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Client details –

Name – RKVK Automobiles

Address – Prayagraj Road, Sihipur, Jaunpur (U.P)

GSTIN – 09ABHPY1414A1ZW

Business – **Automobile Repair Shop**.

An automobile service centre typically handles a wide range of vehicle-related repair and maintenance tasks. These include periodic servicing, issue diagnosis, and replacement of damaged or worn-out parts. To streamline its daily operations, reduce paperwork, improve accuracy, and ensure accountability, our client requires a database-driven web application that enables systematic handling of appointments, services, inventory, and staff coordination. The goal of this system is to digitize the entire workflow in a secure, accessible, and structured manner, while ensuring ease of use for the reception and administrative staff.

The service centre primarily deals with local customers who bring in their personal or commercial vehicles for servicing. Although there is no need to create login systems for customers, their details must be recorded and linked to their vehicles. The application is intended to be used exclusively by two roles: **Admin** and **Receptionist**. The admin will have complete access to all modules and records, while the receptionist will handle daily operations such as appointment bookings and service logging.

**Customer and Vehicle Data Management**

The receptionist is responsible for entering the data of walk-in or returning customers. Each customer record includes essential fields such as name, phone number, address, and optionally, email. This customer is then linked to one or more vehicles. For each vehicle, the receptionist records the registration number, brand, model, year of manufacture, and fuel type (petrol, diesel, electric, etc.). This linkage ensures that every service or appointment is traceable to a specific customer and their corresponding vehicle.

This module allows the receptionist to quickly search for a vehicle or customer and view their service history. Having an organized customer-vehicle relationship in the database also ensures long-term records.

**Appointment and Service Management**

One of the key features of the application is appointment booking. When a customer visits or calls, the receptionist creates a new appointment in the system, selecting the vehicle and noting the date/time of booking, the issue reported, and any additional comments. The receptionist handling the booking is also recorded.

An appointment can later be **converted into a service** once the actual work is performed. This transformation includes the assignment of a **mechanic**, logging of **spare parts used**, and computing the total cost. The service entry includes the date of completion, total cost incurred (parts + labour), and remarks or findings noted by the mechanic or service advisor.

To ensure that each task is traceable, every service is linked back to the original appointment and the assigned mechanic. The system also allows the admin to view the service records for auditing, quality control, or generating reports.

**Mechanic Management**

The application maintains a record of all mechanics working at the service centre. Each mechanic has a profile including their name, contact number, specialization (e.g., engine repair, electrical systems, general servicing), and availability status. When a service is recorded, the receptionist or admin assigns a mechanic from this list.

This setup helps the admin distribute workload evenly and track the performance and productivity of each mechanic. In case of repeat issues or customer complaints, the responsible mechanic can be easily identified.

**Inventory and Spare Parts Management**

Managing inventory efficiently is crucial in an automobile service centre. The application includes a dedicated module for handling **spare parts and consumables** such as engine oil, brake pads, filters, spark plugs, and more. Each item in the inventory has a unique ID, name, description, quantity in stock, unit price, and the last updated timestamp.

As services are performed and parts are consumed, the system logs which parts were used, in what quantity, and deducts them from inventory automatically. This is handled through a **Service-Part** linkage table. This feature helps the admin maintain real-time visibility of the stock and plan reorders in a timely manner.

**User Roles and Security**

The application has two roles: **Admin** and **Receptionist**. The admin can add or remove users, manage mechanics, modify inventory data, view all services and appointments, and generate reports. The receptionist has permission to manage customers, vehicles, appointments, and services but cannot modify user roles or change critical configuration settings. This login is password-protected.

**Invoice Generation**

The invoice system plays a crucial role in the automobile service management application by ensuring clear and accountable financial transactions. Each invoice is generated once a service is completed, capturing key details such as the customer, vehicle, associated service, spare parts used from inventory, labour charges, taxes, and total amount payable. This ensures transparency for customers and enables streamlined revenue tracking for the business. Invoices are also linked to the receptionist or admin who processed them.

**Conclusion**

This system aims to streamline and digitize the complete workflow of an automobile service centre. From customer and vehicle management to appointment scheduling, mechanic assignment, service tracking, and inventory logging, each module plays a role in making operations efficient and transparent. The platform prioritizes ease of use for receptionists while giving full control and visibility to the admin.

This centralized, role-based, and data-driven solution ensures minimal dependency on paper records and enables quick and accurate reporting, ultimately improving customer satisfaction and business efficiency.

**Summary**

* Add a new customer with contact details
* Register one or more vehicles under a customer
* Search and view customer or vehicle records
* View complete service history of a vehicle
* Book an appointment for a vehicle service
* Record appointment details (date, time, issue reported, comments)
* Convert an appointment into a service entry
* Assign a mechanic to a specific service
* Log service details, findings, and remarks
* Add spare parts used during service
* Automatically deduct spare parts from inventory
* View or edit mechanic profiles and availability
* Add, edit, or delete spare parts in inventory
* Track current inventory levels and auto-update on usage
* Generate service invoices after completion
* Include parts cost, labour charges, and taxes in invoice
* Record and update payment status in invoices
* Admin can create or remove user accounts
* Admin can manage inventory and mechanics
* Admin can generate service and invoice reports
* Receptionist can manage customers, vehicles, appointments, and services
* Role-based login access with secure password authentication

**Tables Used**

* **Users**: Stores login credentials, roles (Admin/Receptionist), and contact details.
* **Customers**: Holds personal details of vehicle owners.
* **Vehicles**: Stores vehicle information and links to the customer who owns it.
* **Mechanics**: Contains mechanic details such as name, specialization, and contact info.
* **Appointments**: Records scheduled appointments between customers and mechanics.
* **Services**: Logs service details, including issues, labour, parts used, and the responsible mechanic.
* **Inventory**: Maintains stock of parts, their quantities, and pricing.
* **Invoices**: Keeps invoice records, including billing amount, service reference, and payment status.