Capstone Project Submission

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

Team Member's Name, Email and Contribution:

1. **Adil Khan (adil.bm009@gmail.com)**
   1.1. Data Processing
   1.2. Data Wrangling
       1.2.1. Importing some important modules
       1.2.2. Summarising the data

   1.3. Seoul Bike Sharing Demand prediction
       1.3.1. Pre-processing the data
           1.3.1.1 Finding the missing values
           1.3.1.2 Searching for the duplicate values
           1.3.1.3 Changing the Column names
           1.3.1.4 Extracting Day, Month and Year from 'Date' column
           1.3.1.5 Changing the Data type
       1.3.2 Exploratory Data Analysis
           1.3.2.1 Univariate Analysis
           1.3.2.2 Analysis of Dependent Variable
           1.3.2.3 Analysation of Categorical Variables
               1.3.2.3..1 Month
               1.3.2.3.2 Weekdays-Weekend
               1.3.2.3.3 Hour
               1.3.2.3.4 Functioning Day
               1.3.2.3.5 Seasons
               1.3.2.3.6 Holiday
   1.4 XG Boost
   1.5 ADA Boost
2. **Sunil Kumar Panigrahi(sunilpanigrahi104@gmail.com)**
   2.1 Data Wrangling
   2.2 Analyse of Numerical Variables
       2.2.1 Analyse of Numerical variables displots
       2.2.2 Numerical vs. Rented Bike Count
       2.2.3 Regression plot

   2.3 Normalised Rented Bike count column data
   2.4 Checking of Correlation between Variables
       2.4.1 Checking in Ordinary Least Squares(OLS) Model
   2.5 multiCollinearity Heatmap
       2.5.1 Correlation Heatmap
   2.6 Create the Dummy Variables
       2.6.1 One hot encoding
   2.7 Linear Regression
   2.8 Lasso Regression
   2.9 Presentation PPT
3. **Vivek Singh (sviveksingh31@gmail.com)**
   3.1 Data Wrangling
   3.2 Model Training
       3.2.1 Train test split for Regression

Please paste the GitHub Repo link.

Github Link:-

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 to rent a bike from one location and return it to a different place on an as-needed basis.

As we can see the total amount of bike Rentals increases with the temperature per month. Whereas it seems that the rentall are independent of the wind speed and the humidity, because they are almost constant over the months. This also confirms on the one hand the high correlation between rentals and temperature and on the other hand that nice weather could be a good predictor. So people mainly rent bikes on nice days and nice temperature. This could be important in planning new bike rental stations.