



CUSTOMER CHURN IN BANKS

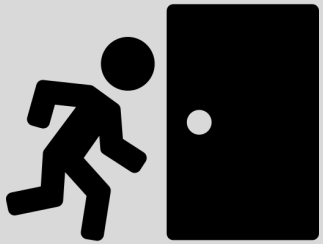
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Emily Wilkins

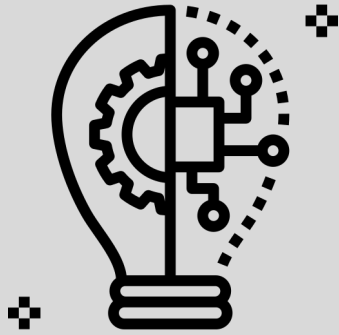
Namita Ramesh

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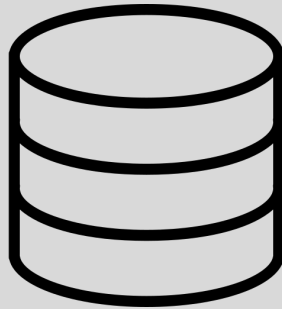
AGENDA



Use Case



Key Factors



Data



Analysis



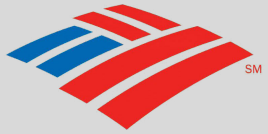
Findings



Recommendations

WHAT'S THE PROBLEM?

Bank of America

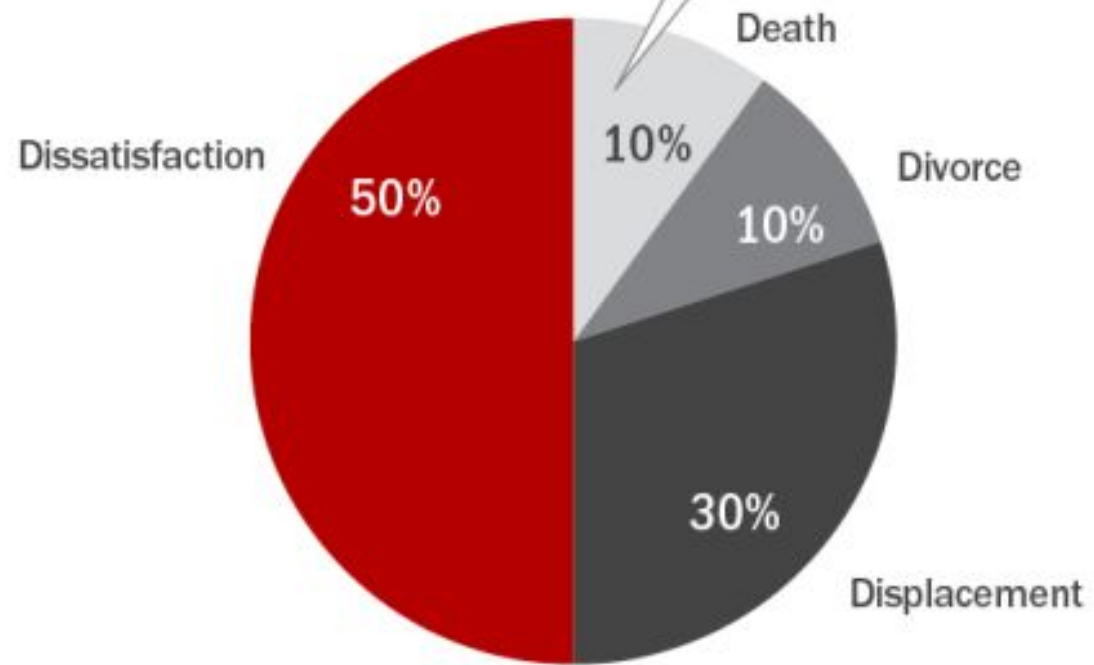


**Goldman
Sachs**

citi **CHASE** 



Annual customer attrition, by cause
(% of annual attrition)



Source: CDC/NCHS National Vital Statistics © November 2015 The Financial Brand

WHY DO
THEY
LEAVE?

