Zenpark
Context-Aware and Time-Sensitive Smart Parking Allocation System

Problem Statement

Existing smart parking systems focus primarily on availability listing rather than allocation quality. They lack time-aware reservation handling, assign parking spots without evaluating contextual suitability, and apply uniform logic across all users. These limitations result in blocked yet unused spots, inconvenient parking assignments, and repeated mismatches between users and parking spaces—leading to inefficient utilization and poor user experience.

Project Scope(Features)

Real-time parking availability is ensured through time-aware reservations with automatic expiry and dynamic reallocation of unused parking spots.

Parking spot appropriateness is improved by context-aware evaluation of distance, parking duration, and exit proximity using backend scoring logic.

User-specific parking allocation (solving the one-size-fits-all problem) is achieved by adapting parking recommendations based on individual user preferences and historical behavior, with scope for future machine-learning enhancement.