Identifying factors favorable to demand for bike rentals

Project Proposal by: Himani Kaushik

- **Client:**
  - Who is your client and how will that client benefits from exploring this question or building this model/system?
    - A US bike rental and sharing service provider, BestBikes, has decided to create a new business plan to improve its revenue post COVID. The company wants to analyze the demand for shared bikes and understand the factors affecting the demand. The results will be utilized to change the business strategy to focus on important factors and operate in the most profitable manner possible.

- **Question/need:**
  - What is the framing question of your analysis, or the purpose of the model/system you plan to build?
    - The purpose of the model is to analyze the demand for bike sharing and rental using the independent factors provided in the dataset. The project will aim to understand the significant factors to predict the demand and how well these factors describe the demand.

- **Data Description:**
  - What dataset(s) do you plan to use, and how will you obtain the data?
    - The data will be obtained from this UCI repository - https://archive.ics.uci.edu/ml/datasets/bike+sharing+dataset.
    - This dataset contains the hourly and daily count of rental bikes between years 2011 and 2012 with the corresponding weather and seasonal information.
  - What is an individual sample/unit of analysis in this project?
    - The individual sample includes date, season, year, month, hour, holiday weekday, weather, temp, windspeed, humidity, count of total rental bikes, etc.
  - If modeling, what will you predict as your target?
    - I will predict the count of total rental bikes using linear regression.

- **Impact:**
  - What is your impact hypothesis?
    - By better understanding the independent factors in the dataset, BestBikes can make more informed decisions about the new business plan. So, the hypothesis that connects the analysis with the business plan is:
      'Higher temperature and less windspeed will be favorable to the demand for bike rentals.'

- **Tools:**
  - How do you intend to meet the tools requirement of the project?
    - Microsoft Excel: Exploring, aggregating and summarizing the dataset
    - Tableau: Visualizing the dataset to find helpful insights
    - Python libraries:
      - Pandas and Numpy: Manipulating data
      - Statsmodels and Scikit-learn: Linear Regression

- **MVP Goal:**
  - What would a minimum viable product (MVP) look like for this project?
    - MVP for the project could be a scatter plot/simple linear regression model showing the relationship between several factors and total count of the bikes.