WHAT ARE WE LOOKING AT?

A classification problem trying to predict the binary variable Exited

Dropped Variables

- RowNumber
- CustomerId
- Surname

Numerical Variables

- CreditScore
- Age
- Tenure
- Balance
- NumOfProducts
- EstimatedSalary

Categorical Variables

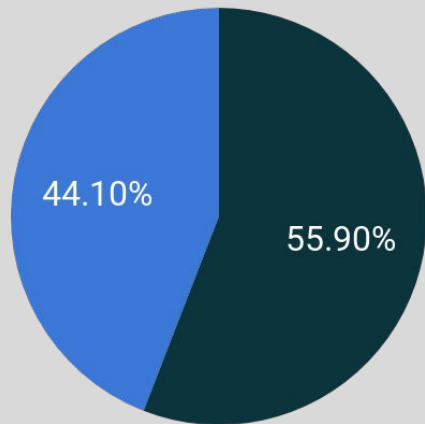
- Geography
- Gender

Binary Variables

- HasCrCard
- IsActiveMember
- Exited

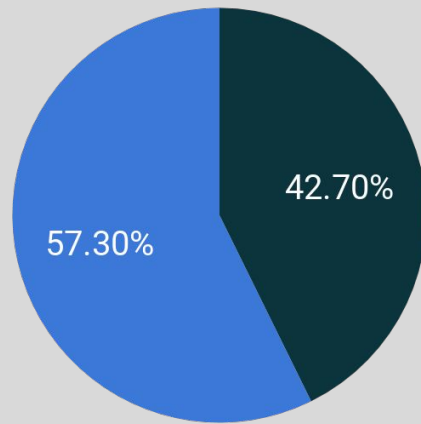
WHAT DID WE FIND?

Women are more likely to churn than men. German customers are the most likely to churn of the three geographies represented in the sample.



