

Abstract

Our real-time parking web application project aims to develop a comprehensive **Parking Management System** utilizing the **MERN** (MongoDB, Express.js, React, Node.js) stack. The system will efficiently monitor and display real-time parking availability, provide an interactive map for easy visualization of parking locations, and offer a user-friendly interface accessible across various devices. The system will include key features such as:

- Real-time parking availability updates
- Interactive map visualization
- User-friendly interface
- Mobile compatibility

The database server, **MongoDB**, will be the backbone for storing and managing parking data, while **Node.js** and **Express.js** will handle server-side logic and routing. **WebSocket technology** will enable real-time communication between the server and clients, ensuring that **users receive up-to-date information**. The proposed system will enhance parking efficiency, improve the user experience, and offer potential monetization opportunities through advertising or premium features. By leveraging the strengths of the MERN stack, this project will create a dynamic, responsive, and scalable web application, demonstrating the effectiveness of integrating modern web technologies for real-world applications.