**INFO 6210 - Data Management and Database Design - Spring 2021**

**Project Topic: Electric Bike Rental Management System**

**Team Name: Anonymous**

**Team Members:**

|  |  |  |  |
| --- | --- | --- | --- |
| First Name | Last Name | NEU ID | Email |
| Rakshith | Chandrashekar | 001006556 | [chandrashekar.r@northeastern.edu](mailto:chandrashekar.r@northeastern.edu) |
| Sharan | Chandra Shekar | 001582721 | [chandrashekar.sh@northeastern.edu](mailto:chandrashekar.sh@northeastern.edu) |
| Sanjit | Sateesh | 001090471 | [sateesh.s@northeastern.edu](mailto:sateesh.s@northeastern.edu) |
| Nishanth Reddy | Kogilathota | 001568981 | [kogilathota.n@northeastern.edu](mailto:kogilathota.n@northeastern.edu) |

**Project Overview:**

Database management system for Electric bike rental platform, wherein the purpose of this Database is to create, manage and monitor the records of the electric bike and the users of the electric bike present across the city of Boston. This database will give us information on the usage, maintenance, and performance of the electric bike in the city, furthermore, it also gives us insights on the revenue generated, it also gives us the perception on re-envisioning how people experience and move around the city. 

**Problem Statement:**

In a city like Boston where there is an abundance of public transport facilities, there persists an issue of last mile connectivity. An e-bike rental system would solve the issue of the last mile connectivity and makes the commute faster, convenient while also being ecofriendly and reducing the carbon footprint.

The rental system, though simple, requires a vast amount of data to provide a seamless experience to the user.

By creating this DBMS for the rental system, we intend to solve issues pertaining to

1. Data redundancy/duplication caused when a user upgrades the account to a premium/VIP status.
2. Difficulties associated in retrieving data distributed across multiple entities and providing personalized information to the user.
3. Security, which can be achieved by providing limited data access to users.
4. manual tracking/calculation of certain attributes by creating calculated fields, thereby eliminating the process of manual tracking/calculation.
5. Difficulties in Inventory Management of the e-bikes and tracking maintenance requirements.
6. Manual deletion of all the records associated with the user when a user deletes their account.

**Project Objective:**

1. To achieve our goal of reducing the duplication of record created when a user upgrades their account to premium/VIP status we plan to use the concept of normalization.
2. The concepts of triggers are used to automate the process of calculation.
3. Since we store the data pertaining to various categories across multiple entities retrieving, updating, and monitoring the data pertaining to that particular entity is easy and fast.
4. To provide personalized information pertaining to our user we generally make use of the concepts of joins to retrieve data that are distributed across multiple entities.
5. Generating real time visualization dashboard to improve business performance.