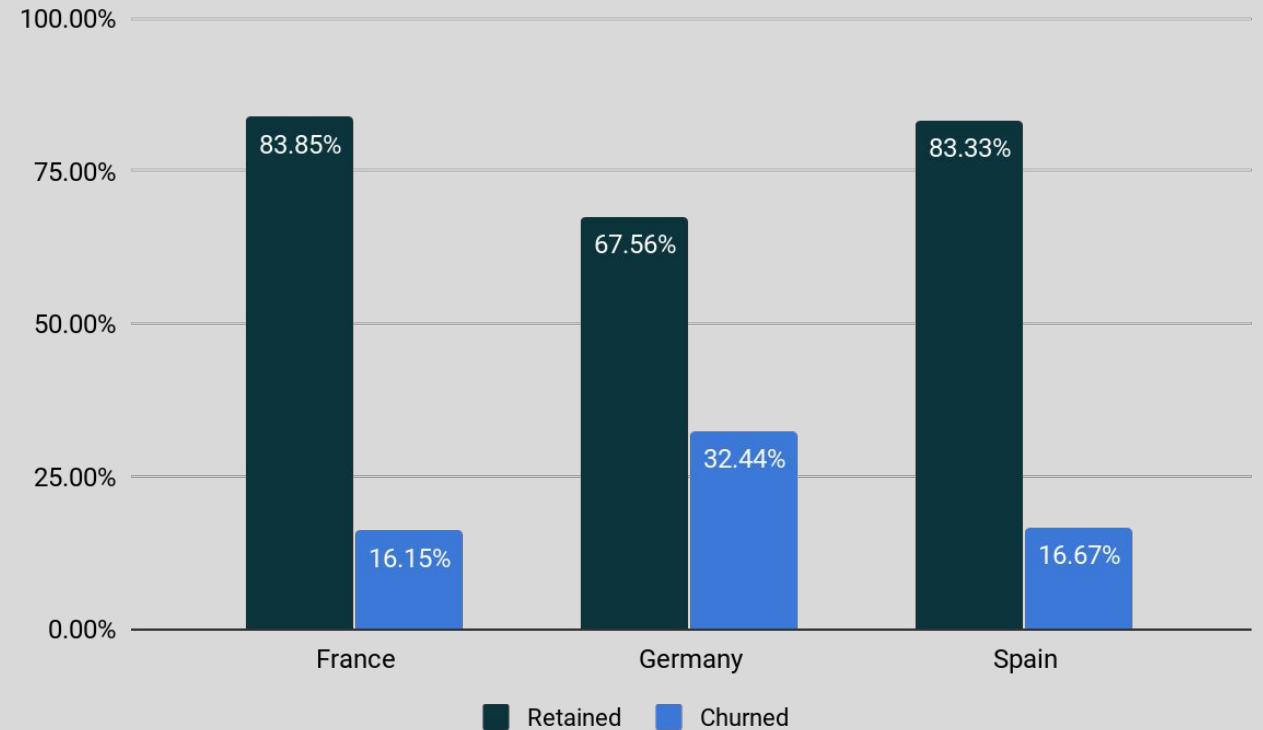
● Female ● Male

**Churned
Customers**



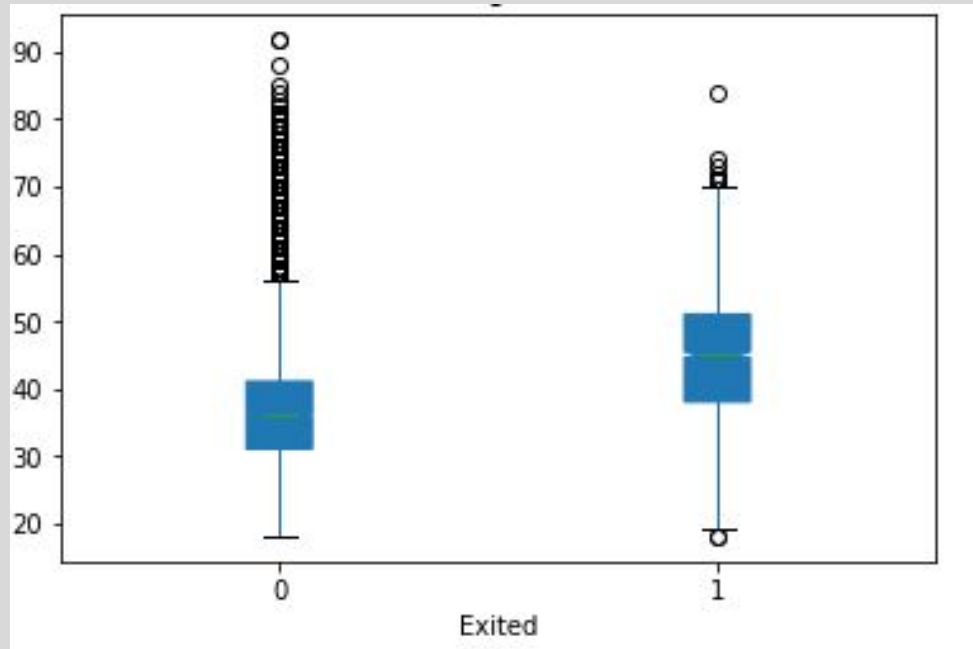
● Female ● Male

