



25th JUNE 2026

Pearl Organisation

CASE STUDY

ZIIP

WASH

In this case study, all the challenges we faced and how we fixed them to deliver successfully are mentioned





THE VISION

Becoming a trusted global partner in building a smarter, connected future

WHY LONG-TERM PLANNING IS IMPORTANT?

- A structured plan aligns resources, time, and effort toward measurable objectives.
- It ensures that every action contributes to long-term success and profitability

- A shared vision unites teams, reduces conflicts, and builds synergy across departments, ensuring everyone works toward the same destination



- Employees and stakeholders understand why the business exists and what it aims to accomplish, fostering motivation and commitment

- Strategic thinking encourages innovation, helping businesses adapt to market changes and stay competitive.



This case study report presents a detailed analysis of the ZIIP WASH project, focusing on its backend and frontend modules. The report highlights the functionality of each module, the issues faced during implementation, and potential solutions. The study spans across eight major modules:

1. **Services Module.**
2. **Booking Management System.**
3. **ZIP Code / Time Slots Module.**
4. **Vehicle Mapping (Brands Module).**
5. **Payment & Bank Module.**
6. **User Management System.**
7. **Communication & Engagement Module.**
8. **CMS & Brand Management Module.**

FIRST HIGHLIGHT: A PROJECT DELIVERY

In this case study, all the challenges we faced and how we fixed them to deliver successfully are mentioned.

We have prepared this case study on the basis of six factors:

Problem Statement | Findings | Allotment | Execution | Testing | Delivery

This structure makes your case study clear, logical, and professional.

It shows not only what was done but also how and why it worked.

“Communication is always clear, and

CLIENT FEEDBACK

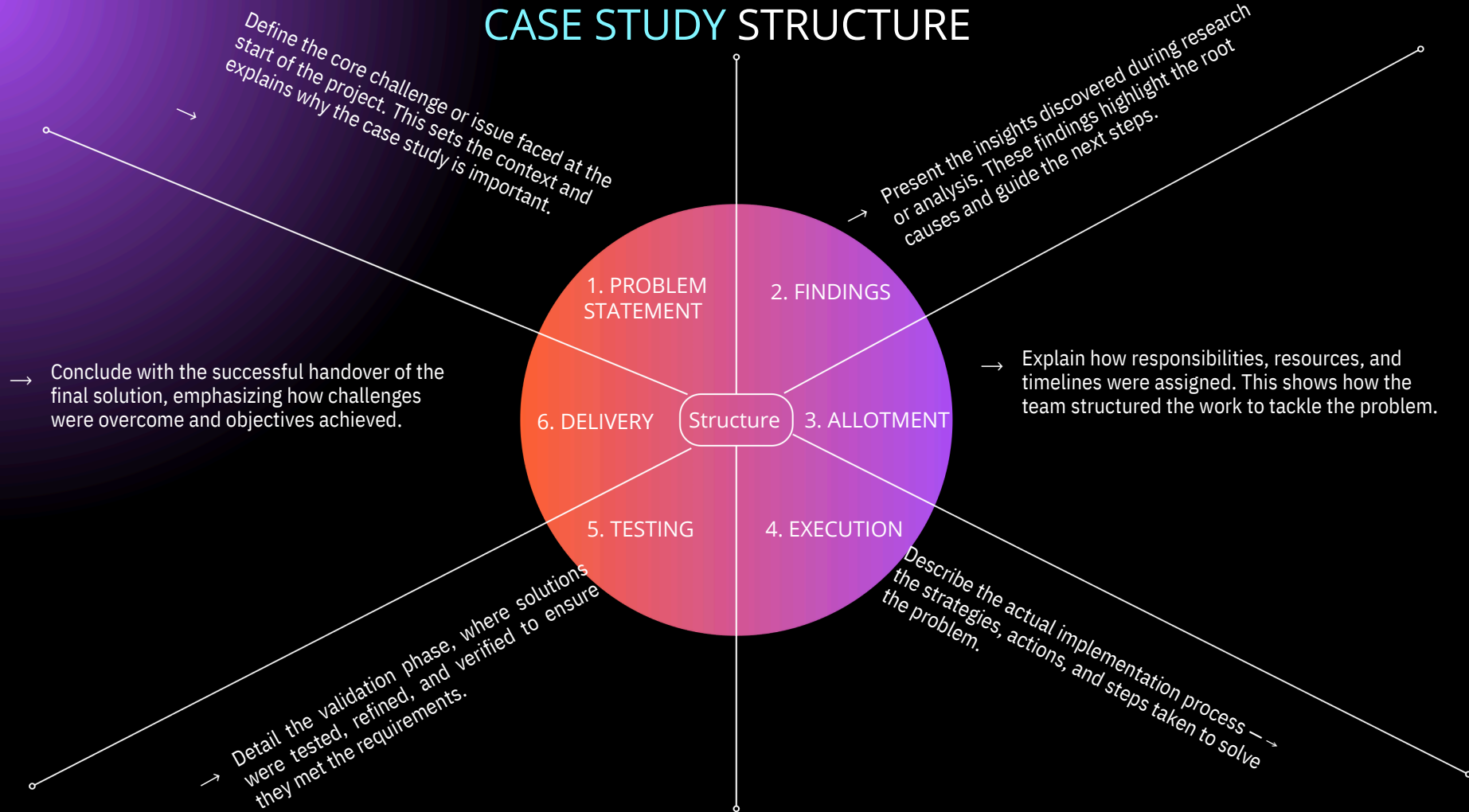
PROJECT BACKGROUND

The Challenge We Were Brought In to Solve

The client approached **Pearl Organisation** for new website **ZIIP WASH** is a car wash service platform where customers book services online, select time slots, and complete payments. As the platform scales across multiple cities, vehicle types, service combinations, and booking conditions, operational complexity grows rapidly.



CASE STUDY STRUCTURE



1. PROBLEM STATEMENT

ZIIP WASH is a car wash service platform where customers book services online, select time slots, and complete payments. However, the operational complexity increases as the platform scales across multiple cities, vehicle types, service combinations, and booking conditions.

Online Booking

Customers select services and time slots digitally

Seamless Payment

Integrated payment flow at point of booking

Multi-City Reach

Expanding across locations and vehicle types

How to design and manage a centralized admin system that can efficiently control services, bookings, users, payments, and operational logistics (time slots, zip codes, vehicle mapping) in a scalable and controlled way?

i. Managing Dynamic Service Offerings

Services aren't static. Customers combine **basic washes** with **add-ons** — wax, interior cleaning, tire shine — creating hundreds of possible combinations.



