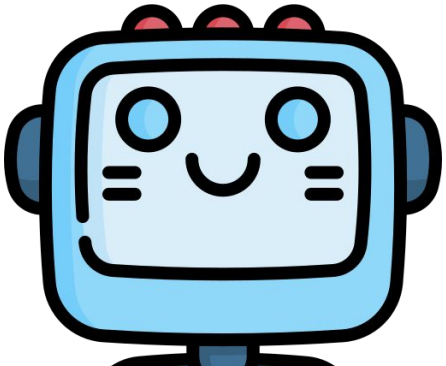
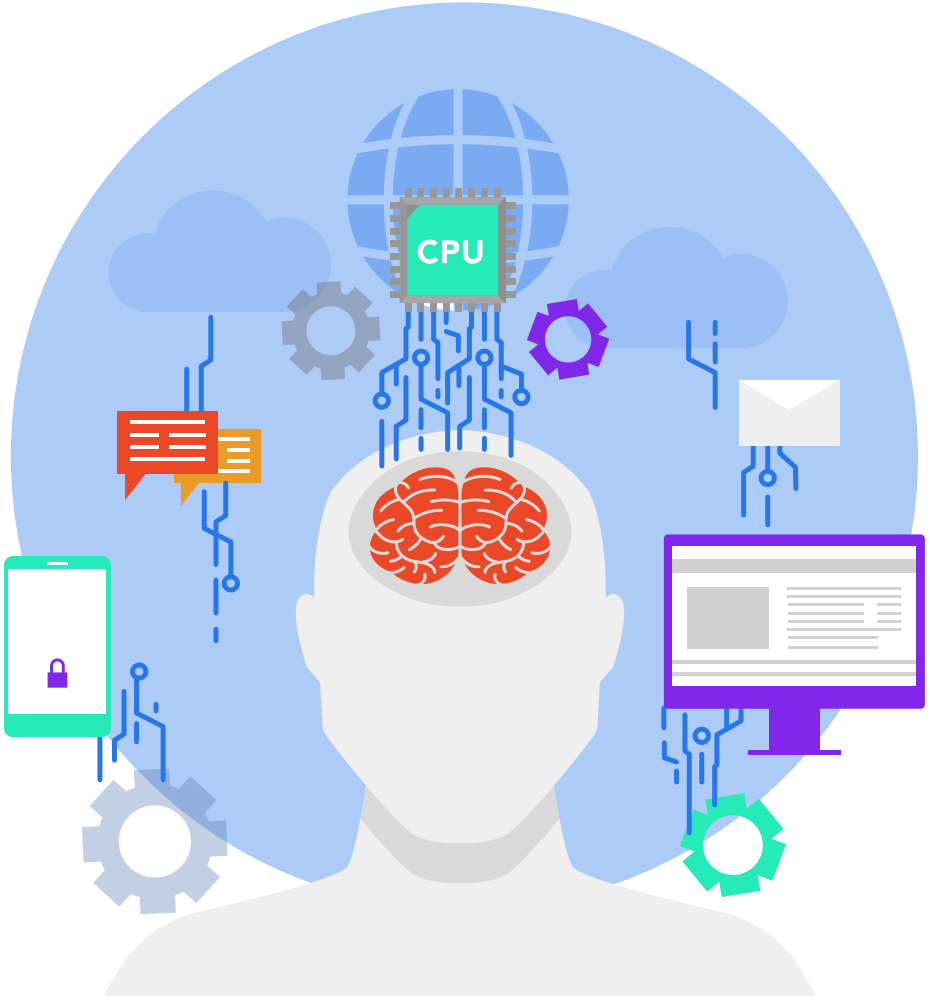
I_ll_think_about_it_later

