**ADS-505 Team Project Form and Business Brief Templates**

Fill out this form and business brief and submit it by the end of Module 3 in Blackboard (2 pages max for each). Reference the file, “Final Project Business Brief Requirements.doc.”

Team Number: 1

Team Leader/Representative: Shailja Somani

Full Names of Team Members:

1. Ebad Akhter

2. Jeremiah Fa’Atiliga

3. Shailja Somani

Title of Your Project: Predicting Credit Card Churn Rate from Consumer Data

Short Description of Your Project and Objectives: The goal of this project is to determine credit card customers most likely to churn (or stop using the card) based on their demographic and credit card usage features in order to proactively reach out to those customers in an attempt to get them to keep their accounts open.

Name of Your Selected Dataset and Programming Language: Credit Card Customers; Python

Description of Your Selected Dataset (source, number of variables, size of the dataset, etc.):

Our dataset was retrieved from [Kaggle](https://www.kaggle.com/datasets/sakshigoyal7/credit-card-customers?resource=download). It has 10,000 observations, with a 16.07% churn rate in the provided dataset. There are 18 features, along with an Attrition\_Flag target variable column and a ClientNum identifier column. The data is able to be downloaded as a 1.51MB CSV file.

Provide your team GitHub link here: <https://github.com/shailja-somani-0/ADS-505-Team-1>

How many times have your team members met so far? 2

List the specific contributions that each team member is providing for the Final Team Project in the table below.

* **NOTE:** ALL students on the team should contribute equally to the Final Team Project.

|  |  |  |
| --- | --- | --- |
| Team Member 1 (Ebad) | Team Member 2 (Jeremiah) | Team Member 3 (Shailja) |
| List of contributions   * Dataset brainstorm * EDA * Model-Building * Add details of his work to slides & paper * Finalize the business-oriented slides & make sure they all flow well | List of contributions   * Dataset brainstorm * EDA * Model-Building * Add details of his work to slides & paper * Finalize the paper & make sure all sections flow well | List of contributions   * Dataset brainstorm * Data pre-processing * Model-Building * Finalize model selection via AUC, hyperparameter tuning, try RFE, & investigate classification threshold (if applicable) * Add details of my work to slides & paper |

Comments/ Roadblocks: N/A

**Team Project Business Brief**

**Purpose:**

The goal of this project is to build a predictive model that uses credit card consumer demographics and credit usage data to identify consumers most likely to close their credit card accounts in order to preventatively reach out to them in the hopes of convincing them to keep their accounts open.

**Background:**

Banks profit from credit card holders in a variety of ways, primarily from interest on balances carried, as well as from annual fees, late payment fees, balance transfer fees, and more. It also takes resources for banks to go through and approve credit card applications and appeals (when done manually). Thus, it’s detrimental to a bank when its consumers close out their credit card accounts with it.

**Current Situation:**

Based on the data available to use (10,000 observations), we see a churn rate of 16.07%. This means the bank takes time to approve and set-up credit card accounts for a fair amount of people (1,607 in just this dataset) only for them to end up closing their accounts. That’s potentially wasted time for the bank personnel, as well as lost future profits for the bank.

**Expected Conclusion:**

The goal of our work is to create a predictive model that could identify consumers most likely to close their credit card accounts. Our work’s result would be to provide monthly lists of customers likely to churn to marketing and bank managers. If such customers are identified, banks could proactively reach out to the customers to incentivize them to keep their card open via a variety of ways, some examples of which are: (a) providing further education about all rewards and perks accessible with their cards, (b) awarding bonus points if customers stay for another year, or (c) offering annual fee waivers. The hope would be to decrease the current churn rate of 16.07% via such outreach.