Basic Services

Core wash packages by vehicle type

Add-On Services

Optional extras that stack on any base package

Dynamic Pricing

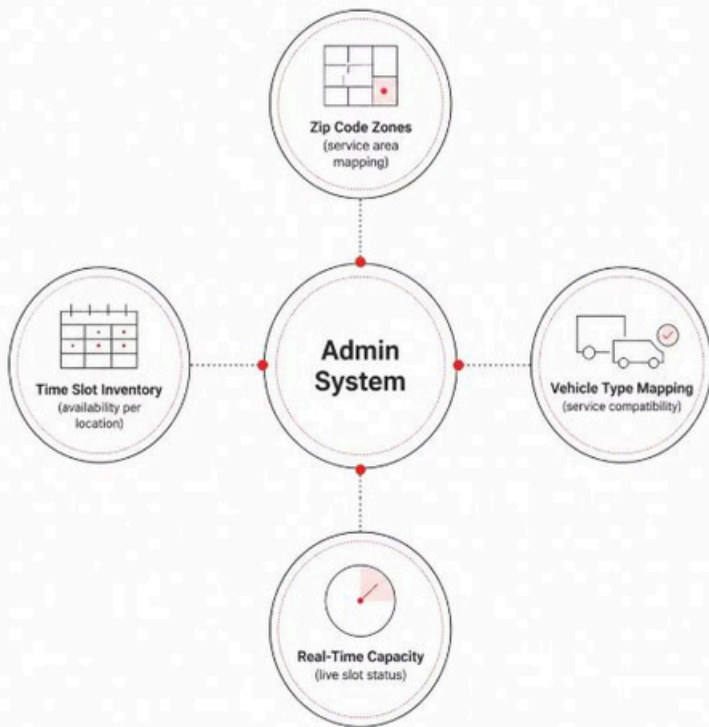
Combinations must resolve to correct totals

ii. Booking Lifecycle Complexity

Each stage introduces failure points — payment errors, slot conflicts, no-shows, and cancellations. The admin system must track, intervene, and resolve issues at every step without manual dependency.



iii. Location & Time Slot Availability



Services aren't static.

Customers combine **basic washes with add-ons** — wax, interior cleaning, tire shine — creating hundreds of possible combinations.

The admin must enforce these rules automatically — preventing bookings that can't be fulfilled and surfacing capacity gaps to operations teams.

❏ Mismatched availability is a leading source of customer complaints and operational waste.

iii. Location & Time Slot Availability



User Management

Control customer accounts, provider profiles, and access permissions across cities



Policy & Content

Update terms, service descriptions, pricing rules, and promotional content centrally



Operational Policies

Enforce cancellation windows, refund rules, and service-level agreements platform-wide



iv. Reducing Manual Dependency

Before Automation

- Manual slot allocation by ops staff
-
- Phone-based booking confirmations
-
- Spreadsheet-driven payment reconciliation
-
- Reactive issue resolution

The Goal

- Automated availability enforcement
- Self-serve booking and payment flow
- Real-time dashboards and alerts
- Proactive operational intelligence

2. FINDINGS

i. Fragmented Service Structure

Services and Additional Services exist as separate entities but share tight, implicit dependencies — creating a brittle architecture that is difficult to extend or scale.

The Problem

- Base services and add-ons are separated without enforced hierarchy
- No modular structure for future content types (images, FAQs)
- Dependencies are implicit rather than explicitly modeled

Operational Impact

- Adding new service tiers requires changes across multiple modules
- Scaling content types (e.g., service images, FAQ attachments) requires rework
- Risk of data inconsistency between base and add-on records

ii. Booking Complexity & Manual Payment Verification

The booking lifecycle depends on manual human intervention at its most critical stage payment validation. This introduces fraud risk, processing delays, and operational inconsistency.



Manual Screenshot Verification

Bookings rely on admins manually reviewing uploaded payment screenshots — a process that is slow, error-prone, and impossible to audit reliably at scale.

No Automated Payment Validation

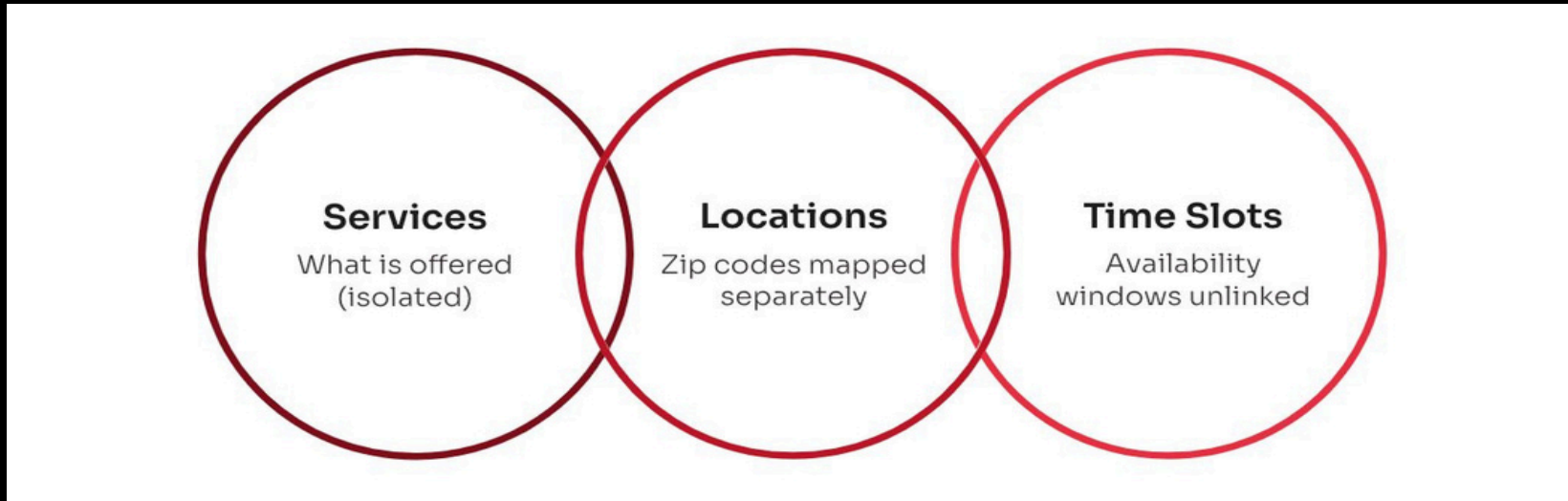
There is no programmatic payment confirmation flow. Status transitions (pending → confirmed) are manually triggered, leaving the system vulnerable to human error and potential fraud.

