Project Summary

Capstone Project-2
Bike Sharing Demand Prediction
(ML-Regression)

Team Members' Details and Contribution:
Name: **Chetan Prakash** Email ID: cp120794@gmail.com ● Contributed to the Google Collab notebook and helped with Google Drive data connectivity, data cleaning, data manipulation, and EDA Visualization. ● Preparation of the overall content and design of the group presentation. ● Also help with data processing into different regressors. ● As a team leader, helped in dividing the roles amongst the team members. Name: **Pallavi Wagh** Email ID: waghpallavi2010@gmail.com ● Helped with Google Collab notebook - data cleaning, data manipulation, EDA Visualization, and finalizing the conclusion. ● Contributed to the Technical Document in the content of the problem statement, and also in the encoding part. ● Created the Project summary by ensuring all the points were covered and mentioned all members' contributions to the project. Name: **Kaushik Dey** Email ID: - deykaushik.1999@gmail.com ● Development of the business objective and problem statement along with a relevant questionnaire for the business objective. ● Contributed to data manipulation and EDA visualization, and also tried to make evaluations and improvements to the model. ● Help to make different functions into the collab so they help to find out the insights in a well-structured manner.

Name: **Hrushikesh Rajesh Dharamthok**
Email ID: - dharamthokhrushikesh13@gmail.com
  ● Helped with the approach to solving the questions and also created visualizations in the Google Collab.
  ● Help in the feature engineering part.
  ● Contributed to presentation contents and divided the roles and slides amongst the team for the presentation.

Name: **Prabhat Rajput**
Email ID: - prabhatchauhan202@gmail.com
  ● Creation of relevant questions for analysis.
  ● Helped to find the accuracy of the model and visualize their result.
  ● Helped in the feature importance and Conclusion part.
  ● Helped in editing the overall structure and flow of Google Collab.

GitHub Repo link:-

Chetan Prakash Github Link: -
https://github.com/Chetan1207/ML-Regression-Bike-Sharing-Prediction.git

Pallavi Wagh Github Link: -
https://github.com/waghpallavi/Bike-Sharing-Demand-Prediction

Kaushik Dey Github Link: -
https://github.com/Kaushik0908/Seoul_Bike-Sharing-Demand

Hrushikesh Rajesh Dharamthok Github Link: -
https://github.com/Hrushi360/ML-Regression-Bike-Sharing-Prediction

Prabhat Rajput Github Link: -
https://github.com/PrabhatRajput001/Bike-Sharing-Demand-Prediction.git

Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches, and your conclusions. (200-400 words)

Seoul city locals can rent bicycles for a charge and for a set period of time. However, the demand for motorbikes varies according to various variables, and they cannot keep up. Our approach aims to estimate demand for rented bikes at

any given time, considering all factors that will assist in regulating the flow of motorbikes. Rental bikes are already available in numerous urban locations to increase transit convenience. It is critical that the rental bikes are accessible and available to the general public at the proper time since this eliminates waiting. Maintaining a consistent supply of rental bikes for the city eventually emerges as a major issue. The ability to estimate the number of bikes needed each hour is essential. We are going to explore the machine learning algorithms which function effectively with the data and the factors that have a significant impact on the demand for rented bikes.

In this project, I dig deep into the datasets by doing an exploratory data analysis to see certain patterns that can be helpful for businesses in their profits. After that, I go into the machine learning part and implement the split data which is (70:30) ratio into the different regressors like Linear regressor, Lasso, Ridge, and so on and find out the best model accuracy.

I began by in-depth cleaning the dataset. After that, I did a generalized analysis to get numerous insights. In this dataset, we see several data like Date, Rented Bike Count, Hour, Temperature, Humidity(%), wind speed, visibility, Dew Point, Solar radiation, rainfall, snowfall, seasons, holiday, and Functional days. After analyzing all the insights we find some correlation between several things and causes and also solutions for that which will help in business problems. We also analyze the regression MSE, RMSE, R2, R2 adjusted, etc. values to predict the accuracy of the model and compare it with the help of the chart and we can see that Random Forest Regressor gives the highest accuracy.