Here are the **functional** and **non-functional requirements** for the Electric Vehicle (EV) Service Provider system:

**2.3.1 Functional Requirements**

1. **User Registration and Management**
   * Users must be able to register for the platform by providing personal and vehicle information.
   * Admins should manage user roles and permissions (e.g., EV owners, service providers, system administrators).
2. **Service Scheduling**
   * Users should schedule appointments for EV maintenance and repair services via the platform.
   * The system should allow users to select service types, dates, and preferred locations.
3. **Charging Station Location**
   * Provide an interactive map displaying the location and availability of EV charging stations.
   * Integrate real-time updates on operational status and types of chargers (e.g., fast chargers).
4. **Feedback and Ratings**
   * Enable users to provide feedback and rate services, fostering continuous improvement.
5. **Payment System**
   * Allow users to make payments for services through integrated payment gateways.
6. **Reminders and Notifications**
   * Notify users of upcoming appointments, service updates, and reminders for vehicle maintenance.
7. **Service Provider Listings**
   * Allow service providers to list and manage their offerings, including maintenance, battery diagnostics, and software updates.
8. **Emergency Roadside Assistance**
   * Facilitate requests for emergency services via the platform.
9. **Analytics and Reporting**
   * Provide reports for system administrators on user engagement, service quality, and operational performance.

**2.3.2 Non-Functional Requirements**

1. **Performance**
   * The system should handle a high volume of concurrent users without performance degradation.
2. **Scalability**
   * The platform must be scalable to accommodate growing numbers of users and charging stations.
3. **Usability**
   * Design an intuitive user interface accessible to individuals with varying levels of digital literacy.
   * Ensure compatibility across multiple devices (web and mobile).
4. **Reliability**
   * Ensure a 99.9% uptime for critical features like service scheduling and charging station maps.
5. **Security**
   * Protect user data through secure authentication and encryption methods.
   * Implement robust measures to prevent unauthorized access and data breaches.
6. **Maintainability**
   * Ensure the system is modular and easy to update with minimal downtime.
7. **Localization**
   * Support the Ethiopian context, including local languages and geographic data.
8. **Compliance**
   * Adhere to data privacy regulations (e.g., GDPR or local laws) and industry standards for EV services.
9. **Integration**
   * Seamlessly integrate with third-party APIs for mapping, payments, and service provider databases.
10. **Accessibility**
    * Include accessibility features to accommodate users with disabilities.