**Retained
Customers**

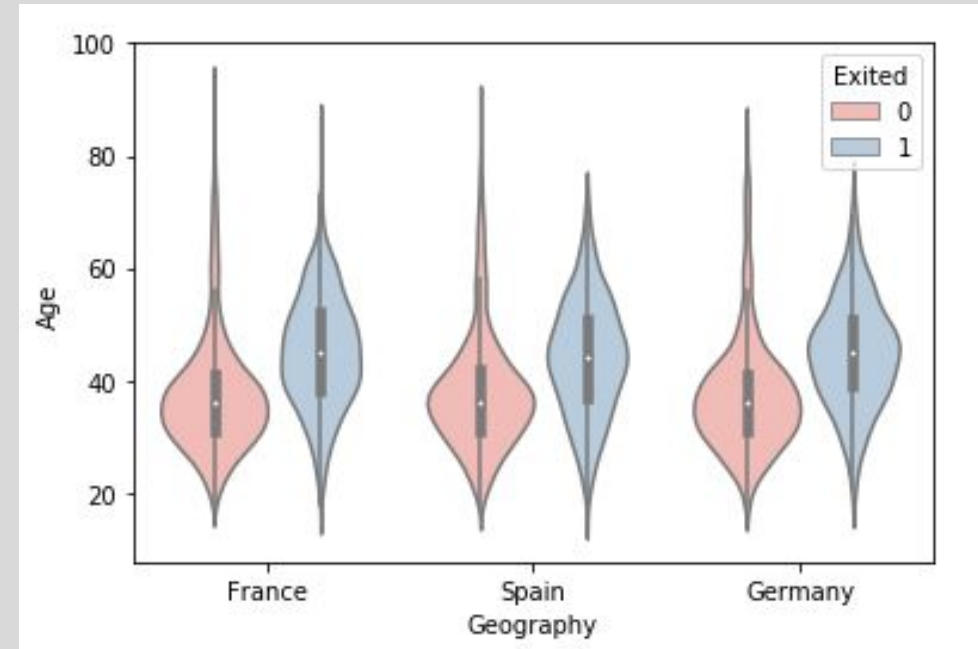


WHAT DID WE FIND?

Customers that churn are older on average. This holds true