JK LAKSHMIPAT UNIVERSITY
Institute of Design
NAAC 'A' Grade Accredited

Assist: Guidance in Real Time

Designing Quiet Confidence for India’s Automobile Technicians

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Sponser : **Imaginate XR**

Mentor : **Prof. Pritam Singh**

Program:
Masters of Design (M.Des)
Interaction Design

THE GRADUATION PROJECT 2025

This project is based on my 4-month internship at Imaginate Technologies, where I worked on the Assist App for automobile technicians. While inspired by the original app, this version was developed through independent research and field insights, resulting in a redesigned product tailored specifically for this academic project.

Shashank Sharma

GRADUATION PROJECT DOCUMENT

JK LAKSHMIPAT UNIVERSITY, JAIPUR

Interaction Design 2023-2025

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The Evaluation Jury has recommended **Shashank Sharma**

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with specialization in **Masters in Interaction Design**

Herewith, for the project titled **Assist: Guidance in Real Time**

on fulfillment of requirements by

Jury Chairman

Jury Member

Subsequent remarks regarding fulfillment of requirements

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History of UI/UX Design

The disciplines of User Interface (UI) and User Experience (UX) design have evolved significantly over the past several decades, shaped by technological innovation and human-centered thinking. While their modern interpretations are closely tied to digital interfaces, their roots trace back to the early developments in human-machine interaction.

The origins of UX can be linked to industrial design in the early 20th century, particularly with figures like Frederick Winslow Taylor and Henry Dreyfuss, who emphasized the importance of optimizing how humans interact with tools and machines. Dreyfuss's work on designing telephones, thermostats, and aircraft controls introduced the concept of usability long before digital interfaces existed.

The emergence of graphical user interfaces (GUIs) in the 1980s marked a significant turning point. With the advent of personal computing, pioneered by Xerox PARC and later adopted by Apple in its Macintosh systems, visual metaphors such as windows, icons, and folders transformed how users engaged with digital devices. This era gave rise to UI design as a formal practice, focusing on the look, feel, and behavior of screen-based interactions.

The term "User Experience" was popularized in the 1990s by Don Norman while he was at Apple. Norman advocated for a holistic approach to design that included not just the interface, but the overall experience of interacting with a product—including aspects like accessibility, delight, and satisfaction. His foundational work positioned UX as a broader discipline encompassing psychology, design thinking, ergonomics, and usability engineering.

In the 2000s and beyond, the rise of mobile computing, responsive design, and interactive web platforms significantly expanded the scope of UI/UX. With increasing complexity in digital ecosystems, designers began adopting frameworks such as Human-Centered Design (HCD) and Design Thinking, emphasizing empathy, iterative prototyping, and user validation.

Today, UI/UX design is an integral part of software and product development across domains. It involves a blend of user research, information architecture, interaction design, visual design, and usability testing. The profession has become increasingly specialized, with roles dedicated to different aspects of the user journey, powered by collaborative tools and agile methodologies.

The evolution of UI/UX reflects an ongoing shift from system-oriented interfaces to user-first experiences, where clarity, accessibility, and emotional resonance are as important as functionality. As technologies such as Extended Reality (XR), Artificial Intelligence, and voice interfaces gain prominence, UI/UX continues to adapt, seeking to make complex systems more intuitive, inclusive, and humane.

Key Responsibilities of UX Designer

- Conduct user research through interviews, surveys, and field visits to understand user needs and behaviors.
- Analyze findings to define user personas, journey maps, and pain points.
- Create information architecture, wireframes, and task flows to structure the product logically.
- Collaborate with stakeholders to align user goals with business objectives.
- Build interactive prototypes and conduct usability testing to validate concepts.
- Iterate based on feedback to refine user flows and improve usability.
- Ensure accessibility and inclusivity are considered throughout the design process.
- Document the design process and decisions for development handoff and stakeholder clarity

Key Responsibilities of UI Designer

- Design visually appealing, consistent, and functional interfaces aligned with brand identity.
- Translate wireframes and user flows into high-fidelity screens and components.
- Define a design system including typography, color palettes, iconography, and UI patterns.
- Ensure visual hierarchy and layout principles are followed to enhance clarity and readability.
- Optimize designs for different screen sizes and devices (responsive design).
- Collaborate closely with developers to ensure design feasibility and fidelity.
- Conduct visual QA to identify and resolve inconsistencies in implemented UI.
- Stay updated with the latest design trends, tools, and technologies.

Why did I choose UX Design

Design, for me, has never been just about making things look good. It's about making them work — in the most human, intuitive, and emotionally resonant way possible. Growing up, I was always fascinated by systems — how people interact with machines, how certain products feel effortless while others frustrate, and why some digital experiences leave a lasting impression while others are easily forgotten. But I didn’t have the words for it back then. It was only later, when I was introduced to the world of UX Design, that all these scattered observations began to align into a coherent path.

What drew me in wasn’t just the design tools or the visuals. It was the empathy-driven nature of UX — the way it requires stepping into someone else's shoes and understanding their motivations, frustrations, and expectations before even thinking about solutions. It’s a field where listening is more important than talking, where observing is more powerful than assuming. That aligned with who I am at the core — someone who quietly observes, questions things deeply, and prefers meaningful impact over surface-level polish.

Another reason I chose UX Design was its ability to solve real-world problems. I didn’t want to design just for the sake of aesthetics; I wanted my work to serve a purpose. Whether it's helping a technician navigate a complex system more easily or making an elderly user feel confident using a healthcare app, the outcomes of good UX can be life-changing in small but significant ways. It felt empowering to know that design could bridge the gap between technology and the people who use it, especially those who are often underserved or overlooked.

Lastly, I saw UX Design as a constantly evolving field — one that would never let me feel stagnant. The merging of psychology, storytelling, research, visual thinking, and strategy makes it intellectually stimulating. Every project is a new challenge, a new story to unfold. Choosing UX was a conscious decision to be part of that process — to become a designer who doesn’t just build interfaces, but who helps build understanding between humans and the systems they live with every day.

Introduction to Imaginate

This graduation project focused on designing and expanding the user experience of Imaginate Assist—an enterprise XR-based remote support app designed for field technicians. The project began with redesigning specific user flows within the existing app based on the company's internal requirements. The work involved creating UI layouts, improving visual consistency, and addressing pain points in technician-expert collaboration.

In parallel, the project was broadened to include independent ground research. Visits to service centers were planned to interact with actual technicians, observe real-world issues, and document gaps between ideal and practical use. These insights informed an alternate, more context-aware flow which was developed alongside the company’s original version. The project maintained a continuous loop of design, feedback, and iteration to balance company goals with real-world usability.

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Vision, Business Ideology, USP

Vision

Imaginate envisions becoming a global leader in immersive enterprise collaboration through the use of extended reality (XR) technologies. The company strives to revolutionize the way businesses conduct training, support, and maintenance by enabling real-time, device-agnostic solutions that bring remote teams together in meaningful, productive ways.

Business Ideology

At its core, Imaginate operates on the belief that continuous innovation is the foundation of long-term success. The company is committed to disrupting traditional methods of industrial support and collaboration by integrating emerging technologies like AR, VR, and MR into real-world workflows. This ideology reflects a forward-thinking approach focused on solving real problems through scalable, user-centric solutions that enhance both productivity and employee empowerment.

Unique Selling Points (USPs)

- Device-Agnostic Architecture: Works seamlessly across smartphones, tablets, AR headsets, and smartglasses—ensuring maximum accessibility and scalability.
- Real-Time Expert Collaboration: Offers two-way video streaming, AR annotations, whiteboard sharing, and voice guidance to connect technicians with remote experts instantly.
- Immersive Job Instructions: Provides step-by-step visual workflows using 3D models, photos, and videos to support preventive, corrective, and predictive maintenance tasks.
- AI-Powered Assistance: Integrates artificial intelligence for predictive support and real-time recommendations, reducing resolution time and human error.
- Data-Driven Insights: Captures job reports, task completion analytics, and user performance metrics to enable continuous process improvement.
- Significant Cost Savings: Reduces travel-related expenses and dependence on local expert availability while increasing first-time fix rates and support capacity.

Abstract

Title: Redesigning the Assist App for Efficient Field Support: A UX Case Study for Automobile Technicians

In an age where field technicians play a vital role in delivering after-sales service for automotive and consumer electronics, the tools they use can significantly affect both customer satisfaction and service efficiency. This graduation project focuses on the UX-led redesign of the existing "Assist" mobile application developed by Imaginate, a company specializing in advanced support solutions. The app is used by technicians operating on machines such as cars, two-wheelers, washing machines, and air conditioners, with Maruti Suzuki being the current enterprise client.

The core objective of this redesign is to improve the user experience of field technicians through streamlined SOP navigation, AI-powered assistance, visual documentation, and expert connectivity—thus enabling them to troubleshoot issues effectively and confidently. This case study is grounded in real-world research at authorized service centers in Jaipur and includes technician interviews, field observations, and client feedback.

The methodology adopted combines user-centered design thinking with agile feedback loops. Key challenges addressed include unclear task flows, overloaded SOP lists, lack of visual guidance, and friction during escalation to experts. The redesigned solution introduces a clear workflow: login, vehicle model entry, SOP selection, AI chatbot interaction, image upload, and expert call assistance.

