DS Assignment

Thank you for choosing to continue the hiring process with Jeff.

In this stage of the hiring process, we'll ask you to complete a test assignment. The assignment should take you about 4 hours to complete.

Task Background

Here's a typical interaction with our customers / leads:

1. The lead visits Jeff's website.
2. Jeff shows a list of partners for the lead to select.
3. The lead selects a partner from the list and gets redirected (Redirect) to the partner's website.
4. If the lead is accepted by the partner, Jeff receives revenue (Postback) according to the price agreed with the partner.
5. If the lead is not accepted by the partner, Jeff does not receive any revenue.

Additional notes on the typical customer / lead interaction:

- Leads can repeat this process many times but might also churn after the first try.
- Leads usually select the first partner shown to them.
- Different partners have different acceptance rates and terms for their product.
- Some partners pay for postback A while others pay for postback B (meaning after the lead reaches different stages in the application process for the product). The result of an action (click) is indicated in columns 'converted_to_b', 'converted_to_a'
- Each row is a redirect to a partner that has happened in the past with its features, combined with lead's features at that point in time.
- Has_postback_from_x and similar features describe historical interactions and results for that particular lead.
- Different partners have different prices agreements with Jeff.

Your Task

Your goal is to optimize redirect Partner to either:

- Partners where the lead is most likely to convert
- Partners that will bring Jeff most revenue

Here's a .csv file containing the data for this exercise.

Follow-up questions

1. What kind of additional data would you want to develop your solution? What features would you expect to be predictive and reasonable to gather?
2. What architecture / service would you prefer to use to deploy the solution to production? Consider several alternatives.
3. How would you validate that your solution works as expected in production? How would you monitor its performance and stability?
4. What would be other important considerations to keep in mind when working on this problem?

Submission

The format of your submission is up to you - whether it's a Jupyter notebook, Git repository or something else. The same is true for answering the follow-up questions.

Just make sure we can view your submission without having to request access.

To submit your assignment, link to your submission in a reply to the email that directed you to this document.