Pre-Parking Software System Requirement Analysis Document

**Functional Requirements**

1. **User Registration and Authentication**: Users must be able to create accounts and log in securely via phone numbers or email addresses).
2. **Parking Spot Search and Availability:**
3. The software must allow users to search for parking spots by location, date, and time.
4. The system should show the real-time availability of parking spaces.
5. **Reservation of Parking Spots:**
6. The system must allow users to book parking spots in advance for a specific time and date .
7. It should also allow users to view the details of the parking spot they have reserved.
8. **Payment Integration:**
9. Users should be able to make payments on the software through payment gateways.
10. Display the total cost for parking, including taxes and any additional fees.
11. **Cancellation and modification of parking reservations:**
12. The System must allow users to cancel or modify their bookings with proper reason
13. **Parking Space Navigation:**
14. The system should provide users with directions to their reserved parking spot.
15. **Parking History and Profile Management**:
16. Users must have access to their reservation history.
17. Users must also be able to manage and update their profiles
18. **Bookings Notification and Confirmation:**
19. The System should remind users of their bookings with notification ahead of time.
20. Send Emails or notifications in confirmation of Bookings
21. **Online Ticket Generation**:
22. The System should be able to generate an e-ticket for a user after his payment and space reservation have been confirmed for verification at the parking lot.

**NON-FUNCTIONAL REQUIREMENTS**

1. **Performance and Scalability:**
2. The system must handle a minimum of 1000 concurrent users and scale effectively without performance degradation.
3. The page's response times should be quick (e.g., page loading, booking confirmations) even during peak demand periods.
4. **Availability and Reliability**:
5. The software must be available 24 hours a day, 7 days a week, with minimal downtime.
6. Implement **redundant databases and failover strategies** to ensure continuous service.
7. **Security:**
8. Implement strong authentication methods (multi-factor authentication for admins and users).
9. Secure data transmission through encryption (e.g., HTTPS).
10. **Usability** :
11. The interface should be intuitive and user-friendly and allow for easy navigation for both mobile and web platforms.
12. Provide clear instructions for users to complete the booking process efficiently.
13. **Compatibility**:
14. The System must be compatible with Multiple Browsers(Chrome, Opera, etc)
15. It should also be compatible with multiple operating Systems like MacOS, Windows, e.t.c.
16. The mobile app should also be compatible with multiple O.S.
17. **Maintainability**: The System must be easy to maintain and update. Codes written to create the system must be simple and modular, and most follow good development practices.
18. **Localization & Multi-Language Support:**
19. Should support **multiple languages** for a global user base
20. Parking prices should be displayed in the **user’s local currency** based on geolocation.