**Capstone Project Submission**

**Instructions:**

i) Please fill in all the required information.

ii) Avoid grammatical errors.

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| **Team Member’s Name, Email and Contribution:** |
| **TEAM MEMBERS -**   1. IQBAL BABWANE 2. SAMEER ANSARI 3. LUKMAN HAIDER   **NAME-** SAMEER ANSARI  **EMAIL –** an.sameer.1998@gmail.com  **CONTRIBUTION -**  Data Analysis, Data Visualization, Feature Engineering, Fitting Models, Model Explainability and Report Writing. |
| **Please paste the GitHub Repo link.** |
| https://github.com/reemas-irasna/Bike\_sharing\_demand\_ml |
| **Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)** |
| This study focused on predicting the bike sharing demand using given dataset. Regression techniques Linear Regression, Lasso Regression Ridge Regression, Elastic Net, Decision Tree, Bagging Regression, Random Forest, Gradient Boosting Regressor, XGB Regressor, Light-GBM, are used to predict. This statistical data analysis shows interesting outcomes in prediction method and also in an exploratory analysis.  First of all, we do EDA on the dataset and observe the following.   * Heat map shows Temperature and Dew point temperature is highly correlated. * Most number of bikes are rented on time **17** to **19th hour of the day** and in morning at **8** pm. * Most numbers of Bikes were rented in **summer**, followed by **autumn**, **spring**, and **winter**. * Most number of bikes are rented on **Working day** instead of holiday.   After the EDA, we do Feature Engineering then after we simultaneously creating 10 different Regression models.  Hence the prediction from the linear model is very low and The best predictions are obtained with a **LightGBM** model with an 𝑅2 score of **0.919** and RMSE score of **183.21** |