Garage Management System - Project Documentation

1. Project Overview

Project Name: Garage Management System

Objective: To develop a system that automates the management of vehicles, customers, and services in a garage.

Scope: The system will help in managing service records, generating invoices, and maintaining customer and vehicle data digitally.

2. Problem Statement

Manual management of garage operations leads to:

- Errors in customer and vehicle records.

- Delays in service tracking.

- Inefficient billing processes.

- Lack of proper data storage and analysis.

3. Proposed Solution

The proposed system:

- Offers digital registration of vehicles and customers.

- Tracks ongoing and completed services.

- Automatically generates bills.

- Maintains history for easy future reference.

4. Features

- Customer Registration and Management

- Vehicle Information Management

- Service Record Tracking

- Bill and Invoice Generation

- Admin Dashboard with Analytics

- Search and Filter Services

5. Technologies Used

- Frontend: HTML, CSS, JavaScript

- Backend: Python / Node.js / PHP

- Database: MySQL / MongoDB

- Hosting (optional): XAMPP / Localhost / Heroku / GitHub

6. System Architecture

Client (User Interface) -> Server (Backend Logic) -> Database (Storage)

Can be explained with a block diagram in your document.

7. ER Diagram / Database Design

Tables:

- Customers(customer_id, name, contact, email)

- Vehicles(vehicle_id, customer_id, model, number)

- Services(service_id, vehicle_id, service_type, date, cost)

- Invoices(invoice_id, service_id, total_amount, payment_status)

Include ER diagram image here if available.

8. User Roles

- Admin: Full access, user and service management.

- Staff: Add/update vehicle services.

- Customer (optional): View service and invoice history.

9. Module Descriptions

- Customer Module: Add, edit, delete customer details.

- Vehicle Module: Link vehicles to customers, manage info.

- Service Module: Record service details, costs, dates.

- Invoice Module: Generate and view invoices.

- Dashboard Module: Analytics on services, income, etc.

10. Conclusion

The Garage Management System improves efficiency by automating manual tasks. It reduces human error, speeds up operations, and provides centralized data storage. Future upgrades may include:

- SMS/Email notifications

- Mobile App integration

- AI-based service suggestions