Overview:

As a data scientist at Classy/GoFundMe, you will have access to donor transaction data from nonprofit customers using our platform. We use this data to gain a better understanding of donor behavior so that we can ultimately create more meaningful/relevant experiences for supporters and enable the success of organizations using our platform.

We would like to see how you approach problems involving donor behavior so that we can understand the unique skills and perspective you would bring to our team. Below we have provided a CSV with simulated transaction data for donors making one-time (i.e. non-recurring) donations to a single organization over five years. Your task is to help us understand customer lifetime value for this organization.

An analyst on your team has pulled this data for you. They've let you know that it's messy and lacks helpful labeling. Specifically, they've mentioned that all zero-dollar transactions are from free events.

From you, we would like to see the following:

1. **Exploratory Analysis:** Conduct an initial investigation using the provided data to reveal patterns or anomalies and test any hypotheses you may have. Your audience for this analysis will be technical, so in addition to any summary stats and graphical representations, please include documented code for each step you've taken.
2. **Donor Classification:** Using the most relevant features you discovered and investigated during your exploratory analysis, describe a viable classification method that could be used to predict a donor's lifetime value. Please describe your process in depth, and discuss anything you tried that did not pan out.
3. **Wishlist:** What information is missing, and how would it change your analysis? List some data sources that would take your work to the next level if you had access to them.

Please be prepared to discuss your work with us live. You should spend no more than 3-4 hours on this exercise. In one week's time, please send all code as a Jupyter notebook or an R Markdown notebook. By submitting your work, you affirm that this is your work. (Looking up documentation is okay.) **Please don't submit or share your submission or this prompt anywhere publicly.**

Transactions Dataset