across all geographies in our sample as well.



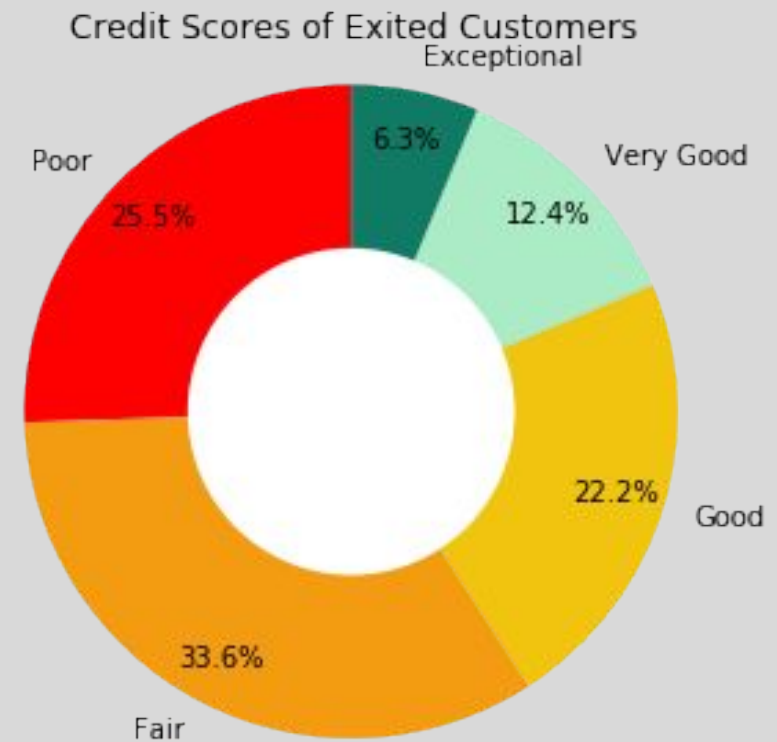
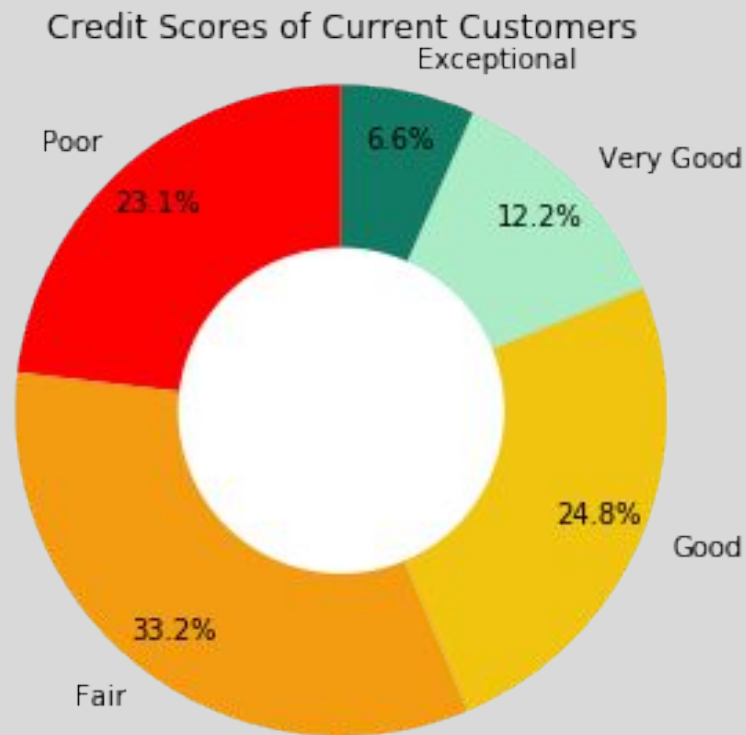
Churn vs Age



