**Capstone Project Submission**

# Bike Sharing Demand Prediction

**Instructions:**

1. Please fill in all the required information.
2. Avoid grammatical errors.

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| **IRSHAD, GMAIL: irrshadkhan@gmail.com** | | |
| **ROLES:**    1. Importing data  2.Count number of rows and columns in the dataset  3.Find the missing values in the dataset  4.Drop low percentage of missing values  5.Find and remove outliers  6.Preprocessing the data  7.Changing the column name  8.Breaking the data column in year, month, day  9. changing the data type  10. Deduce the relationship between demand of rental bike and months  11.Deduce the relationship between demand of rental bike and hour  12. Deduce the relationship between demand of rental bike and function day  13. Deduce the relationship between demand of rental bike and seasons  14. Deduce the relationship between demand of rental bike and holiday  15.Make a list of numerical variable present in the dataset  16.Now make some graphs between the numerical columns and rented bike count  17.Make a regression plot to determine the positively related or negatively related features  18.Checking the correlation between the variables so make a heat map and deduce the relation between most positive correlated and negative correlated  19.Drop those columns which has highly correlated  20.Now apply the one hot encoding on the dataset  21.Finally apply model training on the dataset  22.Make dependent variable and independent variable  23.Apply train and test model on the dataset  21.Now apply 7 different algorithms on the dataset linear regression, lasso regression, ridge, elastic net,  Decision tree, random forest, gradient boosting, gradient boosting regressor.  22.Last make a conclusion | | |
| **Please paste the GitHub Repo link.** | | |
| Git hub Link:- https://github.com/irshad9873/Bike\_Sharing1/blob/main/Bike\_Sharing\_Demand\_Prediction\_Capstone\_Project.ipynb  My Drive link :-<https://drive.google.com/drive/folders/1p8m2xK5N3KNQ8C7wUtEQzHWKUvOWXRWV?usp=sharing> | | |
| **Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)** | | |
| **Bike sharing systems are a means of renting bicycles where the process of obtaining membership, rental, and bike return is automated via a network of kiosk locations throughout a city. Using these systems, people are able rent a bike from a one location and return it to a different place on an as-needed basis. Currently, there are over 500 bike-sharing programs around the world.**  **The data generated by these systems makes them attractive for researchers because the duration of travel, departure location, arrival location, and time elapsed is explicitly recorded. Bike sharing systems therefore function as a sensor network, which can be used for studying mobility in a city. In this competition, participants are asked to combine historical usage patterns with weather data in order to forecast bike rental demand in the Capital Bike share program in Washington, D.C.** | |
|  | **Currently Rental bikes are introduced in many urban cities for the enhancement of mobility comfort. It is important to make the rental bike available and accessible to the public at the right time as it lessens the waiting time. Eventually, providing the city with a stable supply of rental bikes becomes a major concern. The crucial part is the prediction of bike count required at each hour for the stable supply of rental bikes.** |
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