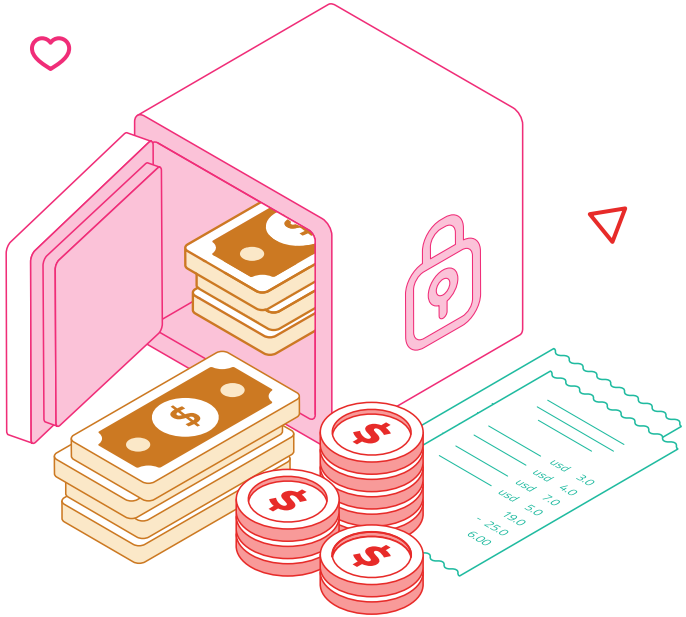

ADS 542 Final Project

Gamze G. Kasman
June 2023

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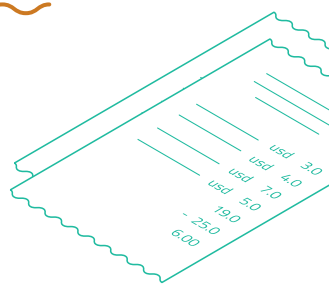


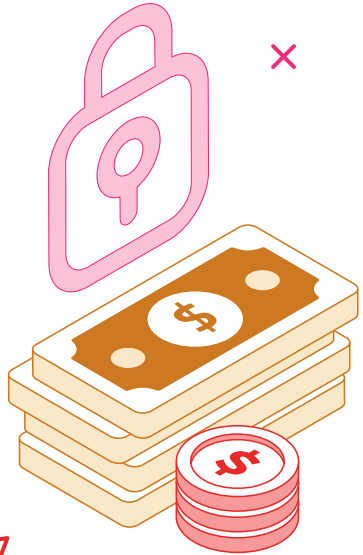
Business problem

The Aim of the Study

01

Mission statement

Our project, which is related to direct marketing campaigns (phone calls) of a Portuguese banking institution, aims to predict whether the client will subscribe to a term deposit (variable y).



Term Deposit

A term deposit is a fixed-term investment that includes the deposit of money into an account at a financial institution.

—investopedia.com

The data is made available for study purposes by Moro, Rita, Cortez (2012).

Exploratory Data Analysis

Let’s have a look at the data!

02

Customer Profile

Job

- administration
- blue-collar jobs
-technicians

Marital Status

Majority of the customers are married.

Default

Majority of the customers do not have a credit in default

Customer Profile

Loans

Many of the past customers have applied for housing loan but very few have applied for personal loans

Contact

Cell-phones seem to be the most favoured method of reaching out to customers. Many customers have been contacted in the month of May

Customer Profile

Age-40

Duration-254 sec (4 min)

Campaign-2.5 calls

Some average figures

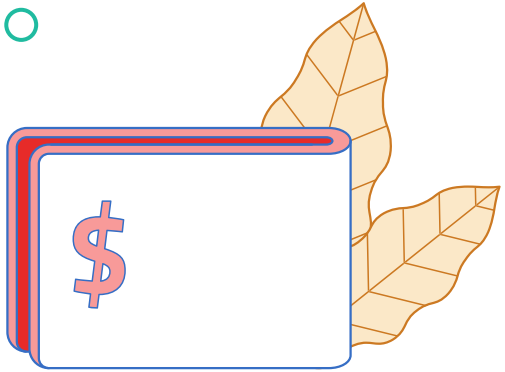
Bivariate Analysis

Jobs

-administrative
-technicians

Education

-university degree



Marital

-married

Default

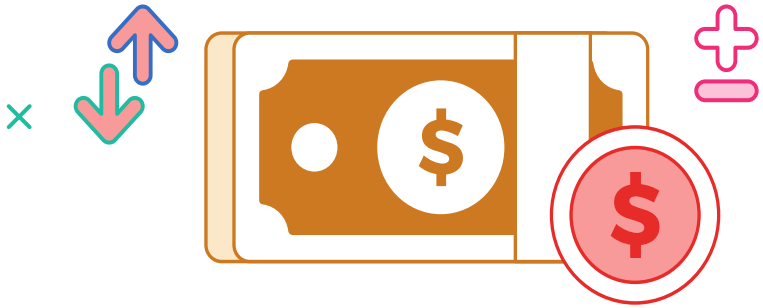
-no credit in default

Imbalanced Target Feature

There is a heavy imbalance in the target feature!

