STOCK PRICE PREDICTION

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Problem Statement	• Given the Stock Market Dataset ,predict the **Closing Price of the Stock on s given day.** • Showing changes in outcomes (error) on inclusion of features that are widely accepted as market determinants. • Exploring companies in different sector (**IT Industry , Banking Industry, Health Industry)** ➢ Finding out the best technique in each of the above sectors ➢ Does the technique of predicting the closing price of one company's stock work with another company's stock ? ➢ Which sector's stock prices are more predictable ?
Input / Output Parameters	• The current parameters in the provided dataset are as follows: ➢ Opening Price, Lowest Price, Highest price, Total Trade Quantity, TurnOver • We will be studying the behaviour of stock prices and essential factors that affect may affect the stock price to come up with final features. Example features we would be exploring are : ➢ Previous Day closing price ➢ Average rate of change over the past 10 days etc. **Output Parameter** : Closing Price of Stock
DataSets	APOLLO Stock Prices: https://www.quandl.com/data/NSE/APOLLOHOSP-Apollo-Hospitals-Enterprise-Limited HDFC BANK Stock Prices : https://www.quandl.com/data/NSE/HDFCBANK-HDFC-Bank-Limited TCS Stock Prices : https://www.quandl.com/data/NSE/TCS-Tata-Consultancy-Services-Limited
Pre-Processing techniques	• Feature extraction and selection based on the study and research in the stock market domain.
Learning Techniques	• **Simple** : Linear Regression, Regularized Linear Regression(Ridge,LASSO etc.) • **Complex** : Kernel Based Approach in Linear Regression(Polynomial, Gaussian) and Support Vector Regression.
Model Selection	• The mentioned techniques will be explored and the one giving the best results will be adopted based on the Evaluation Metrics • **Tuning hyperparameters :** Cross Validation , Tuning parameters in Kernel based and Regularized Regression.
Training Approaches	• Stochastic Gradient descent • Batch Gradient Descent
Evaluation metrics	• Mean Squared error