



Today's Agenda

1 Introduction

2 The brief

3 Data set analysis

4 Models

5 Improvement attempt

6 Learnings

Introduction

A bank designs a focused marketing study, with 18,000 current bank customers. This focused approach allows the bank to know who does and does not respond to the offer, and to use existing demographic data that is already available on each customer.

The task is to build a model that will provide insight into why some bank customers accept credit card offers. There are also other potential areas of opportunities that the bank wants to understand from the data.



Risk Analyst Team :
Léa, Vikas & Danny

Documents provided

The brief

1

Project
Details

2

SQL
Questions

3

Tableau
Classification

Project steps

Trello



Github Repository

Python Cleaning and
Exploration

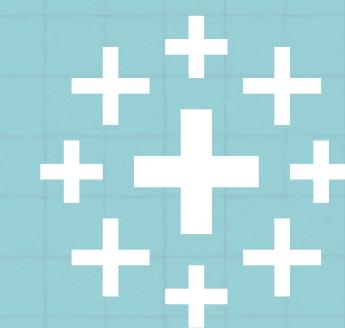
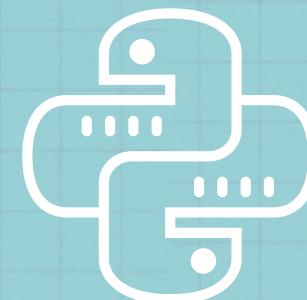
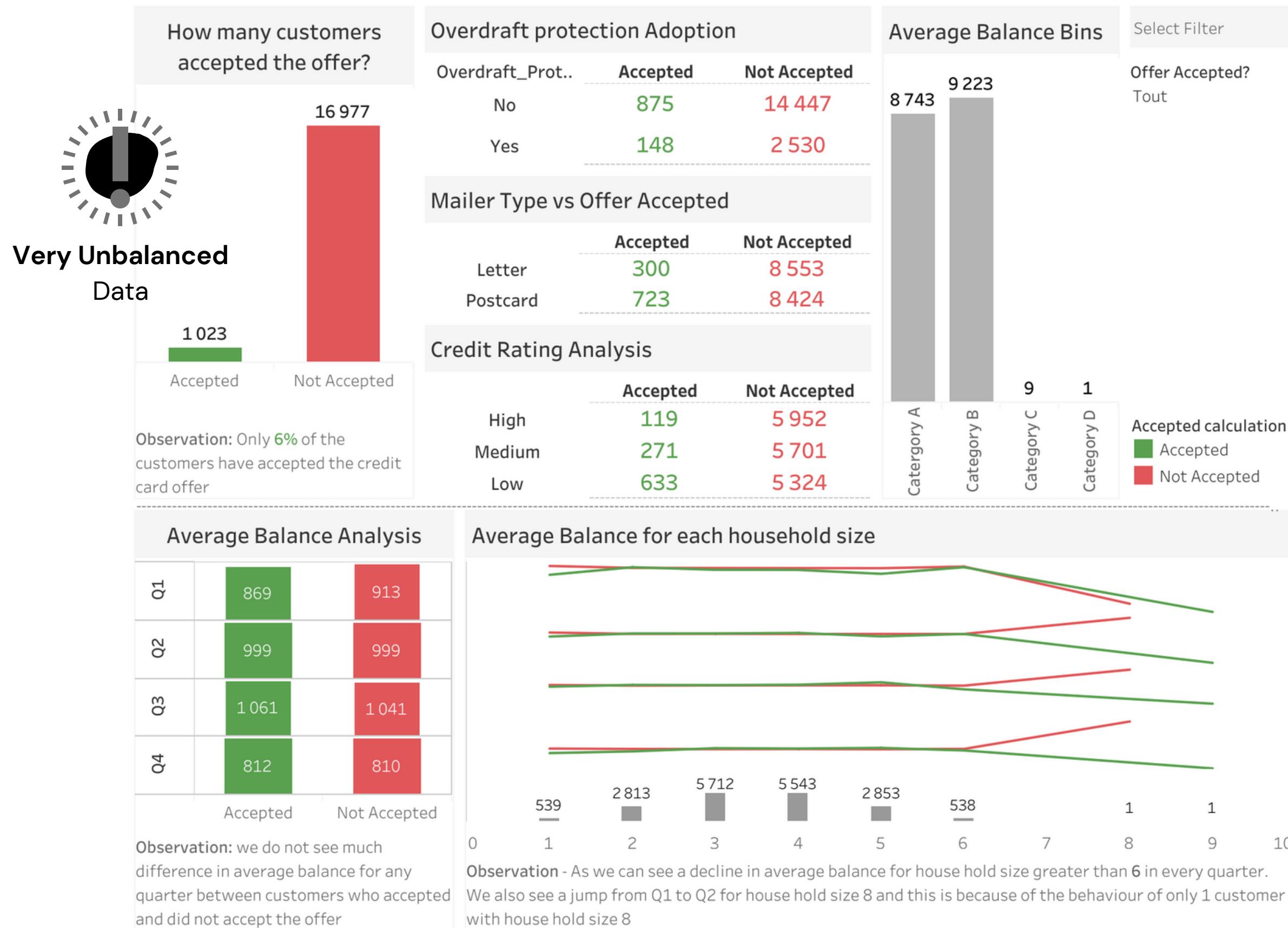


