 

**Capstone Project 2 - Yes Bank Stock Closing Price Prediction(Supervised Regression)**

**Project by ANKIT RAI**



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| **PROJECT APPLICATION:**   * **Data cleaning**- The correlation between our dependent and independent variables. * **Exploratory Data Analysis**- Plotting the dependent variable and distributions of dependent and independent variables. Creating a visual representation of the relationship between each of our variables. * **Preprocessing of Data and Feature Engineering**-Detecting and dealing with multicollinearity in our dataset, as well as using the log transform to cope with positively skewed data. Scaling and dividing the data into train and test sets. * **Model Application**-Fitting different models to our data and optimising them through cross-validation.   These models are used to make predictions on test and training data.  The models used are as follows-  1. Linear Regression  2. Regression of the Lasso  Regression of the Ridge  4. Elasticity   * Data cleaning is the process of dealing with null values, duplicate data, and outliers in our data. * **Data Exploratory Analysis: -** * **Data Visualization:** Using various charts such as a line chart, scatter plot, heatmap, pair plot, distplot, boxplot, and so on to better view data and analyse relationships and patterns. * **Model performance comparison:** This is a comparison of all implemented models using several Regression assessment metrics such as Mean absolute error, Mean squared error, RMSE, R-squared, and Adjusted R-squared. * **Conclusion:** Using the data and the predictions generated by our various predictive models on unseen (test) data, we can draw some conclusions. |
| **Project Summary:** Yes Bank is a well-known Indian bank that was created in 2004 by Rana Kapoor and Ashok Kapoor in Mumbai, India. Through retail banking and asset management services, it provides a diverse range of specialised solutions to corporate and retail consumers.  Yes Bank is a publicly traded firm that is listed on the stock exchange and is thus susceptible to the ups and downs of the stock market cycle.  Speculation drives the stock market. Investors determine whether to buy or sell a company's stock depending on its performance and reputation. Stock market prices are heavily influenced by public opinion.  As a result, when news of a fraud case involving Rana Kapoor leaked in 2018, the stock price of Yes Bank plummeted dramatically.  Here, we are given Yes Bank stock market price data, and our task is to forecast the stock's monthly closing price. This information includes the date, lowest, maximum, and closing price.  Our method is to train a machine learning model on this historical data and then use the parameters learnt during training to forecast the closing price for new unseen data.  This manner, we can train our model to recognise trends in the data and utilise that knowledge to make predictions.  For this exercise, we will use a variety of Regression Models, including Linear Regression, Lasso Regression, Ridge Regression, and Elastic Net Regression. |