This document presents the step-by-step UX process, research insights, wireframe iterations, and final UI. It also proposes an independent branding direction aligned with future client rollouts. By improving digital guidance and decision-making for technicians, this redesign aims to elevate service quality, reduce task time, and create a replicable design system for clients beyond Maruti Suzuki, such as Renault.

The project reflects the growing need for intuitive digital tools in industrial service environments and positions UX design as a key lever in the digital transformation of field operations.

Original Project Proposal

Design Opportunity

As automotive brands expand their service operations across India, field technicians face increasing pressure to deliver efficient, accurate, and satisfactory repairs. The existing Assist app, developed by Imaginate, helps guide technicians through the servicing process. However, the current version presents usability challenges due to poor navigation, linear SOP presentation, and lack of contextual interaction. This project recognizes a design opportunity to simplify, restructure, and humanize the digital interaction for field technicians using the app in high-pressure environments.

Project Context

Imaginate's Assist app is already deployed with clients like Maruti Suzuki and offers a modular support system via login, vehicle detail input, SOP selection, chatbot integration, image upload, and expert video call support. The goal of this project is not to build the app from scratch but to deeply analyze, test, and redesign the user experience so that future implementations (e.g., for Renault) follow a scalable, technician-first design system.

Objectives

- Identify friction points in current task flows and interfaces.
- Improve clarity and navigation in SOP presentation.
- Humanize chatbot interactions and reduce technician hesitation.
- Create a brand-consistent UI that can adapt to multiple clients.
- Improve speed and accuracy of task completion.

Scope

- Focused on technicians working in reputed Maruti Suzuki workshops.
- Includes redesign of flows, UI, chatbot interface, and branding.
- Excludes backend restructuring, AR/VR exploration, or hardware.

Deliverables

- Wireframes and high-fidelity designs.
- UI kits and branding system.
- Redesigns of existing flow.
- Validation with technicians and internal experts.
- Constant updates based on client feedback.

Design Goals:

- Clarity and simplicity for on-ground usage
- Reduced technician effort per repair task
- High adaptability for future clients
- Visual and textual consistency across modules

Alignment with Academic Objectives

This project aligns with the academic objective of applying human-centered design in real-world contexts. It also contributes to the academic discourse around UX design in industrial and service domains.

Note: All data and findings are anonymized in accordance with NDA guidelines where applicable.

Introduction

Background of the Study

In India’s expanding service economy, automotive brands such as Maruti Suzuki operate through vast service networks that demand high efficiency and precision from technicians. While digital tools are increasingly integrated into service workflows, many remain poorly adapted to the real challenges technicians face on ground—such as high-pressure environments, inconsistent network connectivity, and varied levels of digital literacy.

Imaginate’s Assist app, currently used by brands like Maruti Suzuki, attempts to address these challenges through structured SOPs, a chatbot, and expert video support. However, the app presents usability and experience gaps in navigation, discoverability, and contextual interaction.

This project takes inspiration from the Assist app and is rooted in real-world field challenges. It does not aim to refine the existing tool in isolation, but to critically evaluate its shortcomings and use that evaluation as a springboard for reimagining what a technician-first, scalable mobile support experience could look like. The final outcome represents a solution built from the ground up based on original research and design thinking, not constrained by any single client or existing framework.

Scope

- The project proposes a new solution architecture and interface inspired by Imaginate's Assist app and its real deployment contexts.
- It includes primary field research, UX flows, wireframes, a design system, and high-fidelity screens.
- Designed primarily for technicians at Maruti Suzuki, but envisioned as scalable for future clients (e.g., Renault).

Limitations

- The redesign is conceptual and speculative; backend systems remain outside the scope.
- Proprietary data or internal system logic of the original app is not altered.
- Testing is restricted to select service centers due to access and time constraints.
- Advanced technologies like AR/VR and AI model training are out of scope.

Purpose of Redesign

The project aims to humanize and reimagine the digital interface and interaction flow used by technicians in high-volume service centers. Rather than upgrading an existing app, the intent is to rethink its structure, flow, and tone from the lens of usability, emotional comfort, and task efficiency. It also seeks to demonstrate how a well-researched, user-centered UX process can serve multiple stakeholders across clients and contexts.

Relevance of the Project

This project offers a rare opportunity to explore enterprise UX in the automotive service industry—an area where design solutions can create tangible real-world efficiency gains. By reimagining a tool originally deployed by Imaginate, and tailoring it to technician workflows, the project bridges real-world product context with independent design authorship. It underscores how UX design can make critical service roles more manageable, satisfying, and effective.

Terminologies defined

- SOP (Standard Operating Procedure): Step-by-step diagnostic and service process for specific faults.
- Chatbot: Conversational interface providing issue-specific support and escalation pathways.
- CX (Customer Experience): The overall impression a customer receives based on service outcomes and efficiency.
- UX (User Experience): The quality of interaction between the technician and digital tools.
- UI (User Interface): The visual layer and layout that enables user-system interaction.
- On-ground Technician: A technician working in a real-world, physical service workshop.
- Field Research: Direct observational or participatory study conducted in live service environments.

About Company & Client

About Imaginate Technologies

Imaginate Technologies is a deep-tech company specializing in enterprise solutions that bridge digital transformation with industrial applications. Known for its work in immersive technologies and operational digitization, Imaginate collaborates with clients across automotive, manufacturing, and utility sectors.

The company’s mission is to create tools that improve efficiency and decision-making on ground—whether through AR/VR platforms or mobile-first utility applications.

One of Imaginate’s flagship solutions is the Assist app, a mobile application designed to support on-ground technicians working across various industries. Unlike marketing-driven B2C apps, Assist focuses on operational support, aiming to streamline problem resolution through SOPs, chatbots, and remote expert escalation features.

About Maruti Suzuki (Current Client)

As India's largest automotive manufacturer, Maruti Suzuki operates an extensive post-sales service network through thousands of authorized workshops. These workshops face heavy footfall, and technicians are under constant pressure to resolve issues quickly while maintaining high service quality.

To enhance efficiency and reduce human error, Maruti Suzuki partnered with Imaginate to deploy the Assist app. The app acts as a support companion for technicians, offering them step-by-step procedures, AI-based guidance, and expert access during vehicle servicing. While the tool has seen positive adoption, technicians have voiced concerns about discoverability, visual hierarchy, and contextual clarity in actual usage.

Design Brief

“To reimagine a mobile support experience for on-ground technicians using insights from the current Assist app’s deployment with Maruti Suzuki, and to create a scalable UX model adaptable for future clients.”

The proposed redesign is not merely a visual or usability enhancement of an existing tool — it is a systemic rethinking of how field technicians interact with digital interfaces in high-pressure service environments.

Technicians often deal with mechanical problems that require urgent attention, minimal margin for error, and seamless access to reliable information. The goal is to ensure that these service agents are supported with a tool that truly understands their pace, context, and limitations.

This reimagined product is not bound by the limitations of the original app but seeks to present a concept that’s deeply rooted in user research and future-ready in its system thinking. is not bound by the limitations of the original app but seeks to present a concept that’s deeply rooted in user research and future-ready in its system thinking.

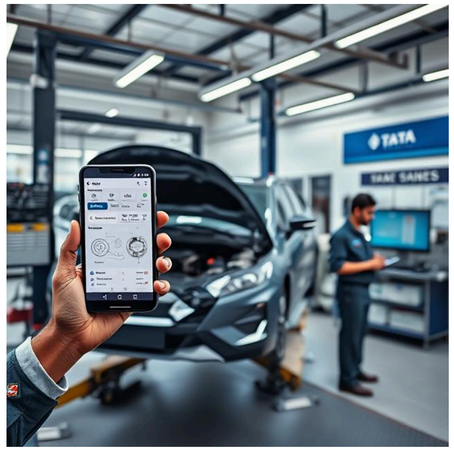
This project envisions the next-generation of Assist — one that is built ground-up through empathetic research and usability-driven design.

The redesign will address:

- Improved discoverability of SOPs through simplified navigation and contextual cues.
- Enhanced decision-making support through a more conversational and intuitive chatbot interface.
- Integrated multimedia input, enabling technicians to upload photos and get faster diagnosis support.
- Fail-safe expert escalation, including video calls or direct chat with backend service leads.
- Personalized content flow based on the technician’s location, vehicle type, and prior usage behavior.

Project Aim & Objectives

The core objective of this graduation project is to reimagine the experience of service technicians using a mobile digital assistant in automotive workshops. Drawing insights from the current implementation of Imaginate's Assist app, the redesigned solution seeks to craft a user-centered, scalable, and intuitive experience that streamlines technical diagnosis, improves decision-making, and ensures technician confidence during high-stakes operations.



Specific objectives include:

1. **To identify gaps** in the usability and functional flow of the current Assist app deployed at Maruti Suzuki service centers.
2. **To conduct on-ground user research** with real technicians to understand their mental models, pain points, language use, and device interaction habits.
3. **To explore scalable UX patterns** that could function across multiple OEMs (Original Equipment Manufacturers) like Maruti Suzuki and Renault.
4. **To design an intuitive interface** with improved discoverability of SOPs, integrated expert support, and media sharing capabilities.
5. **To deliver high-fidelity UI screens** supported by a modular design system and UX documentation that can be handed off to development teams.
6. **To ensure the product accommodates future integration of AI** features and personalization through a scalable architecture.

