Project: EDA of Credit Card Transactions for Fraud Detection

Problem Statement:

Credit card fraud is a significant concern for financial institutions and consumers. Fraudulent activities cause substantial losses and impact customer trust. This project aims to perform **Exploratory Data Analysis (EDA)** on credit card transaction data to identify patterns and anomalies that may indicate fraudulent behavior.

Students will analyze the dataset to gain insights into transaction patterns and potential factors distinguishing fraudulent transactions from legitimate ones.

Dataset Details:

Dataset Name: Credit Card Fraud Detection Dataset
Source: Kaggle -https://www.kaggle.com/datasets/mlg-ulb/creditcardfraud

EDA Questions:

- How many rows and columns are in the dataset?
- What are the column names and their data types?
- Are there any missing or null values in the dataset?
- How many transactions are fraudulent, and how many are legitimate?
- What percentage of transactions are fraudulent?
- What are the minimum, maximum, mean, and median values for numerical columns like `Amount`?

- What is the maximum transaction amount in the dataset, and is it fraudulent?
- Can we create a **bar chart** showing the count of fraudulent vs. legitimate transactions?
- What does the **histogram** of transaction amounts look like?
- Can we use a heatmap to visualize the correlation between numerical features?