Status Inconsistency Risk

Without automated state management, booking statuses can become inconsistent — leading to customer confusion, double-bookings, or revenue leakage.

iii. Location & Availability Constraints

Zip codes and time slots exist in the system but operate in isolation. The absence of a dynamic availability engine means the platform cannot intelligently match services, locations, and time windows..



Without intersection logic, the system cannot prevent overbooking, enforce location-specific service rules, or dynamically surface available slots based on real-time demand limiting both operational efficiency and customer experience.

iv. User Management Limitations

Critical Gaps

- Admins can block or unblock user accounts.
- Basic account status control exists.

Critical Gaps

- No behavioral scoring or activity-based risk signals
- Password reset requires manual admin intervention a security bottleneck
- No audit trail of user activity or engagement patterns

Why This Matters

Manual password resets create a dependency on admin availability and introduce security risk. Without behavioral scoring, the platform cannot proactively identify suspicious activity, power users, or churn risk — limiting both security posture and product intelligence.

v. Static Content Management

Testimonials, team profiles, and policy pages are managed as static CMS-like modules. While functional, they lack the flexibility, versioning, and workflow controls needed for a production-grade content operation



Testimonials

Stored statically with no moderation workflow, approval process, or structured schema for filtering by service or rating.



Team Profiles

Team member data is hard-coded or manually edited without a structured admin interface for updates, scheduling, or service assignment.



Policies

Policy content lacks version control, making it difficult to track changes, enforce compliance, or display the correct policy version to users.



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vi. Reporting & Insights: The Missing Layer

The platform currently has no centralized analytics dashboard. Decision-makers lack visibility into the metrics that matter most for operational health and growth.

Booking Conversion Rate

Track the funnel from service view → booking initiated → booking confirmed. Identify drop-off points.

Peak Booking Hours

Understand demand patterns by hour and day to optimize staffing, availability windows, and promotions.

Popular Services

Rank services by bookings, revenue, and repeat rate to inform inventory, pricing, and marketing decisions.

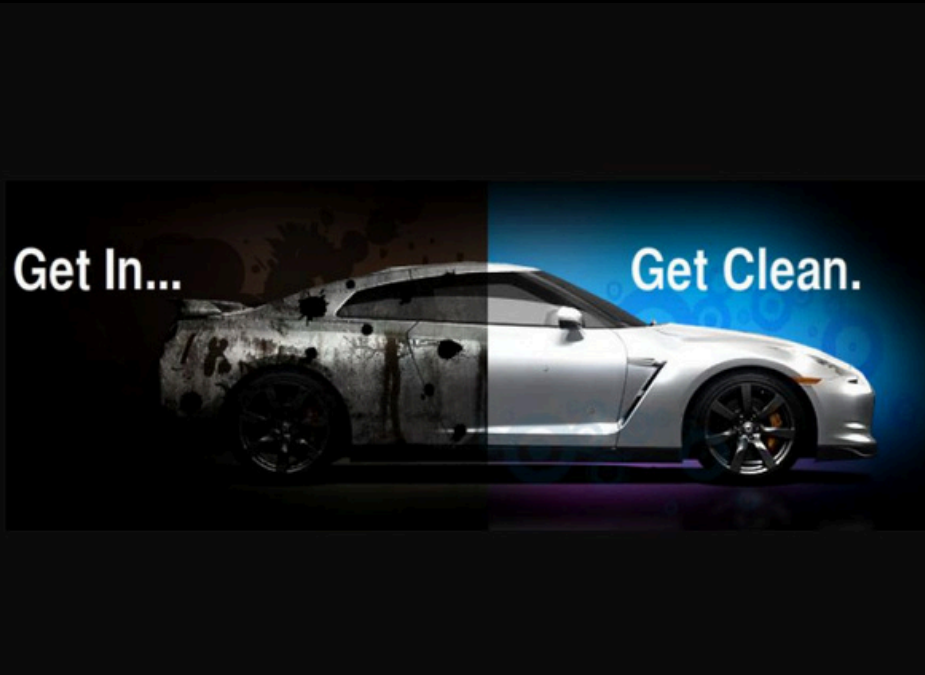
Payment Success Ratio

Monitor payment completion rates to detect friction in the checkout flow and reduce abandoned bookings.

3 . ALLOTMENT

i. Modular Car-Wash Booking Platform

A system architecture overview eight functional modules, each with clear responsibilities, working together to power a seamless booking experience.



To solve the above issues, the system is structured into functional modules with clear responsibilities:

ii. Eight Modules, One Platform

The platform is organized into distinct engines, each owning a specific domain of responsibility.

Core Service Engine

Bases services, add-ons, and future media/FAQ extensions

Location & Availability

Zip codes, time slots, and serviceability logic

Vehicle Mapping

Brands, models, and service customization

Booking Management

Status tracking, payments, and admin controls

Payment & Bank

UPI/QR payments and booking validation

User Management

Customer tracking, blocking, and access controls

Communication & Engagement

Enquiries and subscriber management

CMS & Brand Management

Team, testimonials, and policy content

iii. Core Service Engine.

The foundation of every booking defining what can be sold and how it's presented.



Services Module

Defines base car wash types (e.g., Basic, Premium, Deluxe) with pricing and descriptions.

Additional Services

Add-on options linked to base services — wax, interior detailing, tire shine — enabling upsells at checkout.

Future Enhancements

Planned sub-modules include an **Image Gallery** for service visuals and an **FAQ module** for customer clarification.

iv. Location & Availability Engine

Three Pillars of Availability : A booking is only valid when all three dimensions intersect:



Zip Code Module

Defines which geographic areas are serviceable by each location.

Time Slots Module

Manages availability windows — duration, capacity, and blackout periods.

Service Intersection

Availability = Service + Zip Code + Time Slot. All three must align for a slot to appear.

v. Vehicle Mapping System

Service customization starts with knowing the vehicle. This system ensures the right options are presented based on make and model.