Aim of the Project

The project aims to:

- Rethink how field technicians interact with mobile tools in real-time service conditions.
- Prioritize emotional design and functional clarity, ensuring technicians feel supported, not overwhelmed.
- Design a seamless path from symptom to resolution that accommodates multiple modes of assistance — text, image, and expert intervention.
- Validate design decisions through iterative feedback and critique from actual service professionals, design mentors, and domain experts.
- Contribute to the broader field of enterprise UX by demonstrating how design can bring empathy, efficiency, and adaptability into complex technical workflows.

The project ultimately aspires to set a benchmark for future service-oriented digital platforms by fusing usability, emotional clarity, and operational precision into one cohesive mobile experience.

Background Study

1. Comparative Study: Similar Digital Tools in Technician Support

To understand the landscape of technician-oriented apps, a comparative review was conducted of leading solutions in this space, each offering varied interaction models:

These apps showed that while many organizations recognize the importance of technician-facing tools, most suffer from inconsistent UX, limited escalation flows, or lack of contextual personalization.

App Name	Brand Name	Key Features	Notable Gaps
Bosch Service App		SOPs, training videos, manuals	Heavy load times, poor mobile responsiveness
Hero iWorkshop		Job card handling, issue logging	Minimal diagnostic help, lacks expert chat
TVS Service Assist		VIN scan, service history, SOPs	Inconsistent UI, overwhelming interface
Tata Motors ProConnect		AI assistant, real-time chat support	Requires multiple logins, low discoverability

2. Research Insights from Existing Use Cases

In conversations with designers and product leads at Imaginate, key issues reported from Assist app's deployment at Maruti Suzuki included:

- Confusing flow between login and SOP selection
- Chatbot felt robotic and lacked contextual tone
- No feedback loop once a service task is completed
- Technicians often ignored parts of the app due to poor onboarding or overwhelming visual hierarchy

Observations from a Maruti service center visit revealed:

- Technicians relied heavily on memory or oral instructions
- Many skipped reading the full SOP due to urgency
- They preferred step-by-step images over long text blocks
- Escalation was often informal: calling senior technicians directly, bypassing the app

These pain points served as the foundation for the redesign direction.

3. Scenario Building: Field Use Simulation

To ground the problem in context, real-world scenarios were mapped to simulate typical field service experiences:

Scenario 1: Engine Issue at Rush Hour

Ravi, a technician at a Jaipur Maruti service center, receives a car with engine trouble at 11AM — peak service load. Under pressure to quickly identify and resolve the issue, he must:

- Log in
- Select the right car model
- Browse through engine SOPs
- Use chatbot to clarify a diagnostic step
- Upload a photo of the broken valve
- Call an expert due to time constraints

Scenario 2: New Joinee with Low Confidence

A fresh recruit tries to handle a gear shift complaint. Not confident, he relies solely on the app. Frustrated by poor instructions and non-intuitive flow, he abandons the app and calls his senior.

These scenarios validated the need for rethinking the Assist app as a support companion — not a burden.

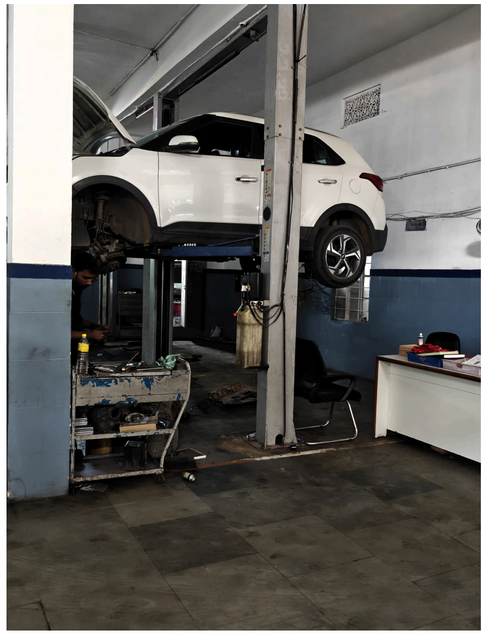
Research & Discovery

1. Field Visits: On-Ground Observations at Maruti Service Center (Jaipur)

Rather than starting with assumptions around existing digital tools, this project began by deeply observing the real-world environment of Maruti Suzuki technicians at a service center in Jaipur. The intent was to uncover cultural workflows, habits, and friction points that inform — or resist — digital integration.
This decision was intentional: while the existing Imaginate Assist app was referenced later for benchmarking, the foundational insights were derived from direct technician interaction, allowing for a bottom-up, context-driven design proposal.

2. Field Visits: Observations at Maruti Suzuki Workshop (Jaipur)

Workshops follow a consistent structure, where hierarchy and habit govern daily flow more than screens and apps. These patterns formed the backbone of redesign considerations.



Observed Workflow Structure:

Supervisor test drive: Issues like clutch noise or alignment are jotted on a paper job card.

↓

Technician general SOP:
- Begin with wheels (inspection, pressure, tightening)
- Open bonnet (coolant, battery, belts, fluids)
- Lift car on ramp (remove tyres, clutch/oil/cable inspection)

↓

Fault documentation: Technicians manually write observations on the job card and inform the supervisor verbally.

↓

Add-on work orders: Supervisor or service advisor updates the job card with any new customer-identified issues.

↓

Issue escalation: Senior technicians are consulted informally if a junior is stuck, or parts/advice are needed.

↓

Training culture: Junior or trainee technicians only observe or assist until deemed ready. Hands-on mentoring drives learning.

3. Technician Interviews: Daily Life, Mindsets & Interactions

Technician	Age (approx)	Role	Key Quote / Insight
Anil	36 years	Senior Tech	“Every job begins with the general SOP. Tyres, bonnet, ramp — it’s muscle memory now.”
Mukesh	28 years	Junior Tech	“If I’m stuck, I ask the senior. That’s faster than figuring things out on screen.”
Deepak	22 years	Trainee	“I mostly watch for now. Once confident, I’ll handle a car alone.”
Harish	25 years	Mid-Level	“We write everything on the job card and tell the supervisor. That’s the system.”

Rather than digital tool usage, interviews explored routine behavior, trust dynamics, and organic collaboration. These interviews confirmed a strong preference for peer knowledge over apps, manual documentation over digital inputs, and an unbroken trust in time-tested sequences.

4. Workflow Mapping: Field-Based Technician Journey

Stage 1: Supervisor Test Drive
→ Records initial issues → Assigns car to technician

Stage 2: General SOP
→ Wheel checks → Bonnet check → Ramp-up inspection

Stage 3: Fault Identification
→ Notes made on job card manually → Supervisor informed

Stage 4: Escalation or Collaboration
→ Senior technician consulted if needed → Service advisor contacted for part support

Stage 5: Task Completion & Reinspection
→ Final check → Job card signed → Next task begins

5. Gap Analysis: Real Workflows vs Digital Assistance Tools

While the Imaginate Assist app (used by rotating clients like Maruti Suzuki) offers AI-driven SOP guidance, chatbot support, photo uploads, and expert consultation, the on-ground observations raised key misalignments:

Real-World Practice	Digital App Assumption	Preference for peer-led training
Manual job cards as central record	Expectation of full digital input and tracking	Step-by-step instruction required on screen
Informal verbal escalation to seniors	Chatbot or remote expert call support	Muscle-memory based SOP execution
Assumption of self-guided learning via app	Minimal digital interruptions	Expectation of active in-app engagement

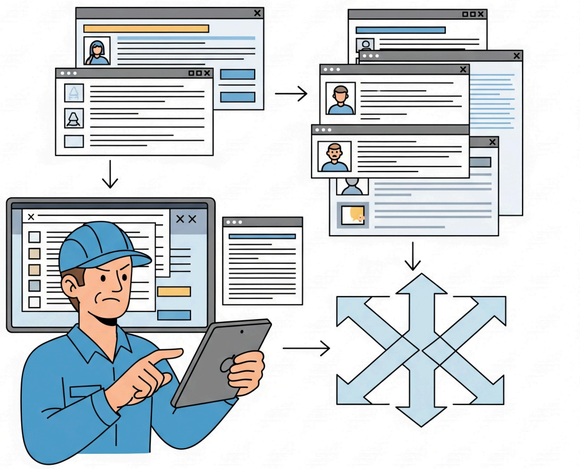
These gaps shaped the design direction: rather than force digital workflows onto field behavior, the redesign focuses on subtly embedding assistance into existing rhythms.

Problem Definition & Opportunity Mapping

Key UX Challenges Identified

Through field visits, technician interviews, and on-ground observation at service centers, several critical pain points were identified in the current servicing workflow and the existing Assist app. These challenges were not merely digital but embedded in the daily realities of technician work.

While observing technicians during field visits and observing their service workflows, several critical gaps emerged — not just in the app's interface, but in how support systems are accessed during actual work. These challenges were deeply rooted in cognitive load, lack of visual guidance, and dependency on others.



