# **Find Default(Credit card fraud detection)**

* **Introduction:** In the realm of credit card security, FindDefault stands out as a beacon of protection. By harnessing the power of machine learning, it assists credit card companies in ferreting out fraudulent transactions. By analyzing historical credit card transaction data, FindDefault accurately predicts transaction legitimacy, thus fortifying the financial stability of both cardholders and financial institutions.
* **Problem Statement:** Credit card fraud is a big problem. FindDefault is like a superhero that stops it using smart computer tricks. It catches bad transactions quickly to keep your money safe.
* **Methodology Overview:** In our quest to combat credit card fraud, we employed a comprehensive methodology:

*1. Getting Data:* We used a computer program called pandas to bring in our data.

*2. Checking Data:*

- We looked at the data really closely to see if anything was missing or weird.

- Luckily, everything we needed was there.

- But we noticed some things were uneven, so we fixed that by making some parts smaller.

*3. Splitting Data:* We divided our data into two groups: one to train our model and one to test it.

*4. Trying Different Models:*

- We tried out lots of different ways to teach the computer what to look for.

- We ended up picking the Random Forest model because it seemed to work best.

- Then, we taught our model with the training data and checked how well it did with the test data.

*5. Making It Better:*

- We spent time tweaking little details to make our model even better.

*6. Saving Our Model:*

- Once we were happy with our model, we saved it so we could use it later.

*7. Improving Features:*

- We kept working to make our model smarter by making changes to the features it uses.

* **Goals**

Our plan helps us do a few important things:

- It checks if our model is good at its job.

- It helps us spot any problems with our model.

- It makes our model stronger and more reliable.

* **How We Do It**

We run our code to test our model, using new data. We look at different numbers to see how well our model works.

* **Pipeline:**

This Python script makes it easy to find credit card fraud using a machine learning system. It uses a library called scikit-learn to handle everything from getting the data ready to making predictions.

* **Goal**

To make a code that we can use again and again, with all the parts needed to find fraud in transactions, using a trained model.

* **How It Works:**

*- Getting Data*: The script gets information from an Excel file called 'example.xlsx', which shows details about transactions and whether they're fraud.

*- Setting Up:* It makes a plan using scikit-learn. This plan has two main steps: adjusting the features and using a model called Random Forest Classifier to guess if a transaction is fraud, saved in a file.

*- Checking:* The script teaches the computer using the data and then sees how good it is at spotting fraud. It checks using a tool from scikit-learn.

*- Results:* When the script runs, it tells us how good the model is at finding fraud.

**In Conclusion**

This script is an easy way to use a computer system to find credit card fraud. It puts all the steps together neatly, making it easier to spot fraud in real-time transactions.









