

CASE STUDY

ACR MECHANIC PROJECT

Car Service Booking & Parts eCommerce Platform

Project Overview

- The ACR Mechanic project is a full-featured web platform combining car service booking and car parts eCommerce.
- Developed for a single car service center, it allows user to:
 - Book car services online.
 - Purchase spare parts and accessories.
 - Combine service and parts booking.



Objectives & Goals

- ❑ Simplify the process of booking car maintenance and services.
- ❑ Provide a one-stop shop for car parts and accessories.
- ❑ Allow users to manage their booking, invoices, and purchases online.
- ❑ Enable Admin to control services, prices, and inventory efficiently.



Challenges & Solutions

□ Challenges

- Integrating service booking with product purchase flow.
- Managing different car brands, models, and fuel types dynamically.
- Designing an easy-to-use backend for admins.
- Implementing secure payment gateway and OTP verification.

□ Solutions

- Used modular Laravel architecture for flexibility.
- Created dynamic pricing system based on brand/model.
- Integrated SBI Payment Gateway and OTP API.
- Built clean and responsive Bootstrap frontend.

Frontend Development

- Frontend includes all user-facing pages and booking/shop flows:
 - Home, Services, and Services Center pages.
 - Product listing and detailed product pages.
 - Cart, Checkout, and Payment gateway integration.
 - Login, Register, Forgot Password, and Static pages.



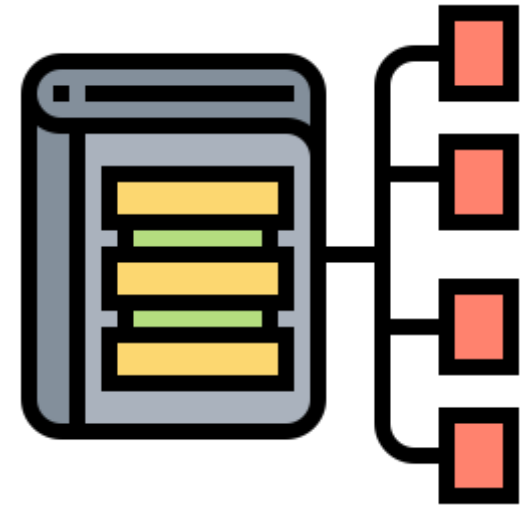
Backend Development

- Admin panel developed using Laravel with features like:
 - Manage Users, Services, products, and Orders.
 - Update Service Prices by Brand/Model/Fuel Type.
 - Manage Time Slots, Home Page Sections, and Setting.
 - Send Automated Emails for Bookings, Cancellations, and Notifications.
 - Control over GST, social links, and contact details.



System Architecture Overview

- Architecture Layers:
 - Presentation Layer: Bootstrap-based Frontend UI.
 - Application Layer: Laravel Controllers and Middleware.
 - Data layer: MySQL relational database.
 - Integrations: SBI Payment Gateway, OTP API, Google Reviews.
- This layered design ensures maintainability and scalability.



User Panel Features

- ❑ Profile management and personal info editing.
- ❑ View and manage bookings and purchased products.
- ❑ Cancel or reschedule services (up to 24 hours before schedule).
- ❑ Download invoices in PDF format.
- ❑ Guest checkout and user registration post-purchase.



Admin Panel Capabilities

- ❑ Monitor all registered users and their activities.
- ❑ Manage all service packages and shop products.
- ❑ Handle brand logos, service slots, and appointments.
- ❑ Access and export order data and booking reports.
- ❑ Control homepage banners, text, and exclusive offers.



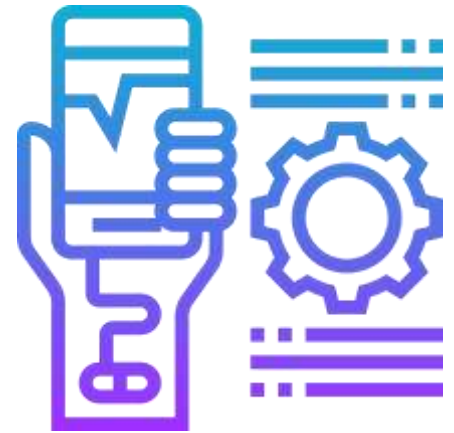
Key Features

- ❑ Contact form with user message submission.
- ❑ Add-to-Cart to Payment flow with guest login support.
- ❑ Cancel Order / Rearrange Booking.
- ❑ Google Reviews (4+ stars) integration on Home page.



Technologies Used

- ❑ **Framework:** Laravel (PHP)
- ❑ **Database:** MySQL
- ❑ **Frontend:** Bootstrap, HTML5, CSS3, JS
- ❑ **APIs:** Google Reviews, OTP API, SBI Payment Gateway
- ❑ **Version Control:** Git
- ❑ **Hosting:** Scalable shared or VPS environment.



Database Design

- MySQL Database with normalized schema including tables for:
 - Users, Roles, Permission
 - Services, Packages, and Pricing
 - Products, Categories, Brands, Models
 - Orders, Bookings, Invoices
 - Reviews and Settings

- Relationship designed for efficient data management.



Integrations & Security

- ❑ SBI Payment Gateway integration for secure transactions.
- ❑ OTP-based authentication for login and verification.
- ❑ Google Reviews API for displaying real-time reviews.
- ❑ Secure user data handling using Laravel middleware and validation.



Future Enhancements

- ❑ Multi-service center booking feature.
- ❑ Advanced analytics dashboard for admin.
- ❑ Mobile app integration (React Native / Flutter).
- ❑ Loyalty program and referral system.
- ❑ AI-based service recommendation engine.



Inspiration & Design Reference

- Design inspired by GoMechanic but customized for ACR Mechanic's branding.
- UI/UX designed in Figma focusing on user experience and clean navigation.
- Color Scheme: Corporate Blue with modern visual hierarchy.



Conclusion

- ❑ The ACR Mechanic Laravel platform successfully combines eCommerce and service booking.
- ❑ It delivers an efficient system for both customers and administrators.
- ❑ Key Takeaways:
 - Scalable and maintainable Laravel architecture.
 - Seamless integration of booking, shopping, and payment.
 - Enhanced user experience and automation.
- ❑ ACR Mechanic sets a foundation for future automotive service innovation.