Brands Module

Defines which geographic areas are serviceable by each location.

Vehicle Models Module

Models are linked to their parent brands, creating a structured hierarchy for accurate vehicle identification.

Service Customization

Vehicle type drives service recommendations — an SUV may require different pricing or add-ons than a compact sedan.

vi. Booking Management System

The central nervous system of the platform every reservation flows through here.



01

Pending

Booking received, awaiting admin review and payment verification.

02

Approved

Payment confirmed via screenshot; slot reserved and customer notified.

03

Rejected

Booking declined — slot released, customer informed with reason.

viii. Payment & Bank Module

The platform uses a pre-configured bank settings module to manage digital payments:

UPI / QR-Based Payments

- **Pre-set payment amounts** tied to each service package
- **UPI / QR code** generation for frictionless checkout.
- **Booking confirmation** payment validation triggered only after

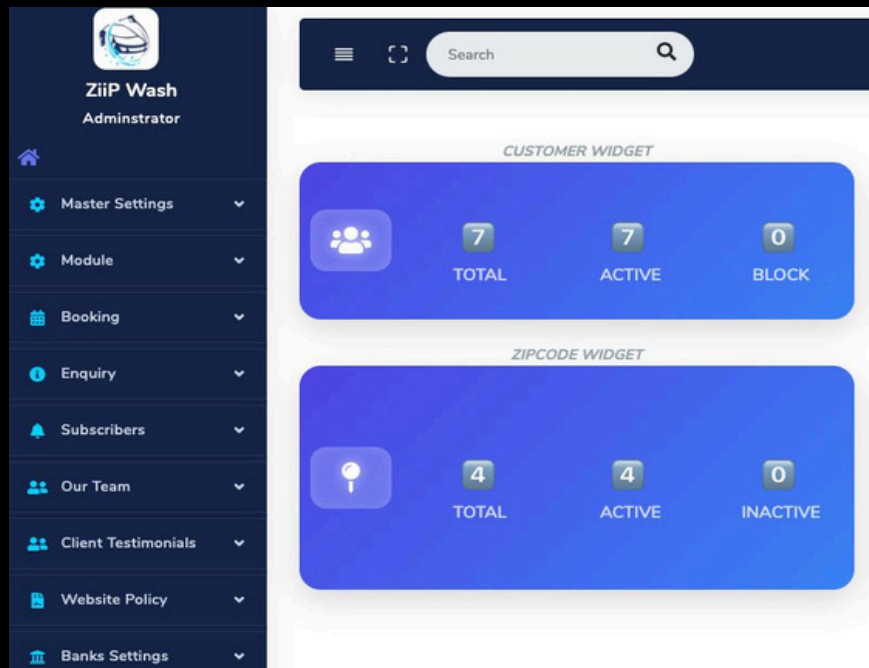
Why Manual Verification?

Screenshot-based approval provides a lightweight audit trail for UPI transactions where automated webhook integration is not available — balancing simplicity with accountability.

ix. User Management System

Full Customer Lifecycle Control

Every registered user is tracked and manageable from a centralized admin interface.



Customer Registry

Complete record of all registered users with booking history.

Block / Unblock

Instantly restrict or restore access for flagged accounts.

Password Reset

Admin-initiated reset controls for account recovery scenarios.

x. Communication & Engagement

Two modules keep the relationship with customers alive

Enquiry Module

Customers can submit questions or service requests. Admins receive and respond to queries, creating a traceable support thread.

Subscribers Module

A newsletter database for promotional campaigns, seasonal offers, and service updates — driving repeat bookings and customer retention.

 Together, these modules transform one-time visitors into engaged, repeat customers.

xi. CMS & Brand Management

The final layer content, credibility, and compliance all managed without developer involvement.



Team Module

Display staff profiles and roles, building trust and transparency with customers.



Testimonials Module

Curate and publish customer reviews as social proof to boost conversion rates.



Policy Module

Manage terms of service, privacy policies, and cancellation rules — all editable from the admin panel.

Platform Summary: Eight tightly scoped modules, each independently maintainable, together delivering a complete, production-ready car-wash booking experience.

4 . EXECUTION

Every great project runs on clear leadership and defined ownership. Here's how our team is structured for maximum impact.

THE TEAM



Arif Ansari / Ajay Bagwari

PM / AM

Steering scope, resources, and stakeholder communication.



Shubham Thapa

Tech Lead (Development)

Architecting backend infrastructure and core system logic.



Prachi

Backend Developer

Handled complete backend development, covering all modules and core functionalities.



Akhilesh Dabral

Frontend Developer

Crafting responsive, user-centric interfaces. intuitive, accessible, and adaptive across devices

Four Phases to Full Deployment

Each phase builds on the last, ensuring a stable foundation before introducing complexity.

PHASE 1 : Core Setup

- . Implement Services, Brands, Models
- . Setup Zip Code + Time Slot structure
- . Build basic booking flow

PHASE 2 : Operational Control Layer

- . Add booking management dashboard
- . Integrate payment verification (manual → semi-automated)
- . User management system activated

PHASE 4 : Core Setup

- . Implement Services, Brands, Models
- . Setup Zip Code + Time Slot structure
- . Build basic booking flow

PHASE 3 : Expansion Layer

- . Additional Services integration
- . Enquiry system + Subscribers module
- . CMS modules (Team, Testimonials, Policy)

PHASE 1

Core Setup :

Establish the data model and booking mechanics that everything else depends on.

The screenshot shows the ZiiP Wash Administrator interface. The sidebar on the left contains the following menu items: Master Settings, Module (highlighted with a red box), Booking (highlighted with a red box), Enquiry, Subscribers, Our Team, Client Testimonials, Website Policy, Banks Settings, and Users. The main dashboard area features six widgets, each with a red border, displaying the following data:

Widget	Icon	TOTAL	ACTIVE	INACTIVE
CUSTOMER WIDGET	People	7	7	0
SERVICES WIDGET	Gear	4	2	2
BRANDS WIDGET	Car	2 4	2 4	0
ZIPCODE WIDGET	Location Pin	4	4	0
BOOKING WIDGET	Calendar	10	0	5
ENQUIRY WIDGET	Info	CONSULTANT 2, GetInTouch 4	READ 2	UNREAD 0, UNREAD 2

Establish the data model and booking mechanics that everything else depends on.