Model Selection

How about KNN?



03

Accuracy Results

Gradient Boosting

0.90

K Near Neighbours

0.89

Random Forest

0.89

XG Boost

0.89

Logistic Model

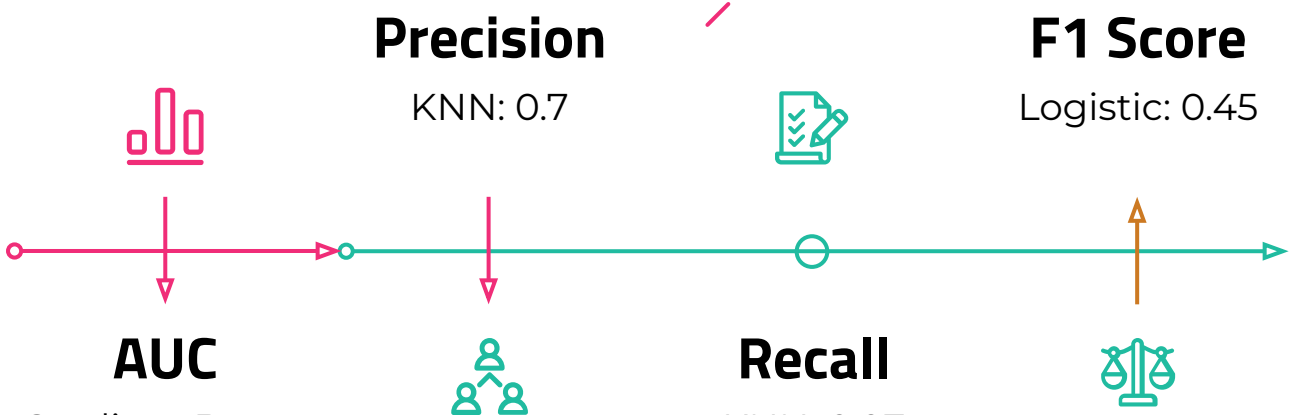
0.88

Support Vector Machine

0.88

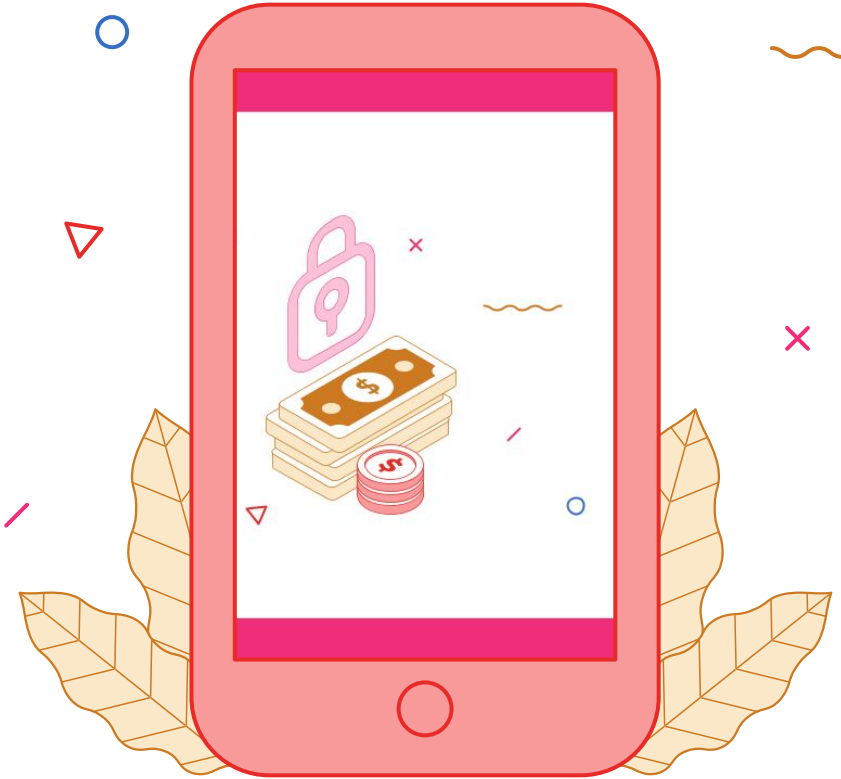
Decision Tree: 0.86, Gaussian Naive Bayes: 0.18