Key Problems Observed:

1. Technicians often forget specific steps within standard operating procedures (SOPs)
   - Most SOPs are stored as mental models or passed verbally, making consistency difficult, especially for newer technicians.
2. There is a high dependence on supervisors for clarifying doubts or next steps
   - Even during routine servicing, technicians frequently halt work to consult seniors, leading to inefficiencies and loss of confidence.
3. Lack of accessible, visual guidance during service workflows
   - Semi-literate or regional-language technicians struggle with text-heavy instructions, increasing the chance of missed tasks.
4. Technicians find it difficult to log or document the resolution of service issues
   - Post-service updates are often given verbally or scribbled on paper, leading to incomplete or unverified records.
5. No built-in support when encountering unexpected issues
   - When problems arise (e.g., missing parts, stuck components), there's no structured way to get expert help without leaving the workspace.
6. User flow of the existing app does not align with the physical workflow of technicians
   - The app often interrupts the natural sequence of tasks, forcing back-and-forth navigation or guesswork.

Opportunity Mapping

These recurring challenges opened up key design opportunities, each rooted in real technician pain points and service center dynamics. This stage defined the foundation for a solution that not only improves the digital experience but respects the technician's environment, language, and cognitive load. Each mapped opportunity became a focal point for later design iterations.

Identified Pain Point	Design Opportunity
SOP steps not standardized or remembered	Opportunity to create clear, repeatable SOP guides
High supervisor dependency	Opportunity to support autonomy through digital guidance
Low usability for semi-literate technicians	Opportunity to introduce a visual, icon-based interface
No proper issue resolution documentation	Opportunity to streamline feedback and task closure
No structured help system during confusion	Opportunity to integrate real-time support within workflow
App disrupts physical work rhythm	Opportunity to align app navigation with actual task flow

Design Process

Approach to Design — A Ground-Up Reimagination

This was not a cosmetic UI revamp — it was a workflow-first redesign of how automobile technicians interact with support systems on the ground. Our process took cues from real-world pain points, everyday workarounds, and how semi-literate technicians actually function in high-pressure garage environments.

Rather than retrofit a few features, the app experience was rebuilt around the technician's mental model — visual-first, step-based, with integrated support.

Design Thinking Framework Used

We adopted the Double Diamond framework to structure the redesign process, ensuring a balance between exploration and convergence:

🔍 Discover: Field visits, interviews, SOP observations
🎯 Define: Mapping technician goals, defining pain points
✏️ Develop: Sketches, wireframes, testing flows
🚀 Deliver: High-fidelity UI screens + field-ready visuals

Key UX Shifts in Approach

Instead of building for "features," we designed for technician intent and state of mind.

Conventional Approach	This Redesign's Approach
Menu-based browsing	Task-first tiles for quick access
Text instructions	Visual walkthroughs with thumbnails/videos
Linear navigation	Contextual, modular steps
Supervisor dependency	In-app help options: chatbot, call, upload

Core UX Challenges Identified

- 🧠 Cognitive overload from SOP complexity
- 🚧 Interruptions due to supervisor dependency
- 🔄 Misalignment between app flow and physical task order
- 🔤 Language and literacy friction
- 📷 No structured task documentation or resolution capture

Feature Prioritization Matrix

To ensure clarity and impact, features were filtered using an Impact–Effort Matrix:

Category	Features Included
High Impact, Low Effort	Icon-based SOP tiles, Dark Mode, Language Toggle
High Impact, High Effort	Chatbot Integration, Upload Image/Video of Resolution
Low Impact, High Effort	OCR-based vehicle scan (pushed to future version)
Low Impact, Low Effort	Task Completion Animation, Visual Cues for Feedback

Workflow Testing & Feedback Integration

Wireframe walkthroughs were conducted with 2 technicians and 1 supervisor.

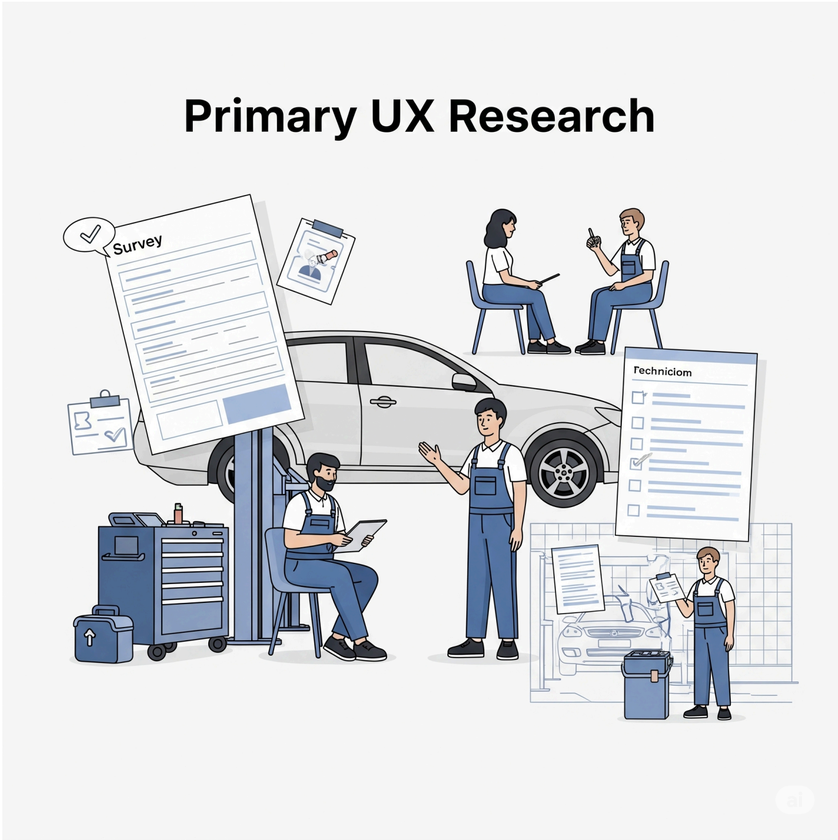
Feedback led to:

- Bigger touch targets for SOP cards
- Simpler upload flow with camera integration
- Relocation of “Need Help?” to always-visible bottom nav
- Reduction of all text to essentials + added regional language toggle

Methodology Used for Data Collection

Research Methodology — Mixed Methods Approach

To ensure the design was grounded in real technician behavior and needs, a Mixed Methods Research Approach was adopted. This allowed us to combine qualitative depth with practical usability insights, ensuring that design outcomes weren't speculative but deeply rooted in daily garage workflows.



1. Field Research (Primary Data Collection)

🔎 Unstructured Observations at Service Centers

- Location: Maruti Authorized Workshops – Jaipur
- Duration: Multiple sessions across a 7-day period
- Observed the entire service flow from vehicle entry to final delivery

- Focus on how technicians:
  - Begin standard servicing routines
  - Follow SOPs (with or without visual guides)
  - Ask for help or escalate to supervisors
  - Handle new or unfamiliar problems

1. Field Research (Primary Data Collection)

👥 Technician & Supervisor Interviews

- Conducted informal conversations with:
  - 3 Technicians (junior, senior, trainee)
  - 2 Supervisors

- Insights gathered:
  - “We start with general checks, move to engine bay, then lift the car and do clutch tightening, greasing, etc.”
  - SOPs are mental and experience-based — rarely visualized.
  - New joinees are trained hands-on and shadow seniors. They don’t get independent job cards during training.
  - During confusion or missing parts, support is always supervisor-dependent.
  - Errors are sometimes missed due to fatigue or memory lapse.

📸 Photo + Video Captures of On-Ground Process

- Visual documentation of technician gestures, tool usage, and common movement patterns while servicing.
- Supported decision-making for iconography, UI touch area sizes, and video format planning.

2. Secondary Research (UX + Domain References)

📱 Existing Assist App Analysis

- Reviewed current app interface, screen flows, pain points in usability
- Identified gaps like:
  - Text-heavy instructions
  - Long tap paths to reach SOPs
  - No help or upload feature for technicians
  - App not aligned to physical servicing order

🛠️ Comparative UX Benchmarks

Studied apps that solve similar problems visually:

- Snap-on Tools App – Mechanic-focused, tool interface
- Swiggy / Zepto Delivery Flow – Step-wise task completion model
- WhatsApp & YouTube Shorts – Chat-based help and quick video viewing

3. Data Validation & Feedback Loops

🧪 Wireframe Testing with End Users

- Lo-fi prototypes shown to two technicians and one supervisor
- Asked them to complete a sample task flow (Engine Service → Mark Steps Done → Upload Fix)
- Observed:
  - Where they paused
  - Which icons were clear or confusing
  - Ease of reaching help or upload features

🔄 Incorporated Feedback into Iterations

- Icon size and padding increased for touch accuracy
- “Help” made persistent in bottom nav
- Text reduced to key verbs and labels (e.g., “Start SOP,” “Complete Task,” “Upload Fix”)
- Regional language toggle added to header bar
- Success screen made visual with minimal text

✅ Expert Review & Peer Critique

Shared flow with two design faculty members and one UX peer
Reviewed for:

- Accessibility
- Cognitive load
- Language agnosticism
- Visual clarity for low-literacy environments

Analysis & Synthesis

Key Insights from Research

The field interactions, technician interviews, and app analysis revealed multiple latent pain points that were not immediately visible from the original brief. These insights became the bedrock of the refined design direction.

Technician Behavior Insights

- Visual learners: Technicians responded faster to images or gestures than written instructions.
- Memory-based SOPs: Common services like engine check or clutch tuning were executed from memory, not formal references.
- Help-seeking hesitation: Many avoided asking for help unless a senior was physically nearby — due to shame or delay.
- Work environment: Oil, grease, and loud surroundings demanded fast, one-tap actions and glanceable UI.
- Trust in repetition: Their comfort came from performing similar tasks repeatedly — app needed to reflect this rhythm.

