Software Requirements Specification (SRS) for

Vehicle Rental System (RYDON)

GROUP 8
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1. Introduction

1.1 Purpose

The purpose of the RYDON Vehicle Rental System is to provide an efficient digital platform for managing vehicle rentals. The system enables customers to browse available vehicles, book them for a specific period, and manage their rental history. Administrators can add, update, and remove vehicles, monitor bookings, and maintain records of vehicle availability and maintenance. This SRS defines the system's functional and non-functional requirements to ensure smooth implementation and usability.

1.2 Scope

The RYDON Vehicle Rental System is a desktop-based application developed entirely in Java, with data management handled through a MySQL database. The system allows users to view available vehicles, book them for specific dates, and manage booking history. Administrators can manage vehicles, customers, and maintenance records. This system eliminates manual record-keeping, reduces administrative workload, and improves operational efficiency.

1.3 Definitions, Acronyms, and Abbreviations

Term	Definition
RYDON	Name of the Vehicle Rental System project
GUI	Graphical User Interface
SQL	Structured Query Language
DB	Database
DAO	Data Access Object
UI	User Interface

2. Overall Description

2.1 Product Perspective

The RYDON Vehicle Rental System is a standalone desktop application built using Java (Swing/AWT) for the front-end and MySQL for the back-end database. It follows the MVC (Model-View-Controller) architecture for modular design.

2.2 Product Functions

Main functionalities include viewing available vehicles, booking management, vehicle and customer management, maintenance tracking, and search/filtering capabilities.

2.3 User Characteristics

Administrators manage vehicle inventory, customer details, and maintenance records, requiring basic computer knowledge. Customers browse vehicles and request bookings using a simple desktop interface.

2.4 Constraints

- The application runs only on systems with Java Runtime Environment (JRE) installed.
- Requires a stable MySQL connection for database operations.
- Designed for single-user operation at a time.
- Data accuracy depends on correct user input.

3. Specific Requirements

3.1 Functional Requirements

1. Vehicle Management: Admin can add, update, delete, and view vehicle details.
2. Customer Management: Admin can register and update customer information.
3. Booking Management: Create and view bookings with start and end dates.
4. Maintenance Management: Log maintenance records and mark vehicles unavailable.
5. Search Functionality: Search for vehicles by brand, model, or type.
6. Data Storage: All records are stored in a MySQL database.

3.2 Non-Functional Requirements

- Performance: System should respond within 2 seconds.
- Reliability: Ensured through MySQL's consistency.
- Usability: Simple and intuitive GUI.
- Portability: Runs on any system with Java installed.
- Maintainability: Modular MVC code structure.
- Security: Admin access protected by authentication.

3.3 User Interface Requirements

The interface is built using Java Swing. Key components include a Dashboard, Vehicle Page, Customer Page, Booking Page, and Maintenance Page. Navigation is done through buttons and menus.

4. System Features

- Full CRUD operations for vehicles, customers, and bookings.
- Search and filter options for vehicles.
- Maintenance tracking feature.
- Graphical dashboard for easy access.
- Integration with MySQL.
- Entirely implemented in Java with JDBC connectivity.

5. Future Enhancements

- Addition of web or mobile interface.
- Multi-user access with roles.

• Integration of real-time GPS tracking.
• Analytical report generation.
• Data export options (CSV/PDF).

6. Conclusion

The RYDON Vehicle Rental System provides an efficient and structured approach to vehicle rental management. Developed fully in Java with a MySQL database, it simplifies bookings, inventory management, and maintenance tracking, enhancing accuracy and operational efficiency.