[HOME](#)[ABOUTUS](#)[OURSERVICES](#)[BOOKSERVICE](#)[CONTACTUS](#)[Dashboard](#)[Logout](#)

INTERIOR CLEANING NEW

Deep cleaning & sanitization for your car interior at your doorstep.

[📅 BOOK NOW](#)



HOMEABOUTSOURSERVICESBOOKSERVICECONTACTUS

DashboardLogout

DOORSTEP CAR WASH SERVICES

Professional car wash at your home. Fast, affordable, and free service

BOOK NOW

Book Your Wash

123

Select a date and time that works for you

Preferred date

Wednesday 22 July 2026

Available time slots

16:30

CancelContinue

Trusted Brands





Book Your Wash

1

2

3

Your vehicle and service

Service

Only Exterior Foam Wash (45min) [Base Price: ₹250]

Vehicle brand

Audi

Select model

PEARL VOLVO 4X4

 Vehicle type: PEARL VOLVO 4X4

Additional options (HTVA)

☐ ENGINE STEAM WASH ₹200/-

← Back

Continue →



Book Your Wash

1

2

3

Review & Confirm Booking

Service: Only Exterior Foam Wash (45min)

Vehicle: PEARL VOLVO 4X4

Brand: AUDI

Date: 2026-07-30

Time: 13:30

Total Charges including additional services

Total including (Base charge: ₹ 250) ₹250

Contact Details

Full Name

Ziip Wash

Email *

ziipwash@admin.com

Phone

9000000001

Zip Code

Enter zip code

Service Address

Payment Method

 Water and electricity must be provided by you at service location.

☐ I confirm water & electricity will be available at the location.

← Back

Confirm booking

PHASE 2

PEARL
ORGANISATION™

With the core booking flow live, **Phase 2** introduces the tools your team needs to manage, verify, and control every booking

Payment Method :

Full Name
ZiIP Wash

Email
ziipwash@admin.com

Phone
9000000001

Zip Code
Enter zip code

Service Address
dehradun

Payment Method
BHIM (BHARAT INTERFACE FOR MONEY)

Scan QR to Pay



Scan QR Code and Pay

Upload Payment Screenshot

Choose file No file chosen

⚠ Water and electricity must be provided by you at service location.

☐ I confirm water & electricity will be available at the location.

← Back Confirm booking

Payment Verification :

Upload Payment Screenshot

Choose file No file chosen

⚠ Water and electricity must be provided by you at service location.

☐ I confirm water & electricity will be available at the location.

← Back Confirm booking

User Management System

Activate customer and staff account management with role assignment.



ZiP Wash
Administrator

- Master Settings
- Module
- Booking
- Enquiry
- Subscribers
- Our Team**
- Manage Team
- Client Testimonials
- Website Policy
- Banks Settings
- Users

Search

GOTO WEBSITE

Home | Our Team | ADD

Fullname

Enter Full Name

Designation

Enter Designation

Photo

Choose file No file chosen

Allowed: JPG, JPEG, PNG, MP4, WEBP, IMAGE/PNG

Save

Home | Our Team | List

Show 10 entries

Search:

Sno.	Photo	Fullname	Designation	Status	Action
1		Mr VSR	Service Advisor	☒	Edit Delete
2		Mr. Ajay	Diagnostic Technician	☒	Edit Delete
3		Mr. Anif	Lead Machenic	☒	Edit Delete

Showing 1 to 3 of 3 entries

Previous 1 Next

Expansion Layer:

Scale the platform's reach and content capabilities to support growth and deeper customer engagement.

i. AdditionalServicesIntegration

The screenshot displays the ZiiP Wash Administrator interface. The sidebar on the left contains navigation options: Master Settings, Module, Services, Additional Services, Vehicle Brands, Vehicle Model, Zip Code, Time Slots, Booking, Enquiry, Subscribers, Our Team, Client Testimonials, and Website Policy. The 'Additional Services' option is highlighted in the sidebar.

The main content area shows the 'Module > Additional Services' section. It includes a form to add new services with a dropdown menu to select services, a text input for 'Enter Additional Services', a 'Price' input, and a 'Submit' button. A red box highlights the 'Submit' button.

Below the form is a table listing existing services. The table has columns for Sno., Services, Additional options, Price, and Status. The table contains 8 entries, each with a service name, a price, and a status toggle. A red box highlights the table content.

Sno.	Services	Additional options	Price	Status
1	Basic Interior & Exterior (2hr)	Dirty Vehicle Supplement	100 One Hundred Rupess	☐
2	Basic Interior & Exterior (2hr)	Pet Hair Supplement	250 Two Hundred Fifty Hundred Rupess	☐
3	Basic Interior & Exterior (2hr)	Engine Cleaning	500 Five Hundred Rupess	☐
4	Basic Interior & Exterior (2hr)	Seat Cleaning (fabric/leather/alcantara)	300 Three Hundred Rupess	☒
5	Basic Interior & Exterior (2hr)	Roof Cleaning	500 Five Hundred Rupess	☒
6	Basic Interior & Exterior (2hr)	Engine Cleaning (steam)	200 Two Hundred Rupess	☒
7	Basic Interior & Exterior (2hr)	White Dashboard And Door Cleaning	200 Two Hundred Rupess	☒
8	Only Exterior Foam Wash (45min)	Engine Steam Wash	200 Two Hundred Rupess	☒

Showing 1 to 8 of 8 entries

Previous 1 Next

Enquiry + Subscribers Module

Capture inbound leads through an enquiry system and grow your audience with a subscribers module.

The screenshot displays the ZilP Wash Administrator interface. The sidebar on the left contains navigation options: Master Settings, Module, Booking, Enquiry, Subscribers (highlighted with a red box and arrow), Manage Subscribers (highlighted with a red box and arrow), Our Team, Client Testimonials, Website Policy, Banks Settings, and Users. The top navigation bar shows the breadcrumb path: Home | Subscribers | Manage Subscribers. Below this, there is a form to add a new subscriber with an 'Email' field and 'Filter' and 'Save' buttons. The main content area features a table of subscribers with columns for Sno., Email, Subscriber Status, and Date. The table lists 10 subscribers, all with 'Subscriber Status' set to 'On' (indicated by a green toggle switch). The bottom of the page shows pagination controls: 'Showing 1 to 10 of 27 entries', 'Prev', '1', and 'Next'.