App Usability Insights

- Navigation was often non-linear, not aligned to how services actually happen on ground.
- Instructions were too text-heavy and not language agnostic.
- Lack of issue-based entry points – technicians often start tasks based on the issue reported by car owner, not SOP lists.
- Uploading resolutions was not integrated — relying on manual reporting to supervisors.

Refined Project Brief

Originally scoped as a “UI refresh,” the project evolved into a workflow redesign focused on technician cognition and service realities.

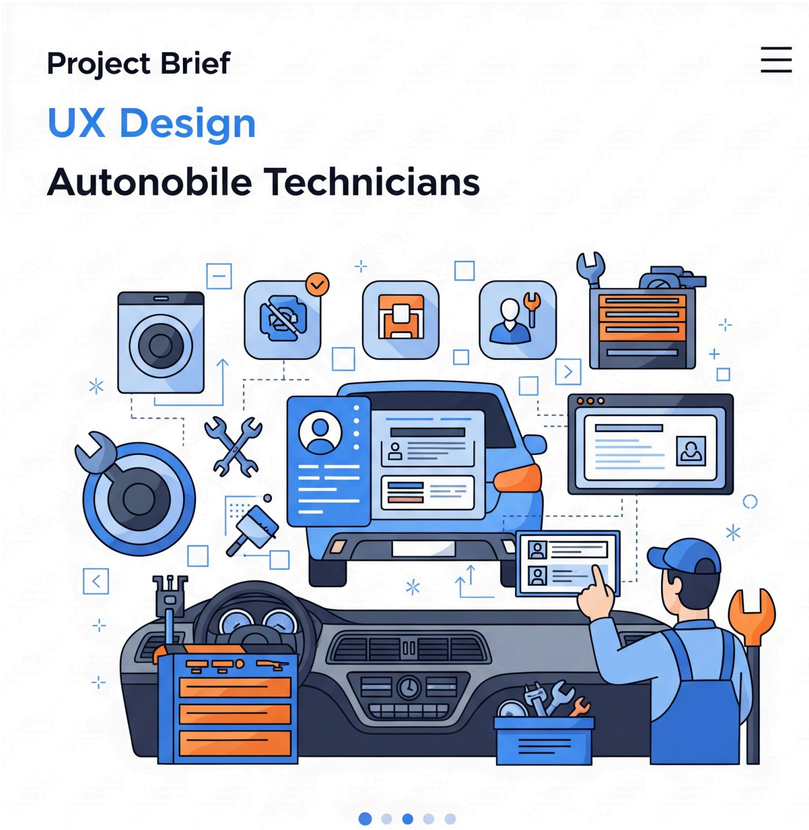
🎯 Updated Problem Statement:

How might we design an intuitive, visual-first mobile experience for automobile service technicians that:

- Enables easy discovery and completion of SOPs
- Minimizes cognitive effort and language dependency
- Offers quick support access and issue resolution tools
- Aligns with the natural order of physical service tasks

🧩 Updated Objective:

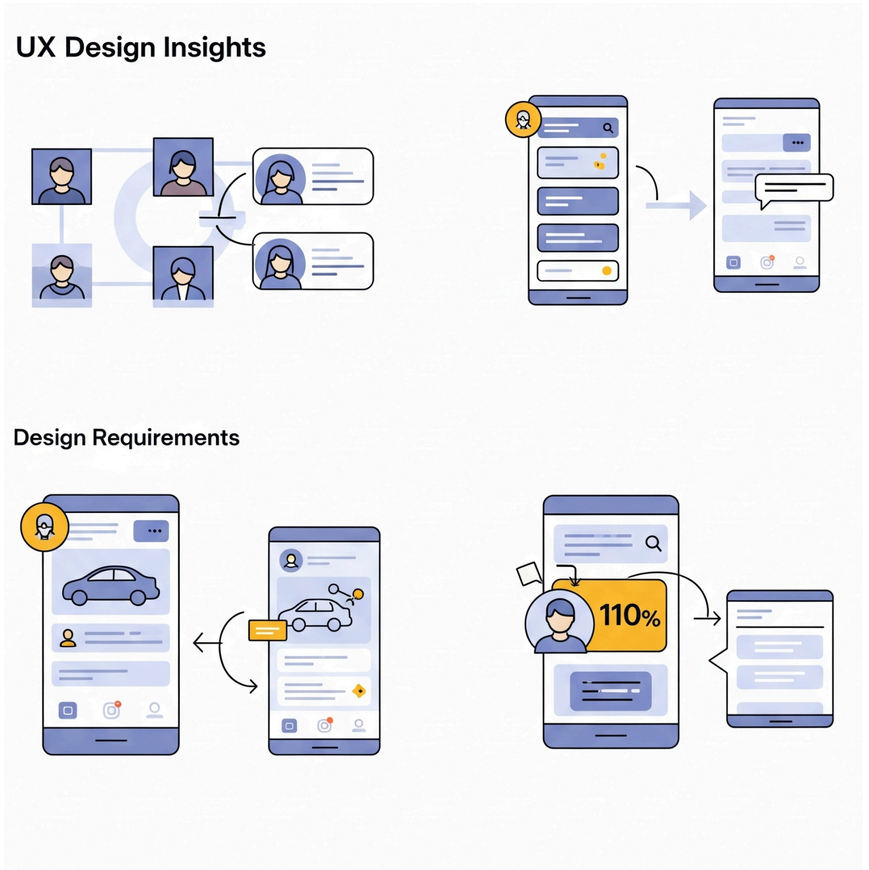
To redesign the ASSIST app as a task-focused, visual companion that works with technician habits, not against them — helping them move from “confused” to “confident” in every job card.



Design Criteria (Derived from Insights)

These criteria guided every decision across interface, flow, and content:

Category	Features Included
Cognitive Load	Minimal text, large bold icons, visual SOPs
Task Orientation	Flows aligned with actual garage service sequences
Touch Ergonomics	Large touch areas, vertical scroll layout
Support Access	Built-in Help: Chatbot + Call + Upload
Language Inclusivity	Hindi/Regional language toggle
Training Simplicity	Visual onboarding screens with real-life visuals
Completion Confidence	Green ticks, progress indicators, confirmation animations
Trust Building	Resolution upload ensures accountability & pride
Offline Resilience	Tasks saved locally with sync option (scalable)
Branding	Dark theme with red-white contrast (Imaginate + Theme)



Design Development - Low Fidelity Wireframing

Wireframe Development – From Idea to Interface

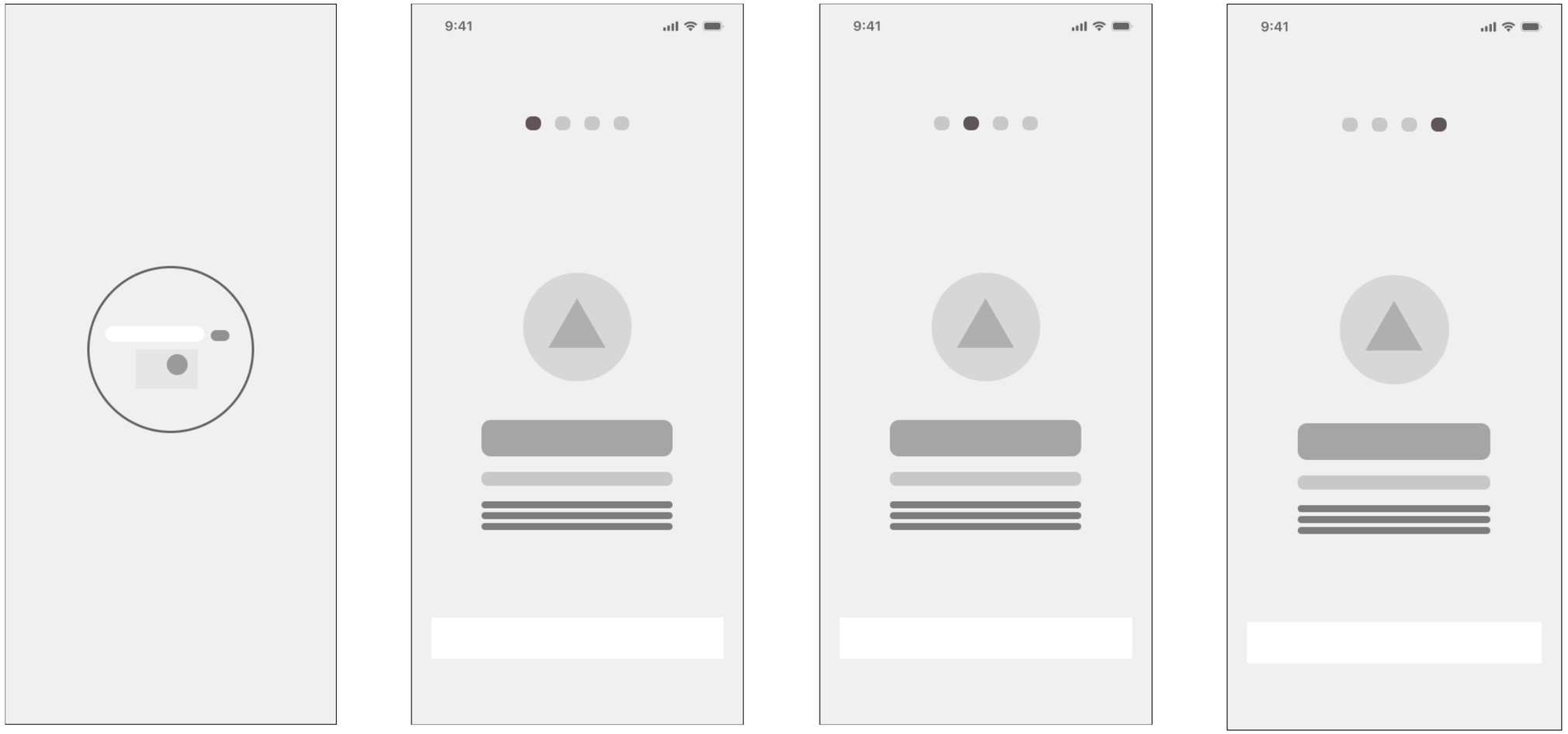
Based on our refined brief and real-world workflow mapping, we began wireframing the app screens to address each stage of a technician's task flow.

