IE6700 DATA MANAGEMENT FOR ANALYTICS

Project Title: "PARKeasy: Parking Management System"

Milestone: Project Proposal

Group 10

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PROJECT PROPOSAL – IE6700 DATA MANAGEMENT FOR ANALYTICS

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Background information:

Parking management is a critical aspect of urban infrastructure. By optimizing the efficient utilization of available parking spaces, an automated parking management system serves to ease congestion and reduce the demand for additional parking infrastructure. Effective parking management not only makes city dwellers' lives more convenient but also helps cut down on emissions and congestion. Real-time availability of parking information, which is frequently provided by mobile applications or digital displays, is convenient for customers. We propose the online "PARKeasy: Parking Management System," which will offer practical and timely solutions to manage parking space, ease traffic, and improve security.

Current Scenario:

The current state of parking management in our city is highly inefficient. Drivers often face difficulties in finding parking spaces, resulting in congestion and frustration. Manual ticketing and payment processes further exacerbate the problem.
To address these issues, we aim to create an automated Parking Management System that streamlines the entire process, making it easier for both operators and users and the main Objectives are:

- Efficient Parking Space Allocation
- User Friendly Interface
- Real-time Monitoring
- Security

Business Problems:

1. **Inefficient Space Utilization:**
   One of the most significant problems in parking management is the inefficient use of parking spaces. Many parking facilities struggle to optimize their available spaces, leading to congestion and underutilization issues.

2. **Lack of Real-time Information:**
   Many parking facilities lack real-time information about available parking spaces. This can be frustrating for drivers who spend unnecessary time searching for parking spots, and it can lead to congestion in the vicinity of the parking facility.

3. **Traffic Congestion:**
   Poorly managed parking can contribute to traffic congestion, especially in urban areas. Vehicles circling in search of parking spots can increase traffic and air pollution.

4. **Maintenance and Costs Reduction:**
   It assists in scheduling maintenance tasks for the parking facility, ensuring that it is safe and well-maintained. Effective management can reduce operational costs, such as manual ticketing and monitoring.

5. **Environmental Impact:**
   Inefficient parking systems can contribute to environmental issues, including increased fuel consumption and emissions due to extended time spent searching for parking.

Other Requirements:

- One parking space can have one vehicle. One vehicle belongs to one parking space.
- One user can make multiple reservations. Multiple reservations belong to one user.
- Each user can have one membership. Multiple Memberships have many customers.