Tableau Exploration
and Dashboard

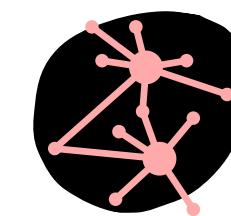
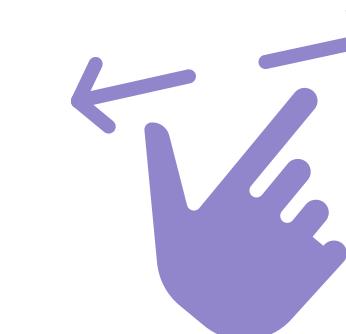
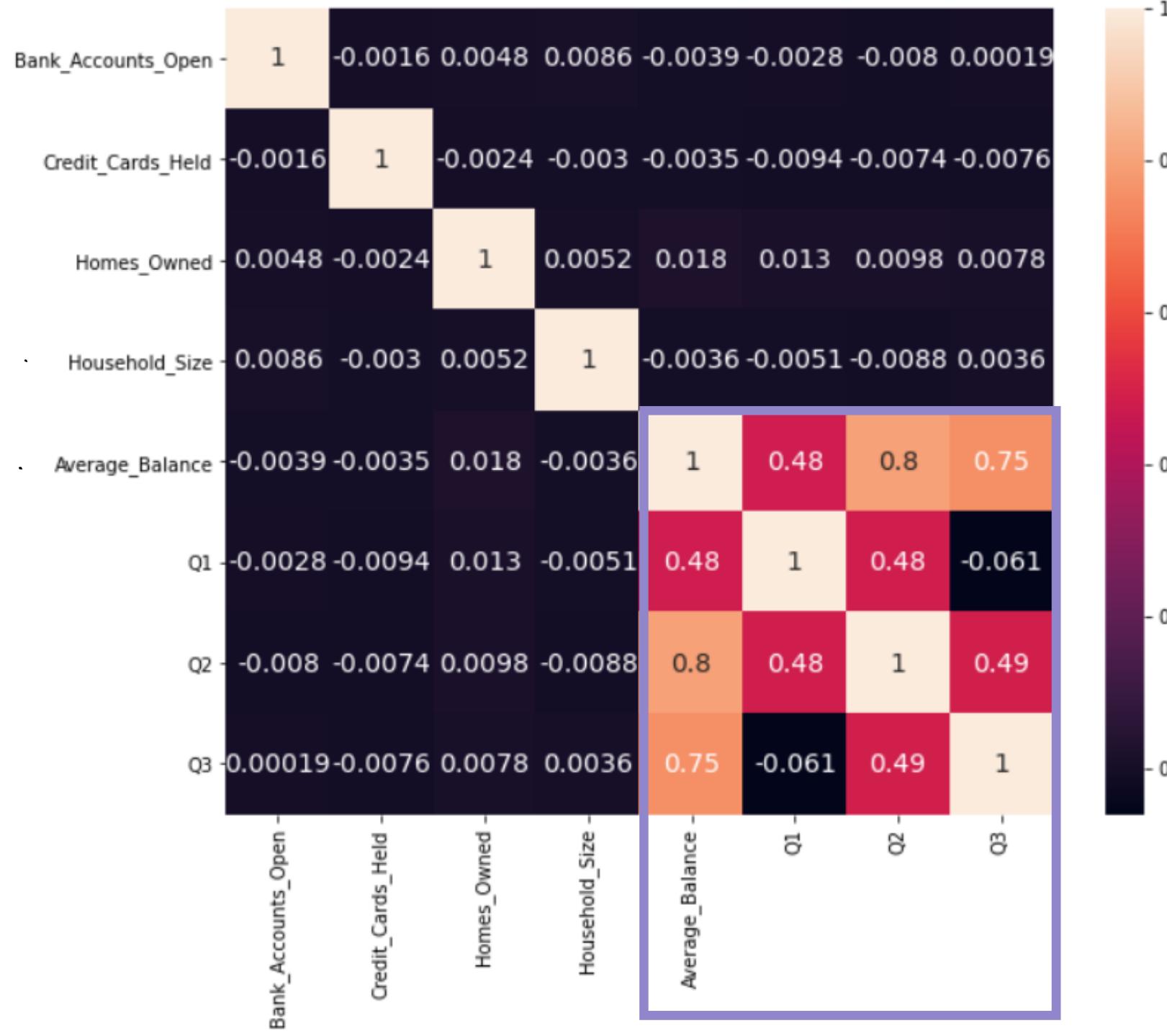