📄 Lo-Fi Wireframes

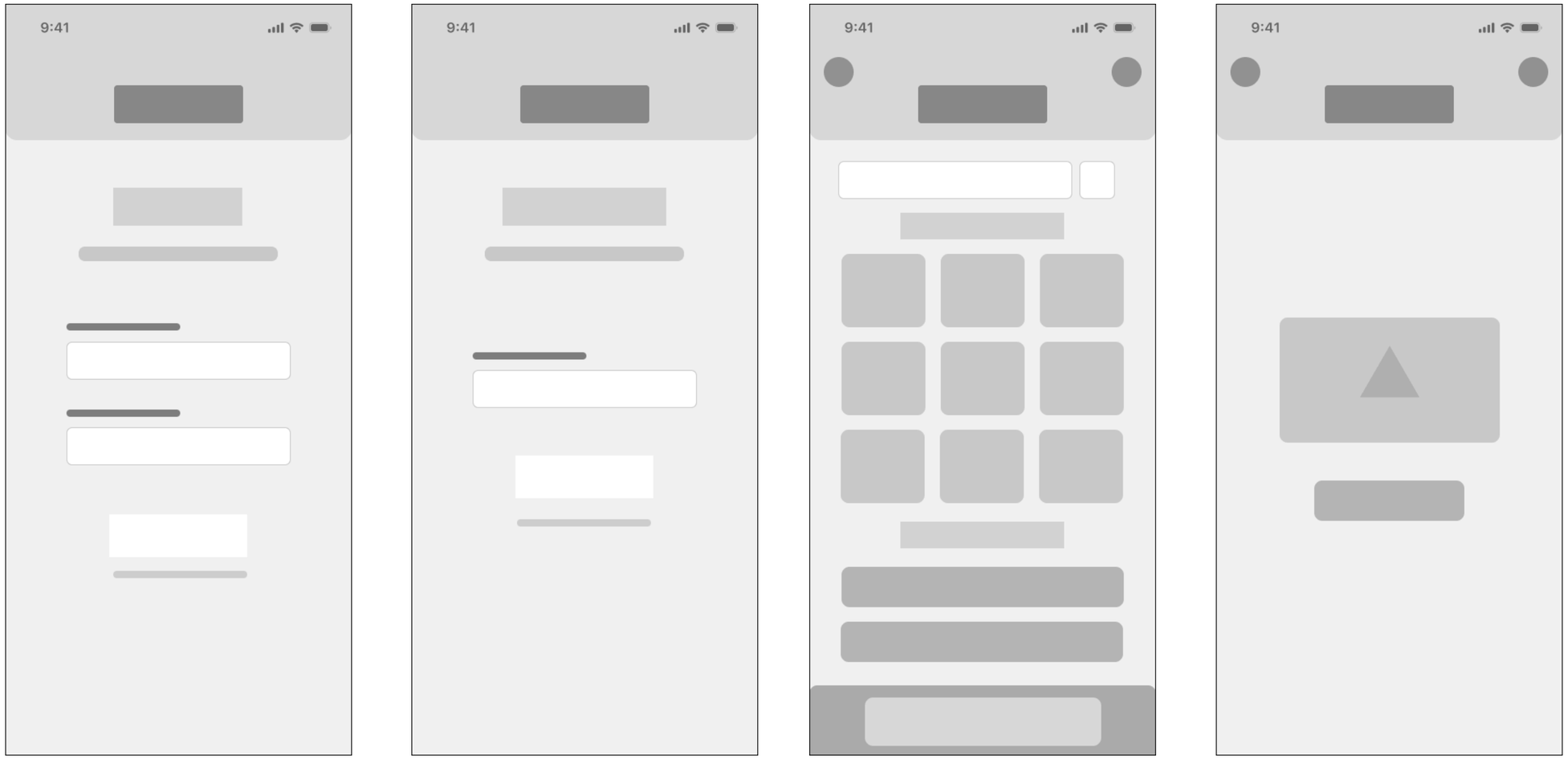
- Drafted using black-and-white block layouts
- Focused on content hierarchy and navigation
- Presented in workshops with design mentors and a supervisor from the field for feedback

Screen	Key Wireframe Focus
Login	Minimal steps – Technician ID and PIN only
Vehicle Entry	Option to enter or scan number; simple flow
Dashboard	Bold service icons, categorized into General and Specific Issues
SOP Screen	Step-by-step visuals; each card = one action
Help Screen	Easy access to expert via Chat, Call, or Upload
Resolution Screen	Upload option with type suggestion, image input
Completion	Green tick, summary text, “Well done!” animation

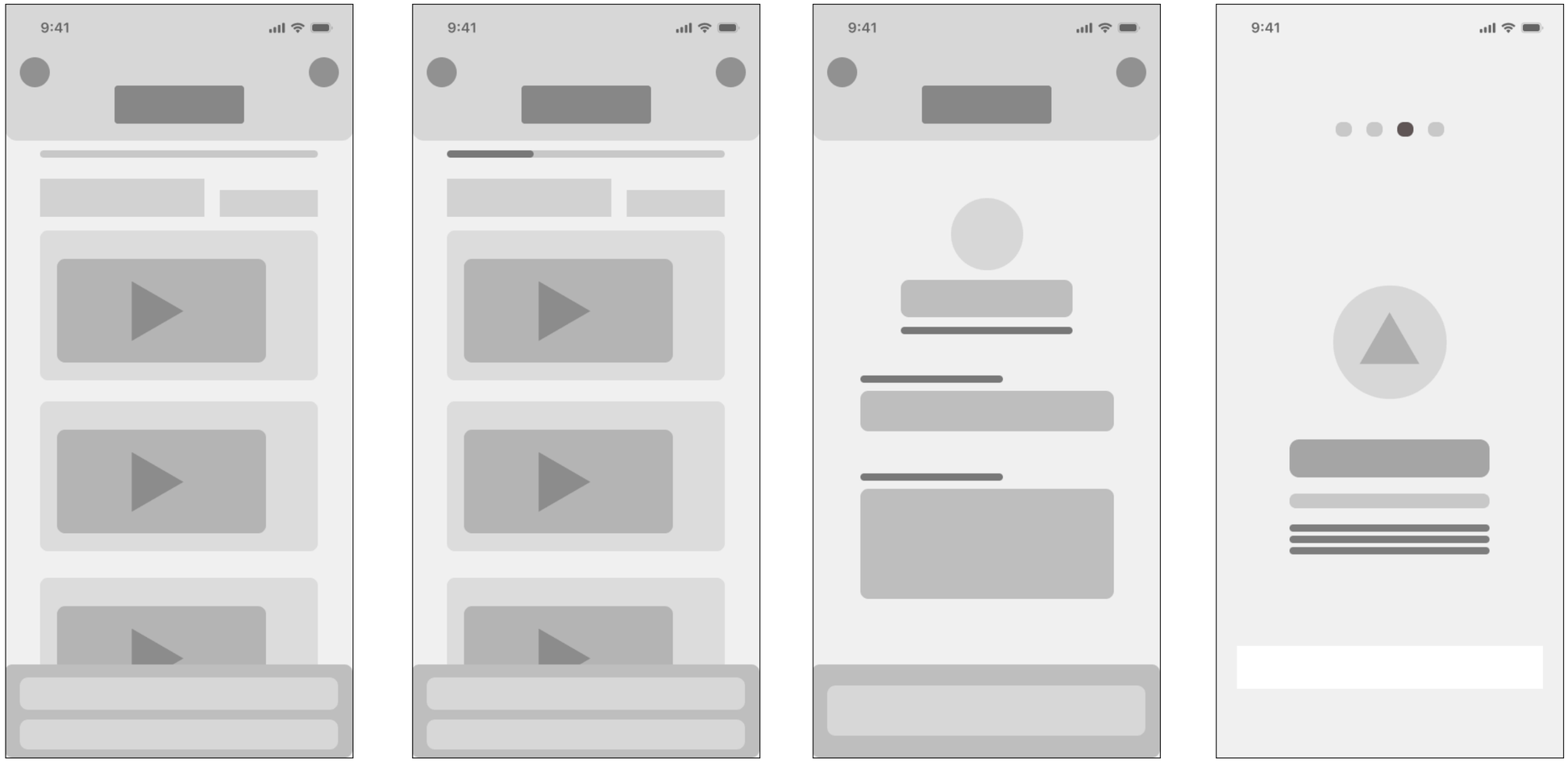
Wireframe Development – From Idea to Interface