Sno.	Email	Subscriber Status	Date
1	[Redacted]	On	06 Jul 2026 12:39 PM
2	[Redacted]	On	18 May 2026 07:09 PM
3	[Redacted]	On	18 May 2026 06:29 PM
4	[Redacted]	On	18 May 2026 06:12 PM
5	[Redacted]	On	13 May 2026 02:59 PM
6	[Redacted]	On	29 Apr 2026 05:18 PM
7	[Redacted]	On	29 Apr 2026 03:21 PM
8	pearl@zpg.com	On	29 Apr 2026 03:03 PM
9	[Redacted]	On	29 Apr 2026 02:46 PM
10	[Redacted]	On	29 Apr 2026 02:44 PM

CMS Modules:

Empower non-technical teams to manage Team profiles, Testimonials, and Policy pages directly.

The screenshot displays the ZiiP Wash Administrator interface. On the left is a dark sidebar with a menu. The main content area is divided into two sections: 'Home | Client Testimonials | ADD' and 'Home | Client Testimonials | Manage'.

Left Sidebar Menu:

- ZiiP Wash Administrator
- Master Settings
- Module
- Booking
- Enquiry
- ALL Enquiries
- Subscribers
- Our Team
- Client Testimonials
- Manage Testimonials
- Website Policy
- Manage Term and Condition
- Manage Privacy & Policy
- Banks Settings
- Users

Home | Client Testimonials | ADD Section:

This section contains a form for adding a new testimonial. It includes input fields for 'Fullname', 'Location', and 'Message'. There is a 'Photo' upload section with a 'Choose file' button and a note 'No file chosen'. Below the form is a 'Save' button.

Home | Client Testimonials | Manage Section:

This section displays a list of testimonials. It includes a search bar, a 'Show' dropdown set to '10 entries', and a table of testimonials.

Sno.	Photo	Fullname	Location	Message	Status	Action
1		Mr. Black	India	Booked a doorstep car wash and the service was amazing! The team arrived on time and my car looks like new again.	☒	Edit Delete
2		Mrs. White	India	I had an incredible experience with this doorstep car wash service! The team arrived right on time and transformed my car—it looks brand new! The level of detail and care they put into the job was beyond my expectations. Highly recommend!	☒	Edit Delete

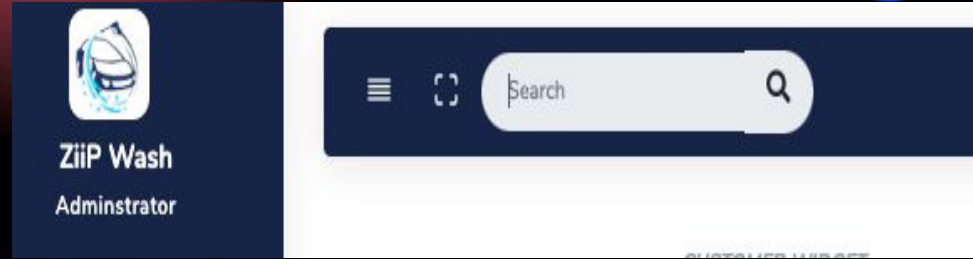
Showing 1 to 2 of 2 entries

Navigation: Previous 1 Next

Admin Optimization:

Advanced Search Filters

. Equip admin users with powerful filters across the booking module — by date, service, status, location, and more to find any record instantly.



Status Workflow Standardization

. Define and enforce a consistent booking status lifecycle across the platform, reducing ambiguity and manual follow-ups.

 A screenshot of the ZiiP Wash Adminstrator interface showing a search form. The form has four input fields: "Email" with the placeholder "Enter email address.", "Phone" with the placeholder "Enter phone no.", "Status" with a dropdown menu showing "All", and "Limit" with a dropdown menu showing "10". Below the input fields are two buttons: "Filter" (blue) and "Reset" (grey).

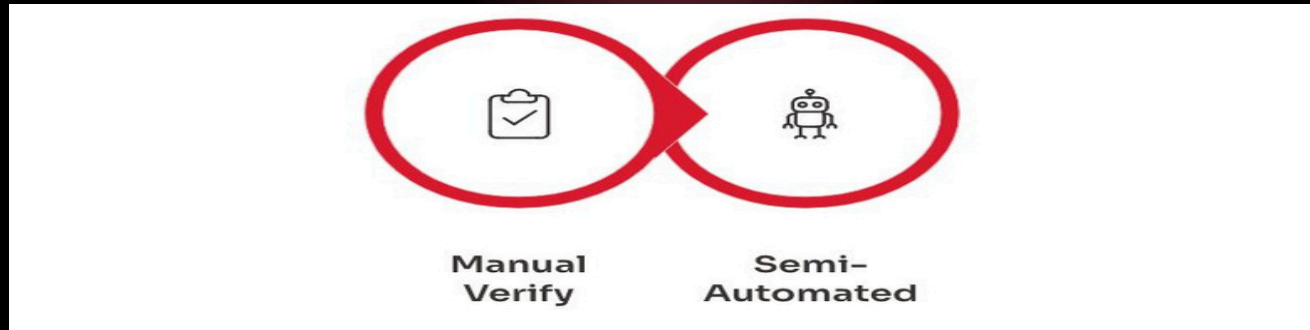
Role-Based Admin Access

. Scope out granular permission levels for different admin roles. Flagged as a future enhancement to align with organizational growth.

Photo	Fullname	Designation	Status	Action
	Mr. VSR	Service Advisor	☒	Edit Delete
	Mr. Ajay	Diagnostic Technician	☒	Edit Delete
	Mr. Anil	Lead Mechanic	☒	Edit Delete

Payment Verification: Manual → Semi-Automated

Payment verification evolves in Phase 2, reducing manual effort as transaction volume grows.



ZiiP Wash Administrator

Master Settings
Module
Booking
Enquiry
Subscribers
Our Team
Client Testimonials
Website Policy

Search

GOTO WEBSITE

Banks Settings | Banks | QR Code

NOTE: Amount must be set exactly same as QR Code (Amount)

--Select Bank--

₹ Enter set amount

Upload Bank QR Code allowed filetype (png / jpeg / jpg).