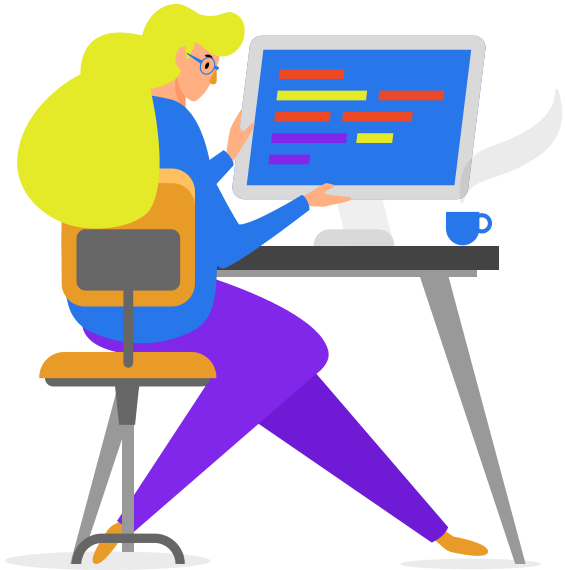




Financial Management System

Unscript Rookies
Hackathon 2022

Approach



01

Training Dataset

With help of provided data from FRCRCE lot of time was saved

02

Data Analysis

Data was analysed for checking correctness of various fields

03

Train the model

Model was trained using SKLearn and XGBoost

04

Storing the Model

ML Model was stored using Pickle

05

Backend

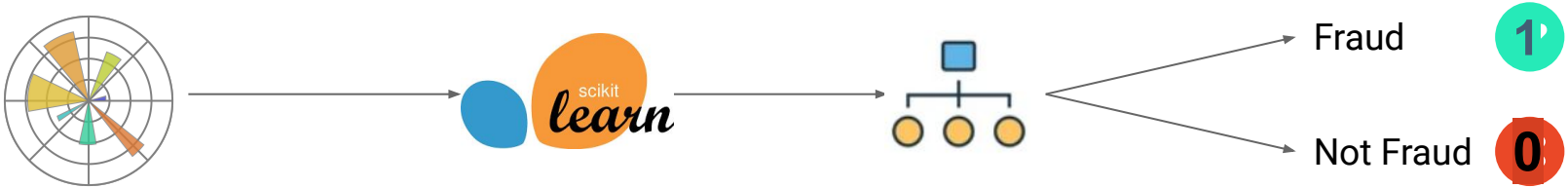
Using Flask, Web App is made, when a user enters transaction ID ML model runs by using data from Database.

06

Frontend

Frontend is created to use application for Financial Management System.

Working Of Model



01

Data Analysis

According to the dataset, labeled as Fraud or Not a Fraud

02

Deciding Parameters

Deciding the correct features for model training

03

Classification

Classifying the transactions as fraud or not

04

Output

0 - Indicates not a Fraud
1 - Indicates it a Fraud transaction

Data Analytics

90%

Highly imbalance data

90% of data is Non Fraudulent.

2

FEATURES

Feature Engineering for choosing the correct features

0%

Missing Values

Checking for missing values & none outliners

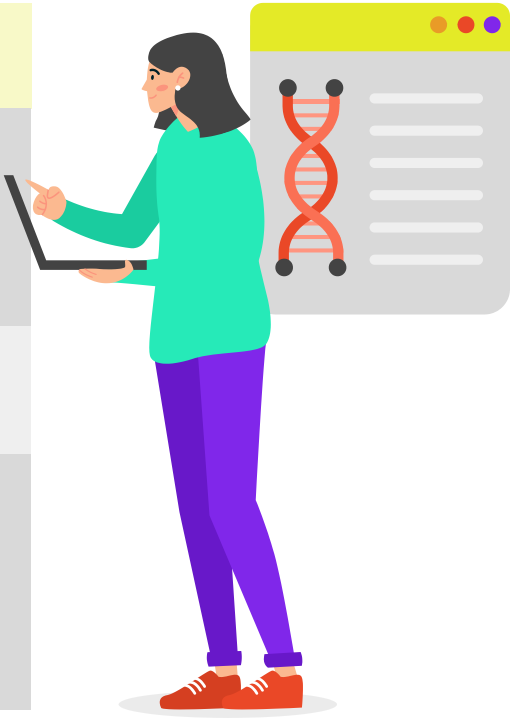
2

CASH OUT & TRANSFER

Most frauds occur here only

Models We Tried

Models	
Artificial Neural Networks	An ANN is based on a collection of connected units or nodes called artificial neurons, which loosely model the neurons in a biological brain.
Random Forest	Decision Trees & pooled the results to make a prediction
Support-vector machines	Makes prediction using various statistical techniques
XGBOOST	Gradient boosted trees and performs better in imbalanced dataset