Wireframe Development – From Idea to Interface



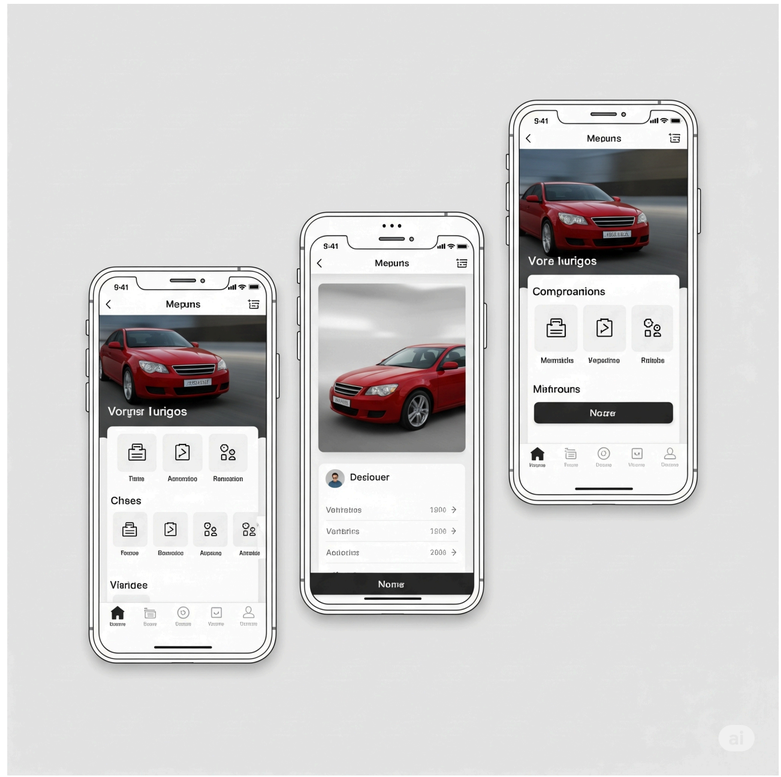
Wireframe Development – From Idea to Interface



Design Development - Mid Fidelity & Branding Guidelines

Mid-Fidelity Iterations – Functional Testing

After validating low-fidelity wireframes, we created greyscale mid-fidelity designs for testing screen logic and content flow.



🔁 Key Iterations Based on Testing:

- **Icon Sizes Increased:** For greasy-hand interaction and better visibility
- **“Need Help?” Button Moved:** Made persistent at the bottom of every SOP step screen
- **Search Function Added:** On Dashboard to allow technicians to quickly find SOPs by keywords
- **Tick Mark Animation:** Added to indicate task completion instantly

We conducted feedback sessions with:

- 2 working technicians from Maruti service centers
- 1 supervisor familiar with job cards and issue triaging
- Internal UX mentors (Imaginate)

Final UX Flow – Designed for Technician Reality

The final UX flow was constructed around real technician behavior, not typical app logic. Each screen builds toward speed, clarity, and confidence.

🔗 User Flow Overview:

App Entry
- Assist logo splash screen → Onboarding tips (visual-based)

Login
- Enter Technician ID → Enter PIN

Vehicle Input
- Manually enter or scan registration/model

Dashboard
- Search Bar (on top)
- General Service SOP Cards (e.g., Engine, Brakes, etc.)
- Specific Issue Cards (e.g., Engine misfiring, Clutch noise)
- “Change Vehicle” option at bottom

SOP Step Screen
- Image thumbnail or short video card per step
- Tick each step as done → animation plays
- “Need Help?” persistent button for Chat/Call/Upload

Completion & Upload
- Final summary screen:
  - “What did you fix?” → Suggestion chips + custom input
  - Upload photo/video → Camera/Gallery
  - “Submit Resolution” button

Confirmation
- Large green tick + “Well Done” screen
- Back to Dashboard / Next Job prompt

Branding Guidelines

🎨 Color Palette – Glare-Free, Service-Floor Ready

We designed the ASSIST app with a dark, contrast-optimized palette suitable for garages and workshops where lighting conditions vary, and technicians need high visual clarity without eye strain.

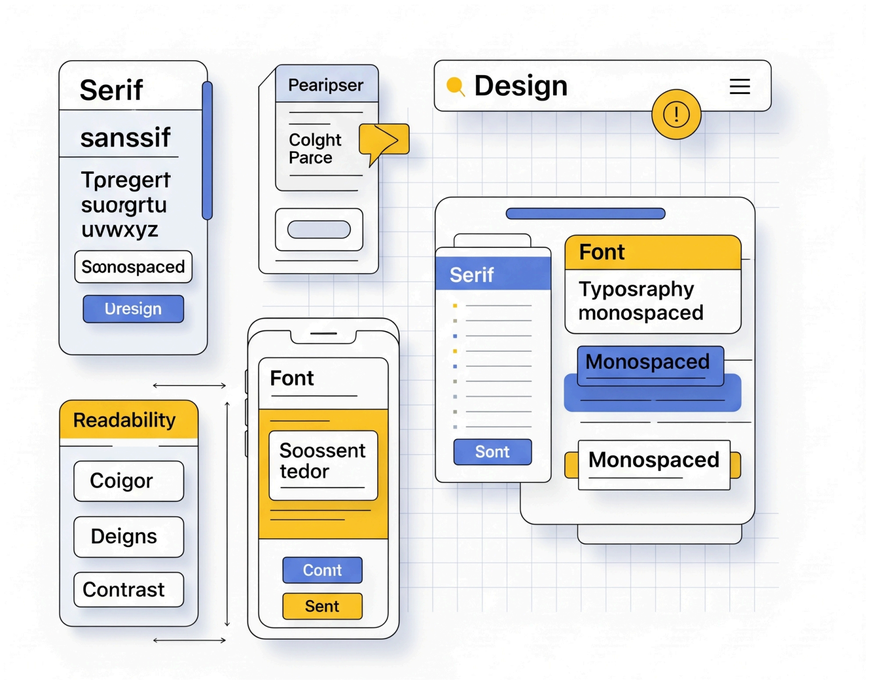
Purpose	Hex Code	Usage Description
App Background (Primary)	#1A1F2C	Dark bluish-grey base tone for full app background
Top Panel / Headers	#1B1B1B	Blackish-grey for toolbars, navigation panels
Card Background (SOP Tiles)	#3A3A3A	Grey-black — separates task cards from background
Primary Action (CTA / Buttons)	#EA384C	Pinkish red for high visibility on buttons like "Login", "Start SOP"
Task Completion / Success	#22C55E	Greenish tone for progress ticks and “Task Done” confirmations
Typography / Icon Highlights	#FFFFFF	Pure white for clean text and icon legibility
Secondary Text / Labels	#B0B0B0	Soft grey for subtitles, hints, and non-critical content

The palette was optimized for low-light garages, where bright UIs strain the eye. It also echoes modern tool dashboards, reinforcing the app as a technician’s tool, not a formal report.

🔤 Typography – Industrial Yet Human-Friendly

We designed the ASSIST app with a dark, contrast-optimized palette suitable for garages and workshops where lighting conditions vary, and technicians need high visual clarity without eye strain.

Font	Purpose	Attributes	
Roboto	Primary text	Chosen for its modern, geometric structure and high screen readability.	Aa
Inter	Secondary text	Selected for its slightly softer, rounded tone that balances Roboto's rigidity.	Aa



Weight Hierarchy:

- Bold (18–22pt) for task names and buttons
- Medium (16–18pt) for labels and section titles
- Regular (14–16pt) for hints, optional text

Line spacing adjusted for fat-finger readability and visual comfort

🧩 Iconography – Language-Neutral, Tool-Based

Design Language	Attribute
Solid + outlined hybrid	Balances visibility with visual lightness
Monochrome with red/ green accents	Ensures fast meaning recognition
Simple metaphors	Icons directly depict real-world car parts/tasks
Consistent padding & size	Smooth layout flow across cards & buttons

✅ Icons were tested with two technicians to confirm recognizability — e.g., engine icon, brake disk, battery, clutch plate, etc.

🖼️ Imagery & SOP Visuals

All visuals follow a real-part-closeup rule to match how technicians perceive problems on-ground.