Churn vs Age by Geography

WHAT DID WE FIND?

Larger proportion of Exited customers have poor credit scores than current customers.

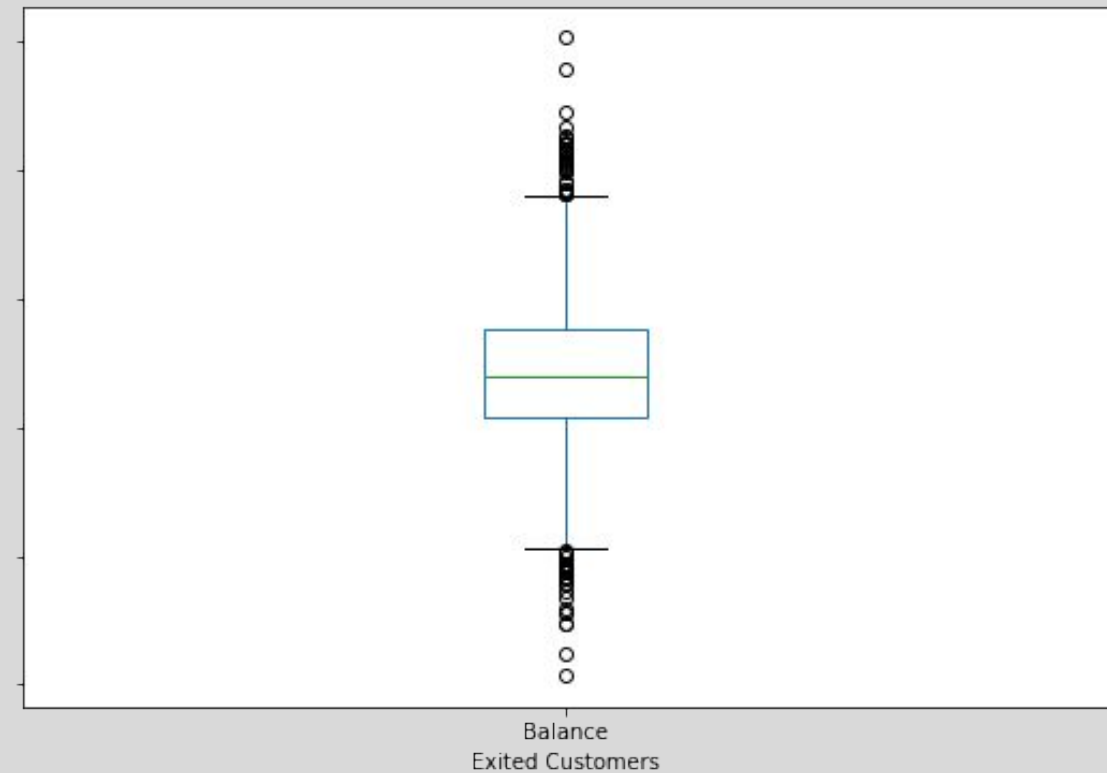
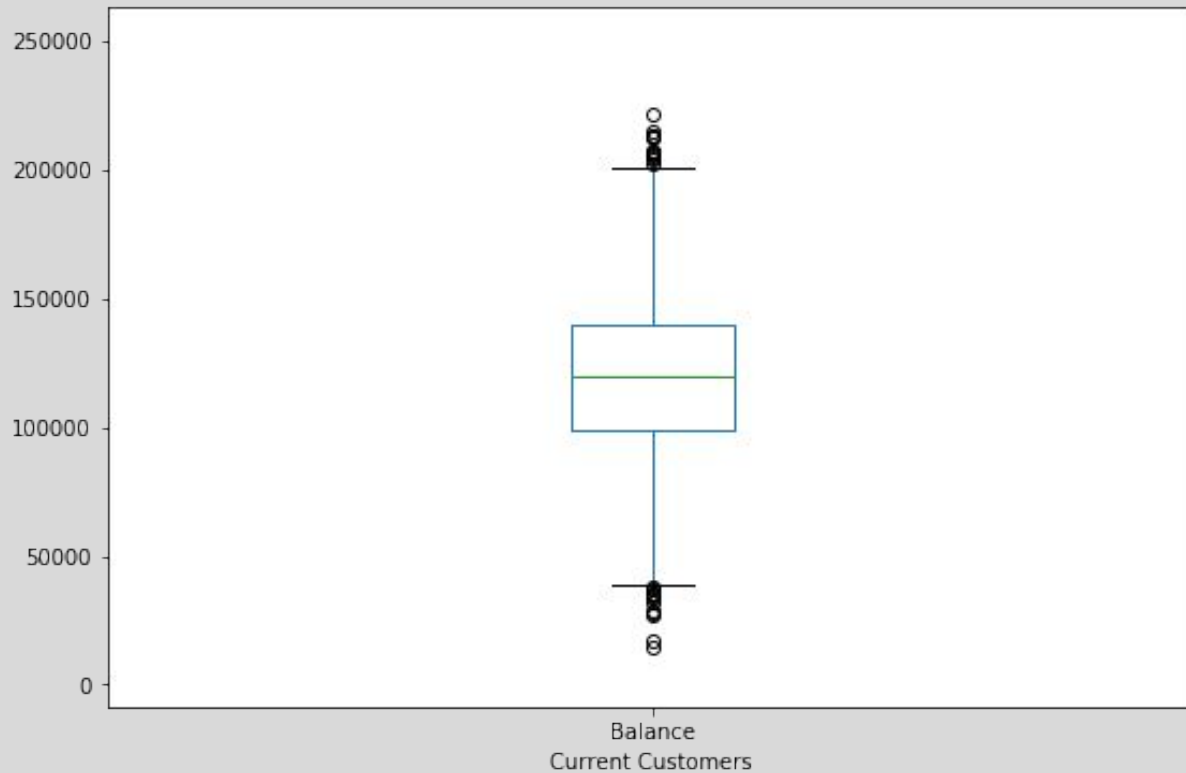


Note: Buckets for credit scores were determined based on the Experian credit score scale.

Credit Buckets : (300-579 : Poor); (580-669 : Fair); (670-739 : Good); (740-799: Very Good) ; (800-850 : Exceptional)

WHAT DID WE FIND?

