

# Capstone Project Submission

## Instructions:

- i) Please fill in all the required information.
- ii) Avoid grammatical errors.

### **Team Member's Name, Email and Contribution:**

#### **1) Mohd Danish:**

**Email:** [mdanish63364@gmail.com](mailto:mdanish63364@gmail.com)

- 1) Feature Engineering:
  - Introduced new features
  - Introducing Dummy Variables
- 2) Data Visualization:
  - Trend of Close price
  - Distribution of Close price
  - Heatmap
- 3) VIF
- 4) Regression Analysis:
  - Linear Regression
  - Lasso
  - Ridge
  - ElasticNet
- 5) Group Colab

#### **2) Abdul Rahman Talha:**

**Email:** [rahman88talha@gmail.com](mailto:rahman88talha@gmail.com)

- 1) Correlation Analysis
  - Between Independent Variables
  - Between Dependent and Independent Variables
- 2) Data Visualization:
  - JointPlot
  - Distplot
- 3) Regression Analysis:
  - Linear Regression
  - Lasso
  - Ridge
- 4) PPT

#### **3) Huzaifa Khan:**

**Email:** [huzaifakhan2974@gmail.com](mailto:huzaifakhan2974@gmail.com)

- 1) Data Munging:
  - Introducing New variables
  - Settling DateTime
- 2) Data Visualization:
  - Distplot
  - Boxplot
  - Scatter Plot
- 3) Regression Analysis:
  - Linear Regression
  - Lasso
  - Ridge
  - ElasticNet

**4) Arbaaz Malik:****Email:** [malikarbaaz267@gmail.com](mailto:malikarbaaz267@gmail.com)

- 1) Data Munging:
  - Feature Engineering
- 2) Data Visualization
  - Bar-plot
  - Line-plot
  - Scatter-Plot
- 3) Regression Analysis:
  - Linear Regression
  - Lasso
  - Ridge
  - ElasticNet

**Please paste the GitHub Repo link.**Github Link:- [https://github.com/Malikarbaaz/YES\\_BANK\\_CLOSE\\_PRICE\\_PREDICTION](https://github.com/Malikarbaaz/YES_BANK_CLOSE_PRICE_PREDICTION)**Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)**

**Yes Bank Limited** is an Indian private sector bank headquartered in Mumbai, India and was founded by Rana Kapoor and Ashok Kapoor in 2004. The YES BANK stock market offers excellent investors opportunities by buying a stock and becoming a stockholder to earn from long-term benefits or trading on the stock **till 2018** after that the stock price of yes bank was actually fall from 2018 onwards which shows the impact of fraud case involving Rana Kapoor for which it has been in the news.

The YES Bank stock market is a dynamic and volatile Industry and Investors generally decide to buy or sell the stock based on the company's past and present performance. Owing to this fact, it was interesting to see how that impacted the stock prices of the company.

The dataset contains the monthly stock price details for Yes Bank **['Date', 'Open', 'High', 'Low', 'Close']**. The main objective of this project is to predict the stock's closing price of the month.

**Conclusion :**

1. When we load the data we check for duplicate and null values if there but luckily we see that there is no null values nor duplicate values, But Date feature have values in object data type. So, we converted it into proper date format YYYY-MM-DD.
2. With the help of visualization we check that from 2018 onwards there is sudden fall in the stock closing price. It makes sense how severely Rana Kapoor case fraud affected the price of Yes bank stocks.
3. With the help of distribution plot we see that our data is rightly skewed which doesn't look good in viewing of statistical hypothesis. So we apply some kind of transformation i.e. Log Transformation to convert it into a normal distribution.

4. With the help of correlation matrix we learn that the dependent variable is highly correlated with all the independent variables.
5. Even we see that there is a very high VIF score between all the features.
6. In spite of all the models, Linear Regression performed the best result, with lowest MSE, RMSE, R2 and Adjusted R2 scores.
7. In all of these models our accuracy revolves in the range of 68 to 77% and there is no such improvement in accuracy score even after hyperparameter tuning.