Choose file No file chosen

Submit

Sno.	QR Code	QR Amount SET	Payment Type	Status
1		50	BHIM (Bharat Interface for Money)	

Showing 1 to 1 of 1 entries

Previous 1 Next

Services:

Basic Interior & Exterior (2hr):

🚗 BASIC INTERIOR & EXTERIOR (2HR)

📍 On-Site Service Available

STARTING FROM

₹ 350 (Three Hundred Fifty Hundred Rupees Only)



Certified Experts
10+ Years Experience



Eco-Friendly
Water Recycling System

[📅 BOOK NOW](#)[📞 CALL FOR DETAILS](#)

📋 OUR SERVICES

Only Exterior Foam Wash (45min)

Gives a shining look Glass cleaning Tire polish

₹250/-

🛠️ ADDITIONAL SERVICES

Seat Cleaning

Roof Cleaning

Engine Cleaning (steam)

White Dashboard And Door

Only Exterior Foam Wash (45min) Method :

🚗 ONLY EXTERIOR FOAM WASH (45MIN)

📍 On-Site Service Available

STARTING FROM

₹ 250 (Two Hundred Fifty Hundred Rupees Only)



Certified Experts
10+ Years Experience



Eco-Friendly
Water Recycling System

[📅 BOOK NOW](#)[📞 CALL FOR DETAILS](#)

1. Gives a shining look
2. Glass cleaning
3. Tire polish

📋 OUR SERVICES

Basic Interior & Exterior (2hr)

Complete vacuuming Black Dashboard and door pad polish Exterior premium foam wash Tire polish

₹350/-

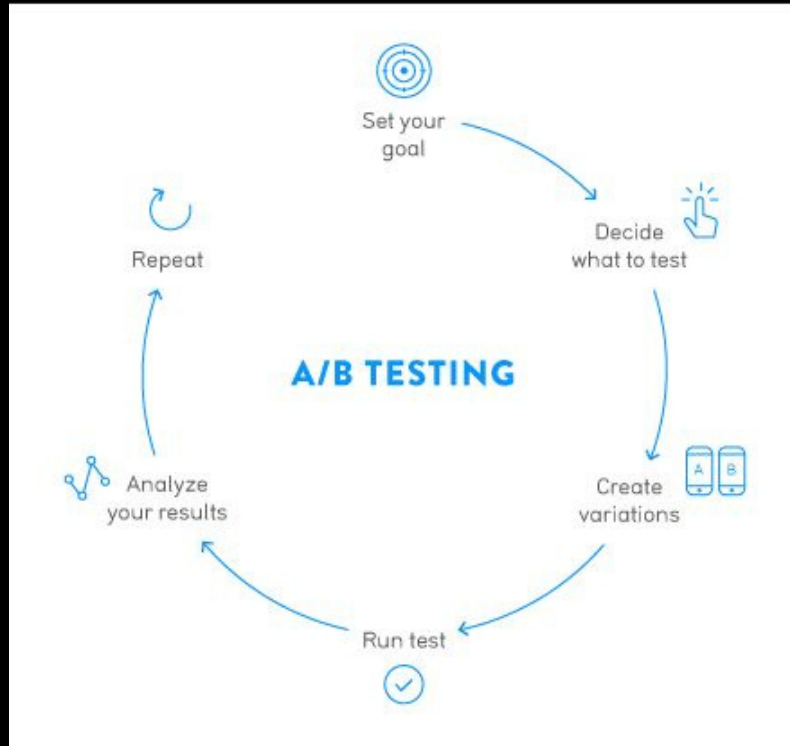
🛠️ ADDITIONAL SERVICES

Engine Steam Wash

₹200/-

5. TESTING(AB)

A comprehensive, multi-layered approach to validating a booking and payments platform covering functional correctness, user experience, system integration, and edge case resilience.



Functional Testing

. CoreCRUDoperations,booking flows, and payment verification.

A/B Testing

. UXvariationsin booking flow and payment screen layouts.

Cross Testing

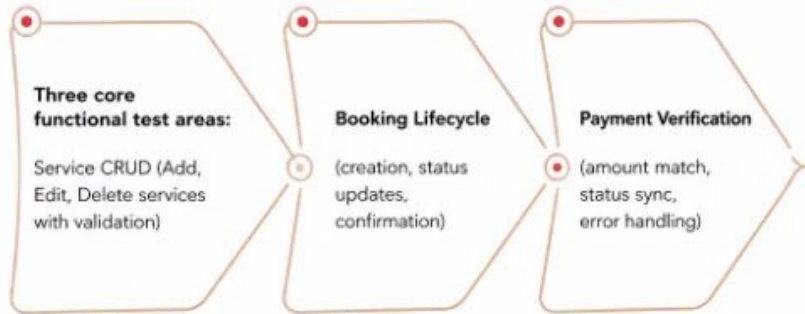
. Systemintegration between services, vehicles, zip codes, and payments.

Edge Case Testing

. Duplicateattempts,invalid inputs, expired slots, and concurrency.

FUNCTIONAL TESTING: CORE FLOWS

A comprehensive, multi-layered approach to validating a booking and payments platform covering functional correctness, user experience, system integration, and edge case resilience.



What We Validate:

- . **Service CRUD** : Add, edit, and delete services with proper field validation and error states.
- . **Booking creation & status updates** : End-to-end flow from slot selection to confirmed booking.
- . **Payment verification** : Amount matching, transaction status sync, and failure handling.

.Services :Add,Edit,Delete service with validation. **Result:** ✓, **Status:** Passed , **Validation:** ✓

.Booking:Creation,Status update, Confirmation. **Result:** ✓✓, **Status:** Passed, **Confirmation:** ✓

.Payment Verification:Amount match, status sync, error Handling. **Result:** ✓, **Status:** Passed, **Verification:** ✓

Service name	Service Price	Service Images	FAQ's	Service Status
Manual Polish (3h)	1,000 One Thousand Rupees	ADD IMAGE	ADD FAQ	☐
Intensive Interior Wash (1h 30m)	15,000 Fifteen Thousand Rupees	ADD IMAGE	ADD FAQ	☐
Only Exterior Foam Wash (45min)	250 Two Hundred Fifty Hundred Rupees	ADD IMAGE	ADD FAQ	☒
Basic Interior & Exterior (2hr)	350 Three Hundred Fifty Hundred Rupees	ADD IMAGE	ADD FAQ	☒