SQL Queries

Dataset Analysis with Tableau

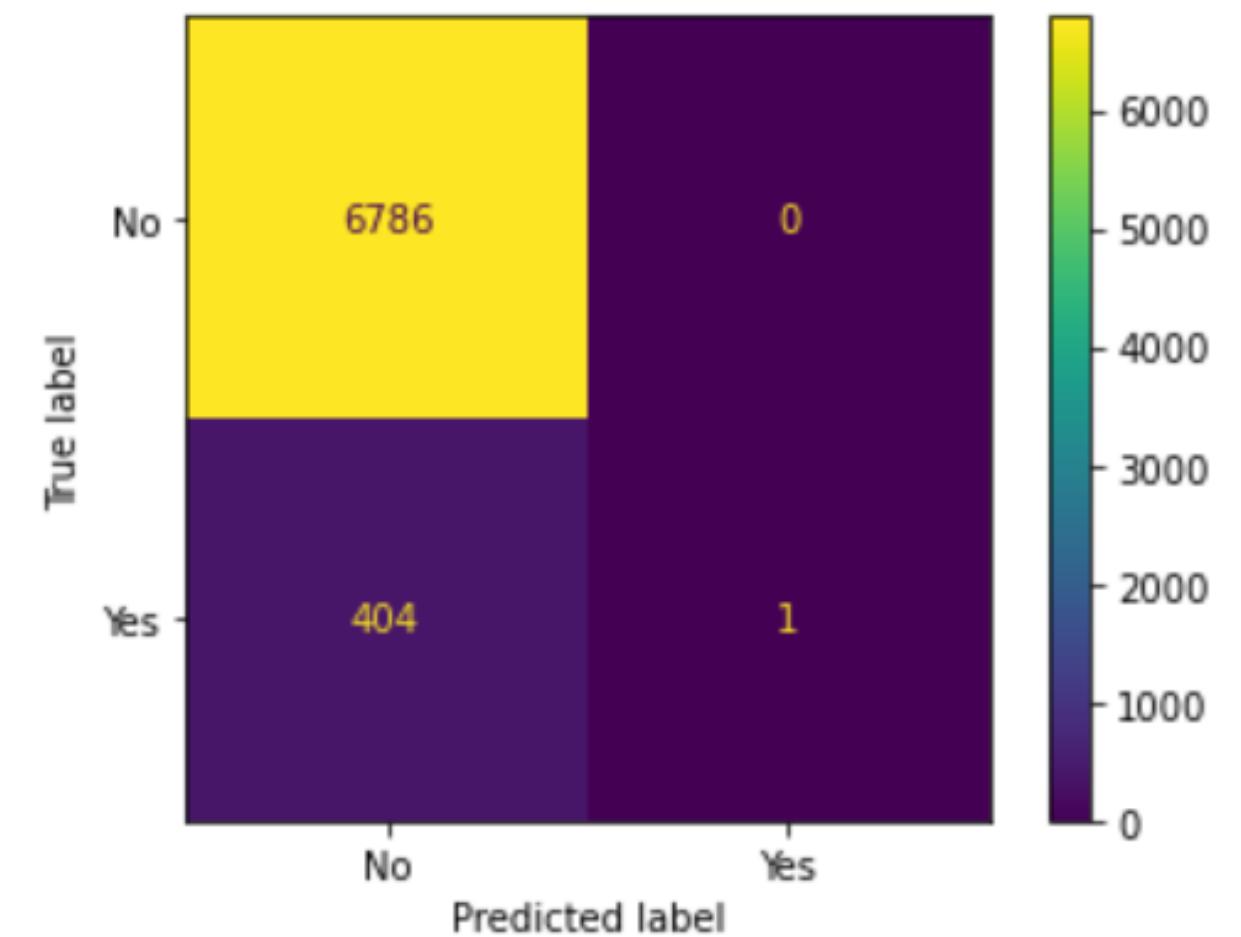
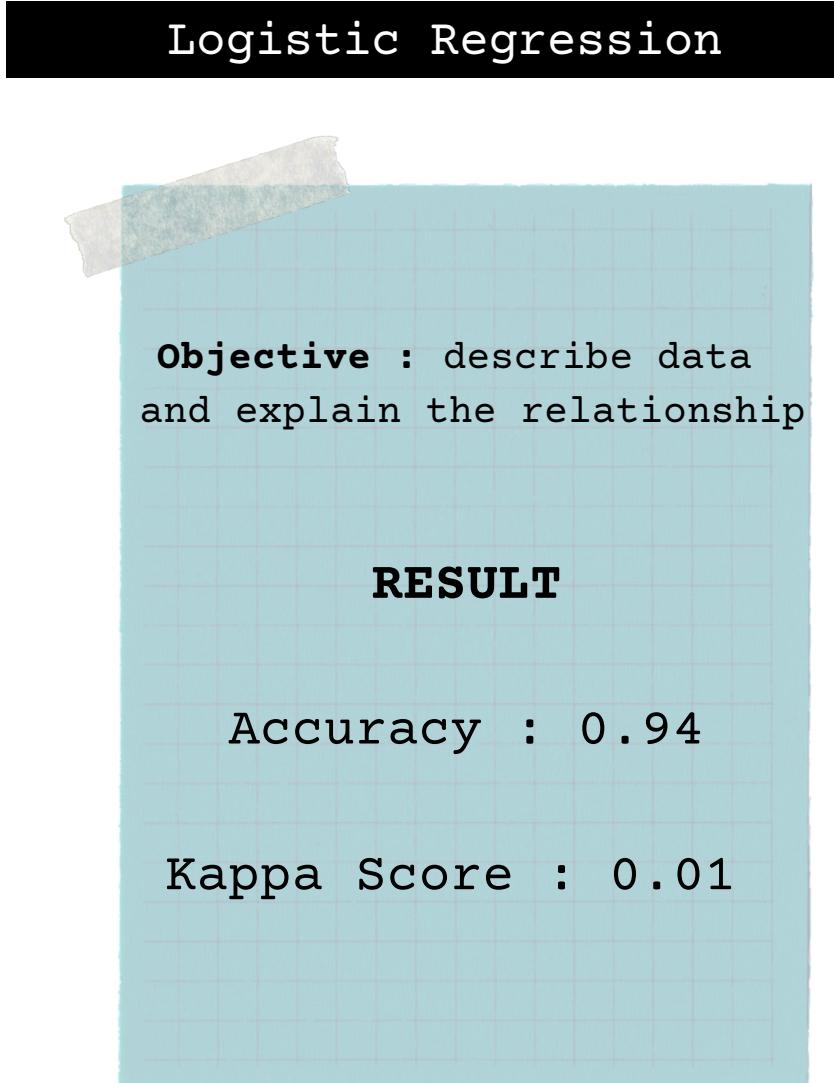


Correlation Analysis with Python



Correlation between Average Balance and Q1, Q2 and Q3.
→ Drop the columns

Output : Models tried



Confusion Matrix

Output : Models tried

Undersampling

Objective : undersample
the majority class

RESULT

Accuracy : 0.67

Kappa Score : 0.34

Oversampling

Objective : oversample
the minority

RESULT

Accuracy : 0.83

Kappa Score : 0.65

Random Forest

Objective : get prediction
from each tree and selects the
best solution by means of voting