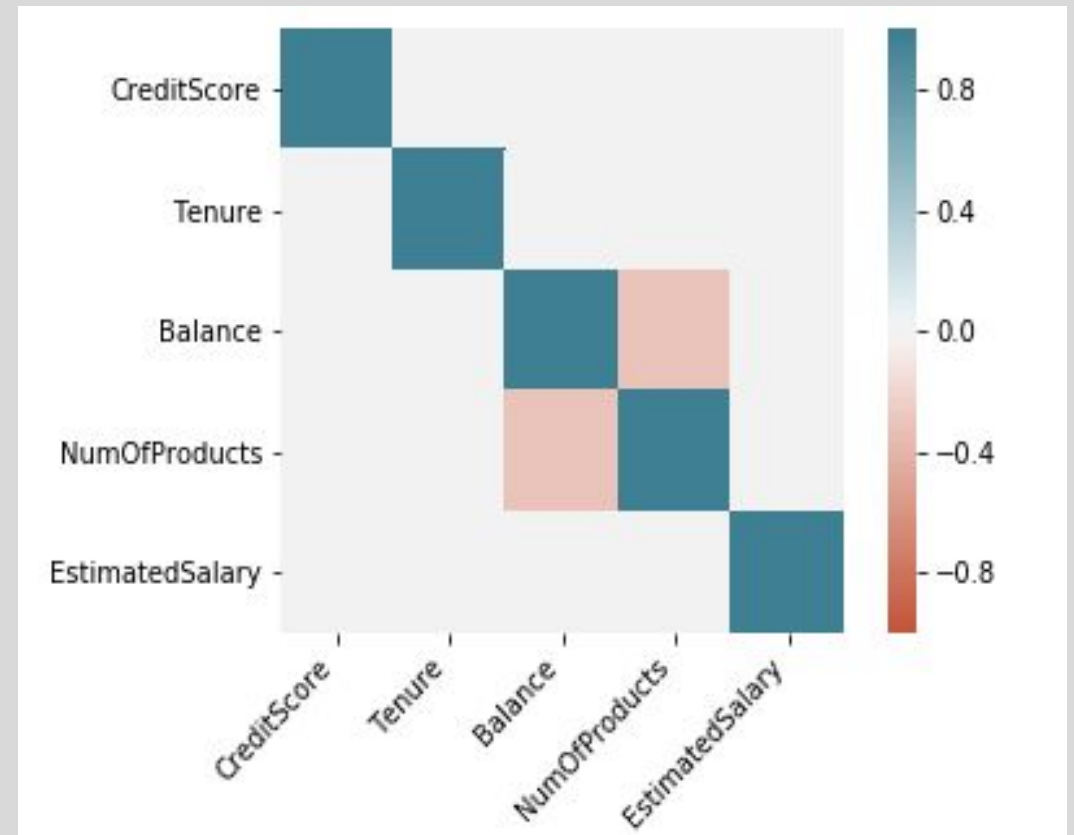
Current customers and exited customers have a similar distribution of account balances, but on average, exited customers have a higher account balances.



DATA PROCESSING

- Missing Value Treatment for Estimated Salary
- One-hot encoding for categorical variables:
 - Geography
 - Gender
- Removed customer specific details like name and IDs
- Correlation Matrix to check multicollinearity problem
- Training and Test Data Split

