# Stock Price Movement Prediction – Mini Project

## Objective

The objective of this project was to predict whether a stock’s price would go up or down the next day using a simple machine learning model.

## Dataset

I used historical stock data from a CSV file. The dataset included:  
- Date  
- Open, High, Low, and Close prices  
- Trading Volume

## Steps I Followed

1. I sorted the data by date to maintain the correct chronological order.  
2. I created features using the closing prices from the previous five days.  
3. I labeled each record as “up” (1) or “down” (0), depending on whether the stock price increased the following day.  
4. I removed any missing values from the dataset.  
5. I scaled the features to ensure better performance of the model.

## Models I Used

- K-Nearest Neighbors Regressor: Predicted the next day's stock price.  
- K-Nearest Neighbors Classifier: Predicted whether the next day's price would go up or down.

## Results

- The regression model produced predictions that were close to the actual prices.  
- The classification model was able to predict the direction of the price movement with good accuracy.  
- I also created graphs to visually compare the actual and predicted values, and the results looked quite accurate.

## Conclusion

This project demonstrated that I could use a basic K-Nearest Neighbors model to predict stock price movements with reasonable accuracy. It serves as a solid starting point for building more advanced prediction models in the future.