Business Requirements Document

Company Name	Date
PARK AI	
Project Name	Created By
Smart Parking Management System	

Executive Summary	The Smart Parking Management System is an innovative solution designed to address the challenges of urban parking. By leveraging advanced technology, this system aims to enhance the parking experience for drivers, reduce traffic congestion, and contribute to a cleaner environment. Key features include real-time tracking of parking spaces, a user-friendly mobile application, secure payment integration, valet parking services, monthly subscription plans, and accurate satellite location data.

Business Objectives	To **Increase Revenue Streams**: ● Generate Consistent / Repetitive / Recurring Income Through Monthly Subscriptions and Premium Valet Parking Services. To **Enhance User Experience**: ● Shall Provide a seamless and user-friendly parking experience with real-time tracking, easy payments, and accurate location data. To **Optimize Parking Space Utilization**: ● Maximize occupancy rates by efficiently managing and monitoring parking spaces in real-time. To **Reduce Urban Traffic Congestion**: ● Alleviate city traffic by minimizing the time drivers spend searching for parking space / location, leading to improved traffic flow. To **Promote Environmental Sustainability**: ● Lower emissions and pollution by reducing idle driving time, contributing to a greener and cleaner urban environment.

Needs Statement	To develop a comprehensive parking application that optimizes the utilization of private parking spots for public use and addresses the challenge of inadequate parking spot information availability.

Project Scope	The parking application project aims to address urban parking challenges by optimizing the use of private parking spots for public benefit. By providing real-time availability information, facilitating easy bookings and payments, and promoting sustainable urban practices, the application seeks to improve the parking experience for drivers while benefiting private spot owners and enhancing urban mobility.

Requirements	**Functional Requirements** **5.1 User Registration and Authentication** ● Users must be able to register using their email, phone number, or social media accounts. ● Users must be able to log in using their credentials. ● Password recovery and account management functionalities should be provided. **5.2 Parking Spot Search and Reservation** ● Users must be able to search for available parking spots based on location, date, and time. ● The system must display real-time availability of parking spots. ● Users must be able to reserve a parking spot in advance. **5.3 Payment Processing** ● Users must be able to pay for parking using various payment methods (credit/debit card, digital wallets, etc.). ● The system must ensure secure payment processing. ● Users must receive a payment confirmation and receipt.

5.4 Notifications and Alerts

- Users must receive notifications about reservation status, payment confirmation, and upcoming reservations.
- The system must send alerts about parking spot availability and expiration of reservations.

5.5 User Profile Management

- Users must be able to view and update their profile information.
- Users must be able to view their reservation and payment history.

5.6 Admin Dashboard

- Administrators must have access to a dashboard to manage parking spots, view analytics, and handle user queries.
- The dashboard must provide real-time data on parking spot utilization and revenue.

6. Non-Functional Requirements

6.1 Performance

- The system must handle a large number of simultaneous users without performance degradation.
- Real-time updates on parking spot availability must be provided with minimal latency.

6.2 Security

- User data and payment information must be securely stored and transmitted.
- The system must comply with relevant data protection regulations.

6.3 Usability

- The mobile app and web application must have an intuitive and user-friendly interface.
- The system must be accessible to users with disabilities.

6.4 Reliability

- The system must be available 24/7 with minimal downtime.
- Regular backups of data must be performed to prevent data loss.

7. Assumptions and Constraints

- The system will integrate with existing parking sensors for real-time data.
- The development will follow an agile methodology, with iterative releases and feedback loops.
- The project must be completed within a specified timeframe and budget.

8. Risks and Mitigations

- **Data Breach:** Implement strong encryption and regular security audits.
- **Technical Challenges:** Ensure a skilled development team and use proven technologies.
- **User Adoption:** Conduct user training and provide comprehensive support.

9. Deliverables

- **Mobile App:** Fully functional mobile application for iOS and Android.
- **Web Application:** Web portal for users and administrators.
- **Backend System:** Robust backend to handle reservations, payments, and data storage.
- **Documentation:** User manuals, admin guides, and API documentation.

Stakeholders	
	- **Drivers**: The primary users of the system who need efficient parking solutions. - **Parking Lot Owners**: Will benefit from increased occupancy and streamlined management. - **Urban Planners**: Can use the system to reduce traffic congestion and improve urban mobility. - **Environmental Agencies**: Interested in the environmental benefits of reduced traffic congestion. - **Investors**: Looking for revenue generation through subscriptions and services.

Project Schedule	
Cost-Benefit Analysis	
Project Constraints	No constraints at all