**Credit Card Fraud Detection Project -Project 2**

* **Introduction**

**This project focuses on building a machine learning model for credit card fraud detection using a dataset of transactions made by European cardholders in September 2013.**

* **Project Goals**

**- Build a classification model to predict fraudulent transactions.**

**- Address the highly imbalanced nature of the dataset**

* **Dependencies:**

**- Python 3.x**

**- Jupyter Notebook**

**- NumPy**

**- Pandas**

**- Matplotlib**

**- Seaborn**

**- Scikit-learn**

**- XGBoost**

* **Exploratory Data Analysis (EDA)- to explore and visualize the dataset.**
* **Data Cleaning -To Check and handle missing values, outliers, and inconsistencies using**
* **Dealing with Imbalanced Data**
* **Model Selection and Training**

#### Set necessary parameters

#### Splitting data into train, test, validation sets

* **Model Validation and Deployment**

Model Evaluation with AUC Curve

#### **AUC is a robust evaluation metric as it assesses a model's ability to discriminate between positive and negative instances across various classification thresholds. It is threshold-invariant, accommodating different threshold choices, and provides a concise, comprehensive summary of a binary classification model's performance, particularly valuable in imbalanced datasets.**