an active software development team.

- The teams are ready to make improvements to process and the application based on your recommendations, provided they are sufficiently justified.

Tasks

Please attempt to complete the following tasks:

- Describe the data.
- Find interesting relationships between the variables, especially between conversion and the application engagement in the 14 day period.
    - Validate or otherwise justify the relationships are real/meaningful/significant.
    - Note that accounts can convert to paid *before* they engage with the application. (e.g. an account may have converted to paid before it created a matter.) Please account for this in your analysis and models.
- Develop a model to predict an account's future conversion based on early application engagement.
    - Justify the selected model.
    - Provide some interpretation of the model for laypeople.
- Provide a justified hypothesis/recommendation.
- Stretch objective:
    - Design an experiment (e.g. an A/B test) to validate the hypothesis.
    - Assumptions: 1000 new accounts per month.

Requirements

- These tasks are intentionally broad. Narrow and focus them as you see fit. We would like this to take up to 4 hours of focused effort and for the output to provide a sample of your skills; it is not meant to be exhaustive.
- It is not required that you implement everything; explaining your high level approach without implementing is also appreciated.
- Feel free to note approaches, models, etc. you considered but did not pursue.
- Submit your code
    - if you use git, including the git repo is also appreciated
- Submit results and a writeup motivating your approach.
    - Please include the amount of time you spent completing the challenge.