# **Stock Market Prediction Project Documentation**

## **1. Exploratory Data Analysis (EDA)**

### **1.1 Dataset Overview**

The project utilizes a stock market dataset sourced from Kaggle, containing historical stock prices and relevant financial information.

### **1.2 EDA Process**

* Data Loading: Imported the dataset and checked for any missing values or inconsistencies.
* Descriptive Statistics: Computed basic descriptive statistics to gain initial insights into the data.
* Time Series Analysis: Explored the temporal aspects of stock prices to identify trends, seasonality, and anomalies.
* Correlation Analysis: Investigated relationships between stock prices and other financial features using correlation matrices and visualizations.
* Data Visualization: Created visualizations to represent key statistics and trends, aiding in a better understanding of the dataset.

## **2. Predictive Modeling**

### **2.1 Model Selection**

* Regression Models: Chosen Linear and Logistic regression models for predicting stock prices, considering their suitability for continuous target variables.

### **2.2 Model Implementation**

* Feature Engineering: Extracted relevant features from the dataset and created additional features that might enhance predictive performance.
* Data Splitting: Split the dataset into training and testing sets for model training and evaluation.
* Regression Modeling: Implemented regression models, potentially including linear regression, decision tree regression, and ensemble methods.
* Hyperparameter Tuning: Tuned model hyperparameters to optimize predictive performance.