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(57) Abstract :
The present invention discloses a smart parking management system that integrates cloud control, infrared (IR) sensors, SG90 motors, and IoT-based communication for efficient parking automation. The system detects vehicle presence using IR sensors and controls parking gates with SG90 motors, automating the parking process. A cloud server processes real-time data from the sensors and motors, while machine learning algorithms predict parking availability, optimize space allocation, and enhance traffic flow. The user interface provides real-time updates, allowing users to reserve spots, check availability, and navigate to vacant spaces. The integration of AI and IoT enables continuous improvement in parking management by predicting peak times, adjusting parking fees, and optimizing space utilization. The system is scalable, cost-effective, and can be integrated with smart city infrastructure, making it a robust solution for modern parking challenges. Accompanied Drawing [Fig. 1]

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