RESULT

Accuracy : 0.93

Kappa Score : 0.86

KNN

Objective : calculate the distance
of a data point to all other
training data points

RESULT

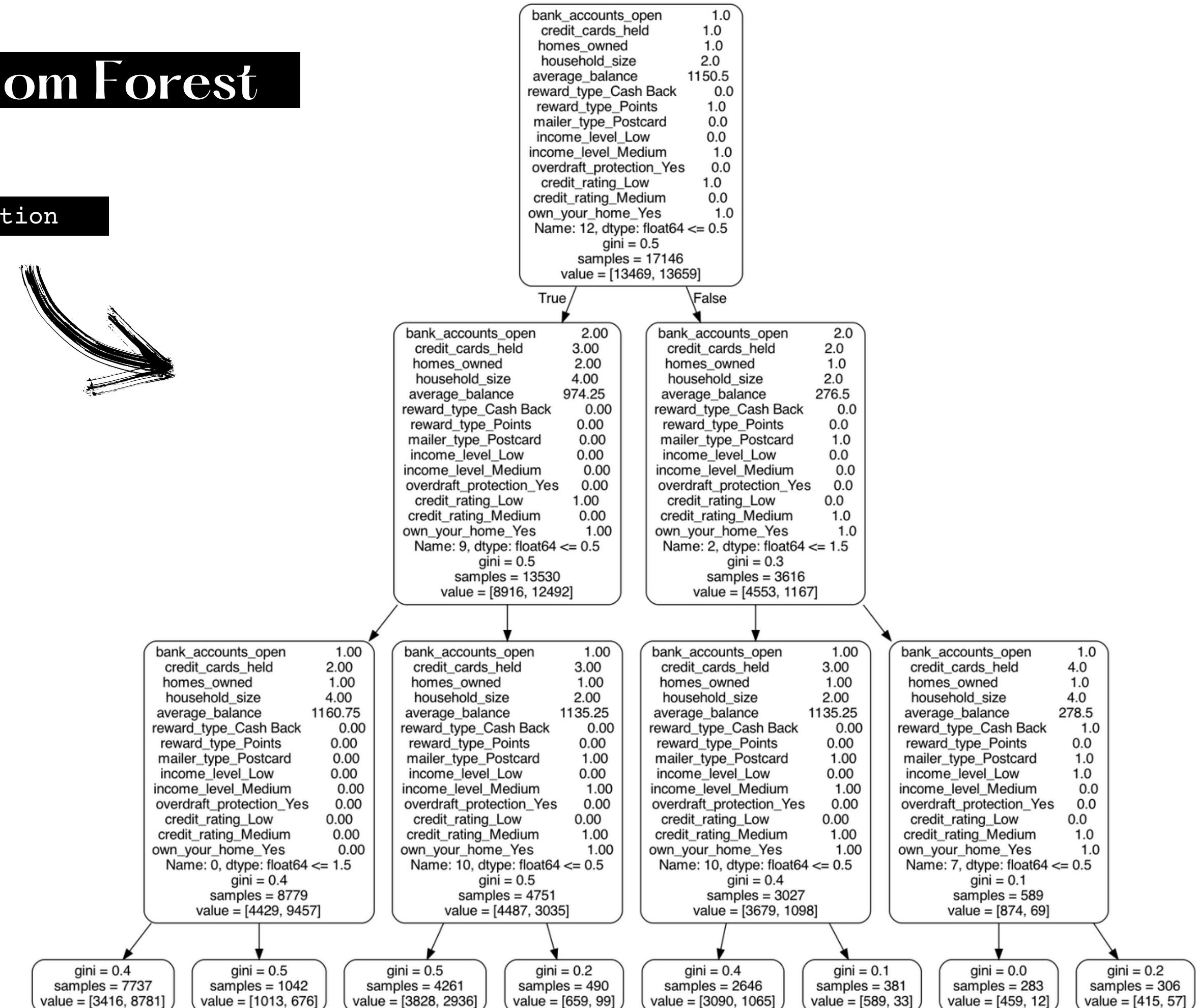
Accuracy : 0.87

Kappa Score : 0.75

Models – Focus on Random Forest

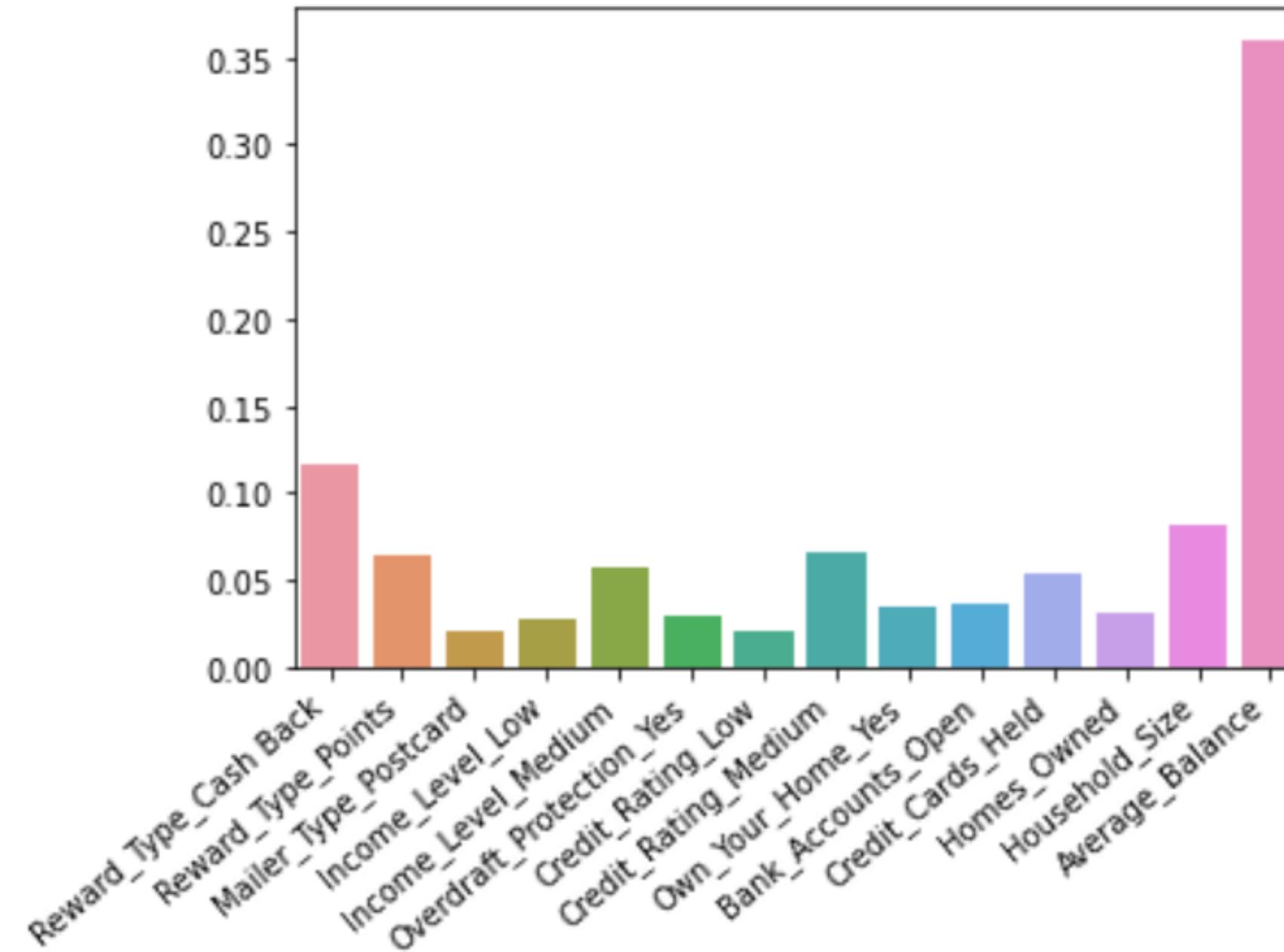
Random Forest tree visualization

From Random Forest
model to the
visualization
of a multitude of
decision trees



Models – Result Exploration

Show how much each feature affects the model



Improvement attempt

1

Remove Outliers

2

Drop more columns

3

Try with bins

4

Transformation

Learnings



Work in groups

Help each other and share our
points of view

In-depth knowledge of the
different models used

Conduct a data analysis project
from exploration until presentation
of results

Thank
you!

The Risk Analyst Team :
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