Qr no.	QR Code	QR Amount SET	Payment Type	Status
		50	BHIM (Bharat Interface for Money)	☒

Showing 1 to 1 of 1 entries

Previous 1 Next

 **Book Your Wash**

1

2

3

Your vehicle and service

Service

Basic Interior & Exterior (2hr) [Base Price: ₹350]

Vehicle brand

Mercedes

Select model

No models available

 **Vehicle type:**

Additional options (HTVA)

☐ SEAT CLEANING (FABRIC/LEATHER/ALCANTARA) ₹300/-

☐ ROOF CLEANING ₹500/-

☐ ENGINE CLEANING (STEAM) ₹200/-

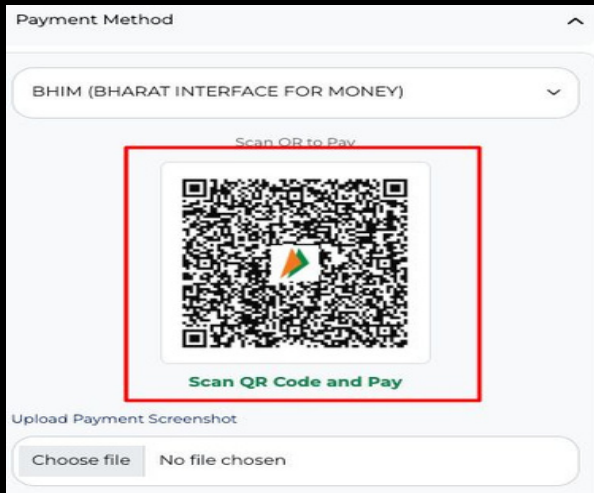
☐ WHITE DASHBOARD AND DOOR CLEANING ₹200/-

← Back

Continue →

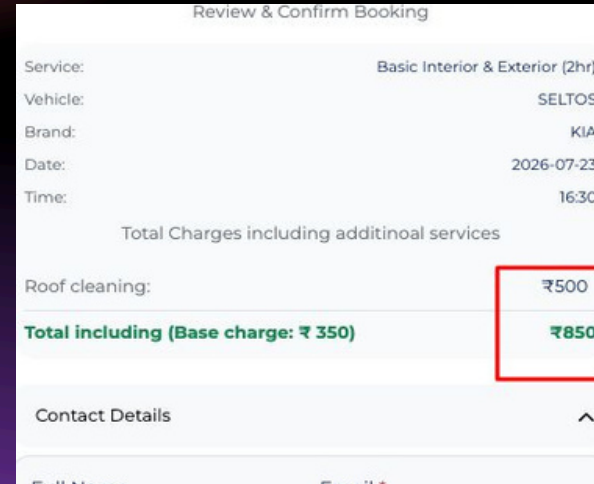
A/B TESTING: PAYMENT SCREEN LAYOUTS

Success metrics: completion rate, time-to-pay, and error rate per layout variant.



QR-First UI:

QR code is the primary visual element. Optimized for in-person or kiosk scenarios where scanning is the dominant payment method.



Amount-First UI

Prominently displays the total amount due with card input fields. Designed for online or remote payment contexts where trust and clarity matter most.

CROSS TESTING: SYSTEM INTEGRATION

Cross testing ensures that data flows correctly across all interconnected systems catching mismatches that unit tests can't surface.



Service ↔ Vehicle Model Mapping

Validates that only compatible vehicle models appear for a given service selection.



Zip Code ↔ Availability Validation

Confirms that time slot availability is correctly filtered and displayed by geographic zone.



Booking ↔ Payment Status Sync

Ensures booking state updates only after successful payment confirmation — no orphaned records.



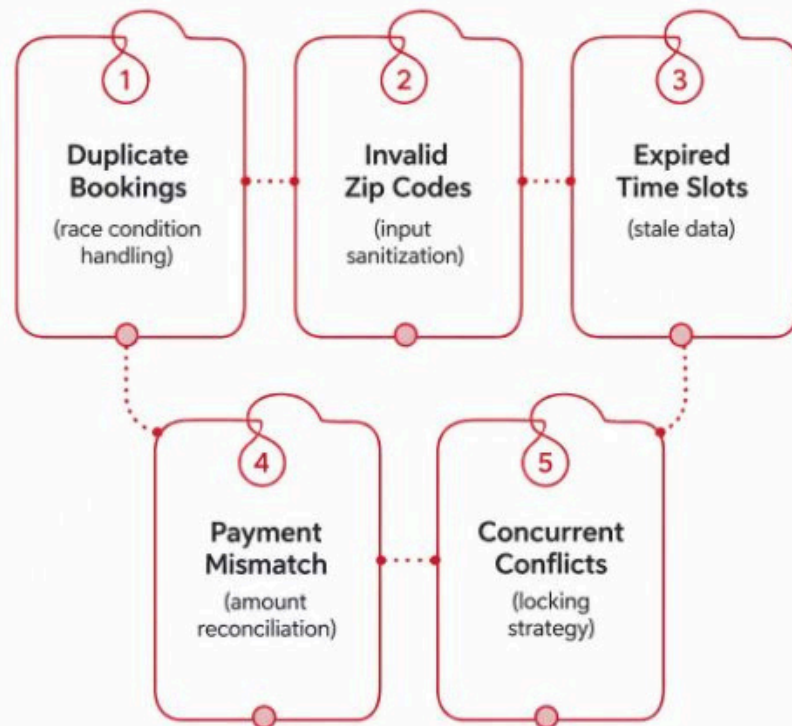
User ↔ Booking History Consistency

Verifies that all completed bookings appear accurately in the user's history with correct details.

EDGE CASE TESTING

Scenarios Covered

- . **Duplicate booking attempts** — Same slot, same user, rapid submission.
- . **Invalid zip codes** — Malformed, out-of-range, and non-serviceable inputs.
- . **Expired time slots** — Selection made after slot becomes unavailable.
- . **Payment mismatch cases** — Amount discrepancy between booking and gateway.
- . **Concurrent booking conflicts** — Two users targeting the same slot simultaneously.



TESTING SUMMARY & CONCLUSION!

Based on comprehensive testing and validation, all implemented functionalities are operating correctly and are aligned with the discussed requirements and expected workflow.

✓ The website is functioning properly for all tested modules and user journeys.

Thanks



Design & Develop By : PearlOrganisation

<https://www.pearlorganisation.com>