VS

XGBOOST

- This algorithm is well known for being used in imbalanced datasets. Similar to Random Forests, the algorithm generates several decision trees and pooling the results.
- However,instead of generating multiple full blown decision trees in parallel and pooling the results, it generates multiple trees formed by weak learners sequentially and then it pools the results

Vs

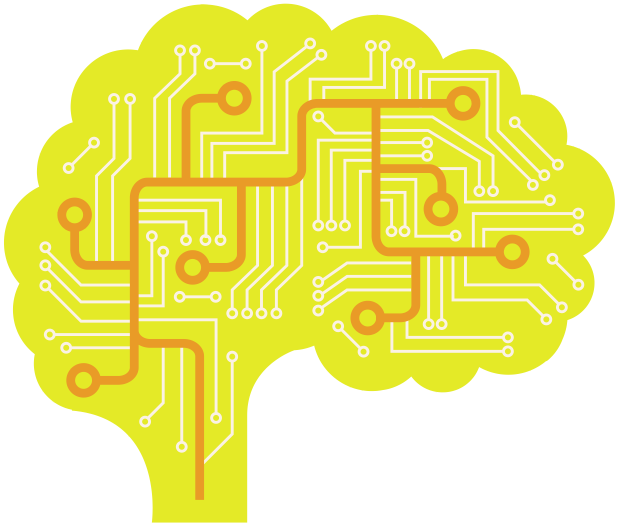
RANDOM FOREST ALO

- A random forest is an algorithm that generates several decisions trees and pools the results of each tree to make a more robust prediction
- Random Forest can assign weights to each class to reduce the bias of the model towards the majority class, in this case valid transaction.

XG BOOST - METRICS

Confusion Matrix

[[2008 0]
[1 2102]]



Precision

Recall , F-1 score

Accuracy

Approach to avoid Fraud Transactions

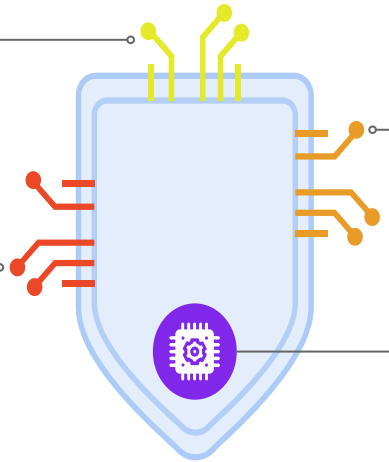
01

Awareness about new phishing scams

02

Two Step verification

It provides stronger security during transaction
It provides Dual Factor authentication.



03

Mac address & New ip-login verification

04

Location

Ip Matching, Browser Fingerprinting

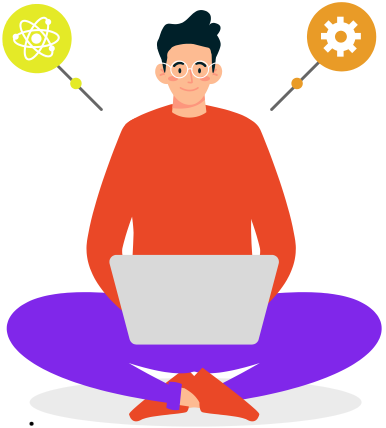
Future Improvements

Training

Model could be developed by Hypertuning parameters

Frontend

Frontend can be developed to make it more attractive



New Features

Can be added if extra information is captured during transaction

More Training data

With use of more data accurate prediction capability of model can be increased

Showcase

Finacial Management

Check The Transcation Details Here

Enter Transcation Id

Transcation Id :

Time (hrs)	Mode Of Transcation	Transcation Amount(rs)	Old Balance	Current Balance	Recepient Id	Recepient Old Balance	Recepient Current Balance	Status Of Transcation
hrs	1104793	5334716rs	374rs	CASH_OUTrs	76536.06	C1282434920	0.0	0.0


THANK
YOU!