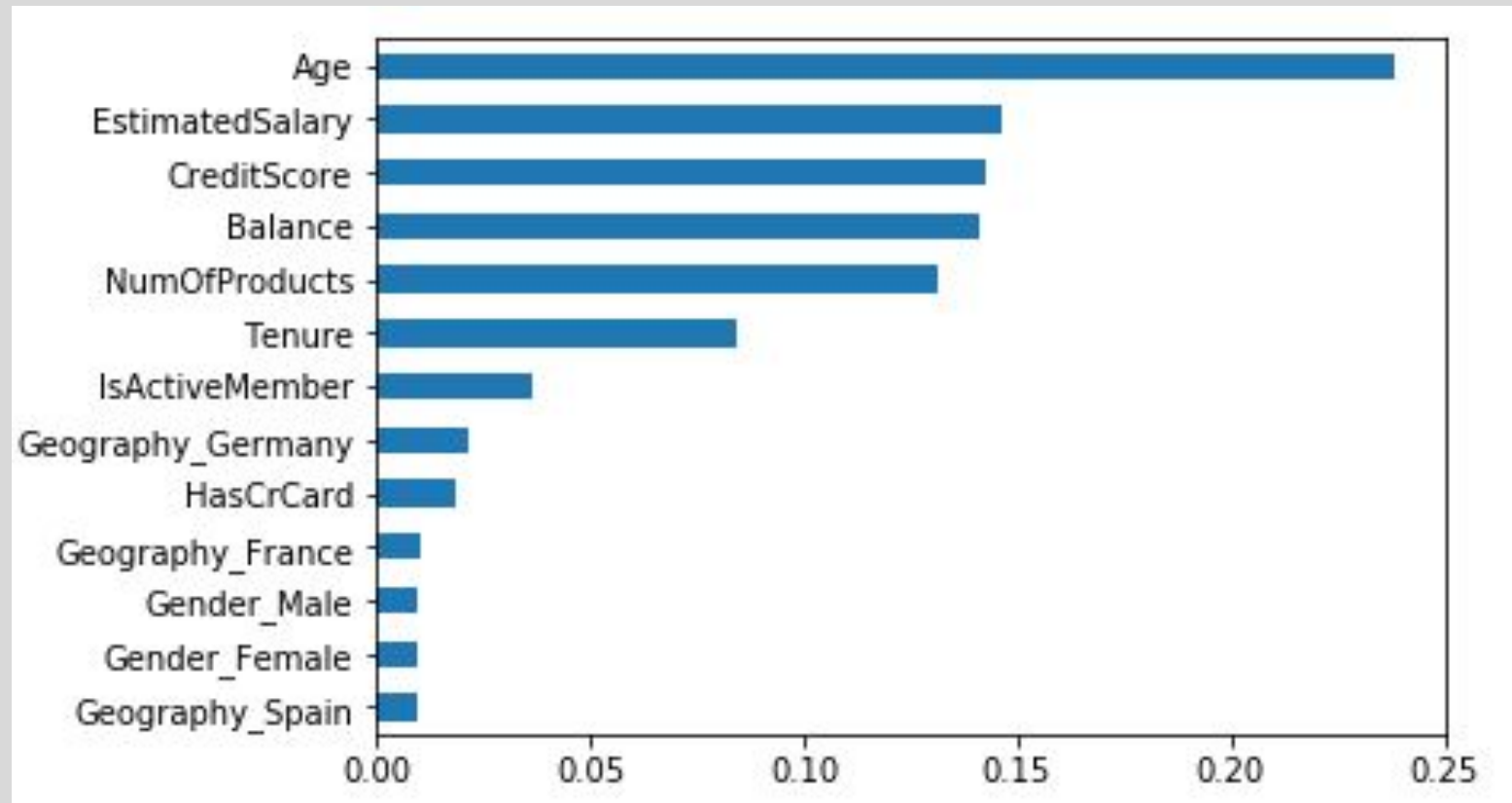
Correlation Matrix



MODELS



FEATURE IMPORTANCE



RECOMMENDATIONS

Key factors

Suggested implementations

01

Credit Score: Inversely proportional to Churn Rate

Increase awareness amongst customers on importance of maintaining a healthy credit score

02

Balance: Directly proportional to Churn Rate

Customized financial advisory and investment offerings to different segments of customers

03

Age: Directly proportional to Churn Rate

Launch Digital products and diverse schemes to woo customers from different age brackets



Thank you!