Other Metrics

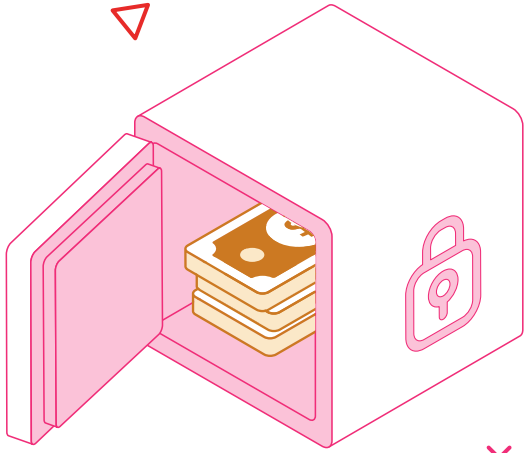


KNN

We have chosen KNN as it is the most balanced model with a good accuracy and lower recall levels.



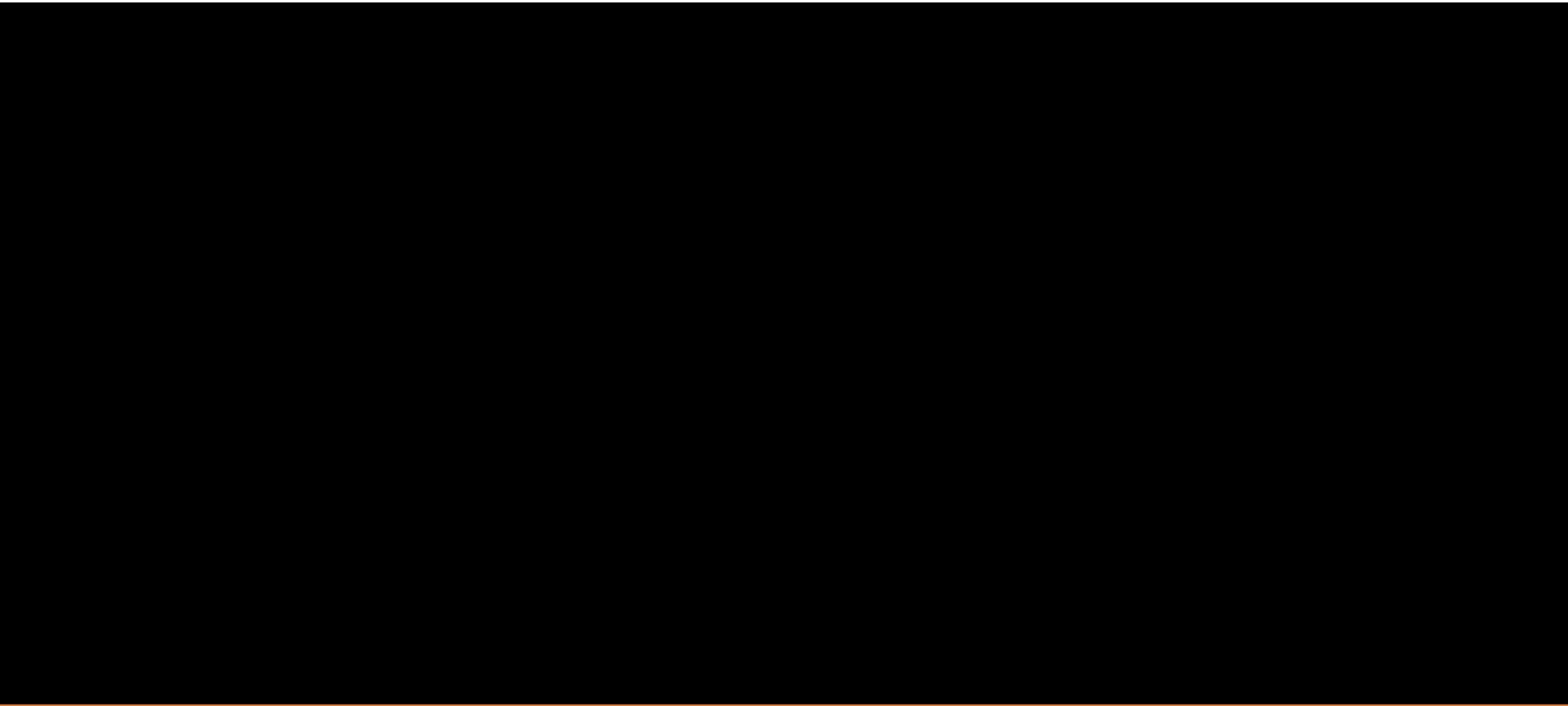
Deployment



Have you seen my first video? :)

04

Deployed Model on LocalHost



MANY THANKS!