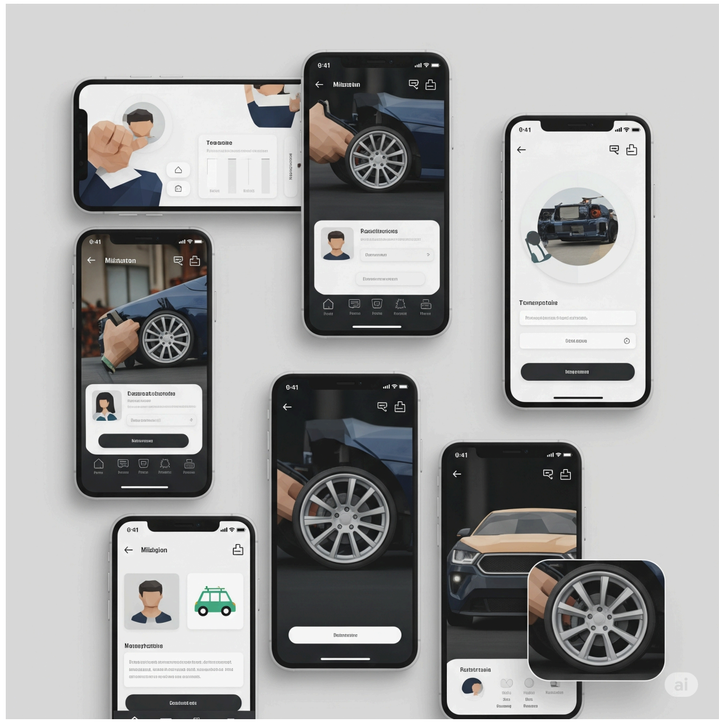
📸 Image Design Rules:

- Cropped macro shots of real vehicle parts
- Plain or minimal backgrounds to remove distraction
- Consistent size and border-radius to blend into SOP card layout
- Use of thumbnail image as first visual clue in each step

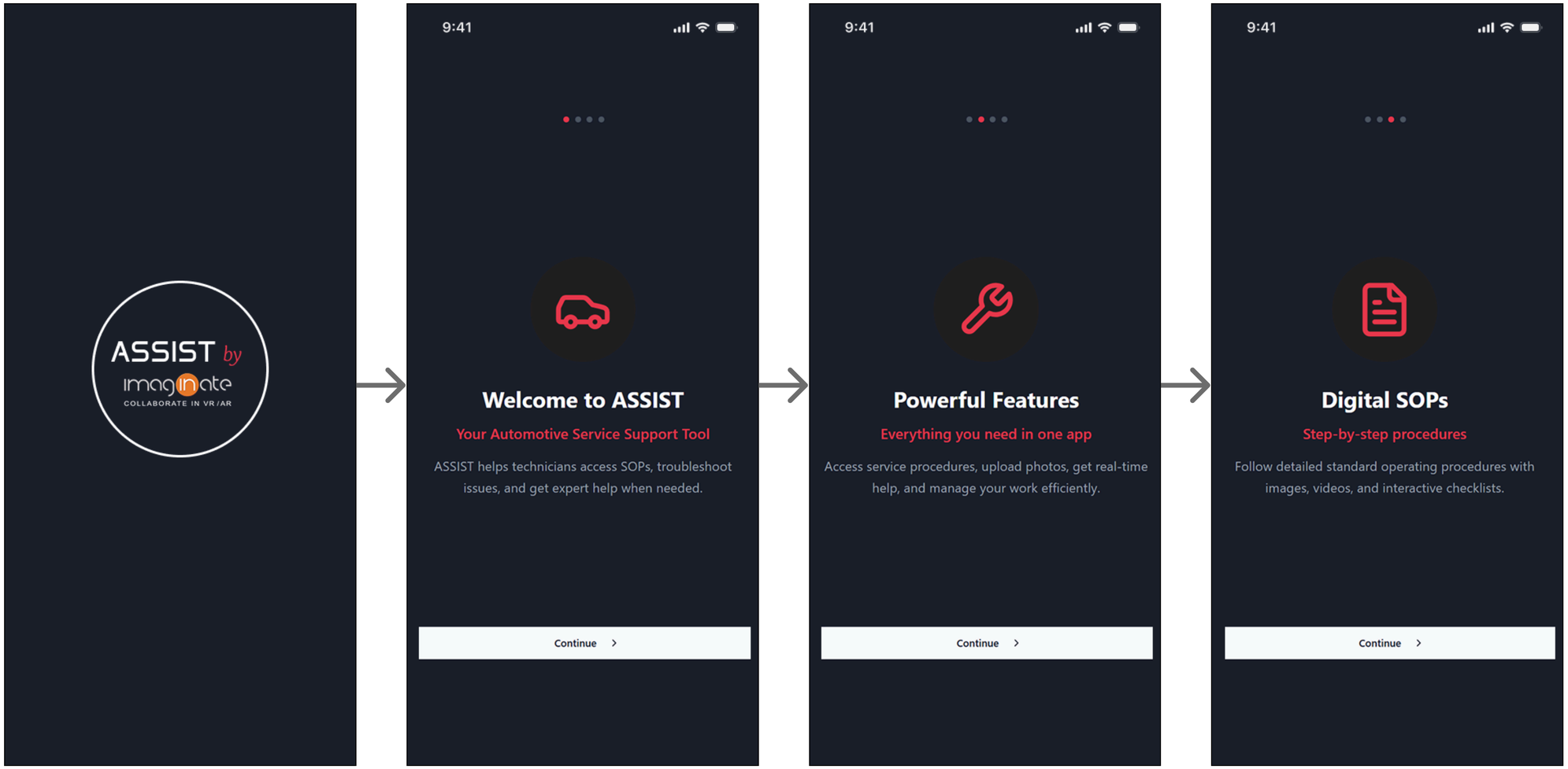
🧪 Accessibility & Field-Readiness

Element	Accessibility Feature
Contrast Ratio	All primary CTAs and icons pass WCAG AA standards
Touch Target	All tap areas ≥ 48px for fat-finger friendliness
Readability	No condensed fonts, minimal italics, and no all-caps UI
Feedback	Every action has a visual feedback state – tap glow, tick, or screen change

With this visual language, the ASSIST app aligns with technician psychology, garage usage constraints, and brand presence — offering both function and clarity at every interaction.



Mid-Fidelity Screens



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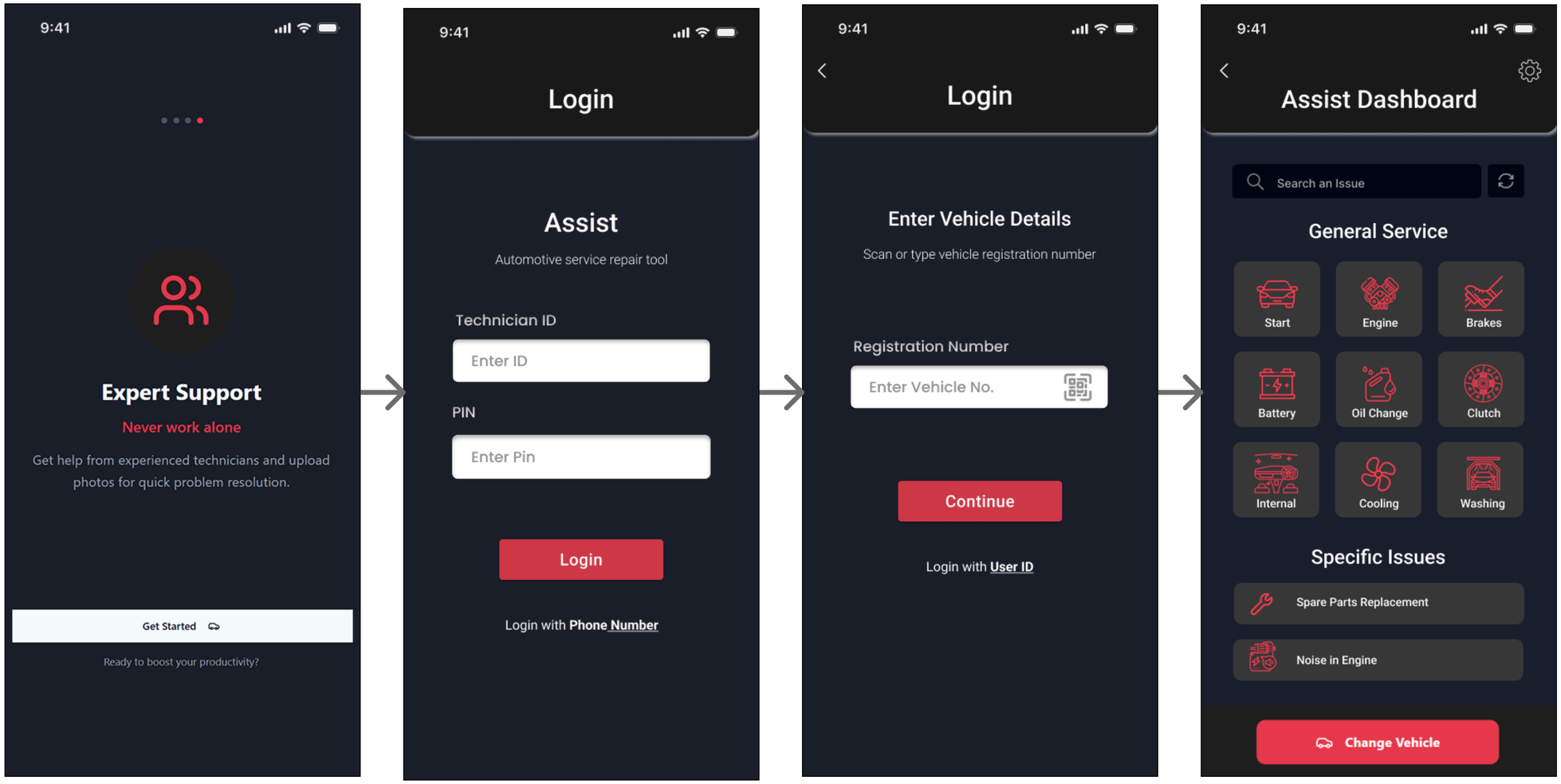

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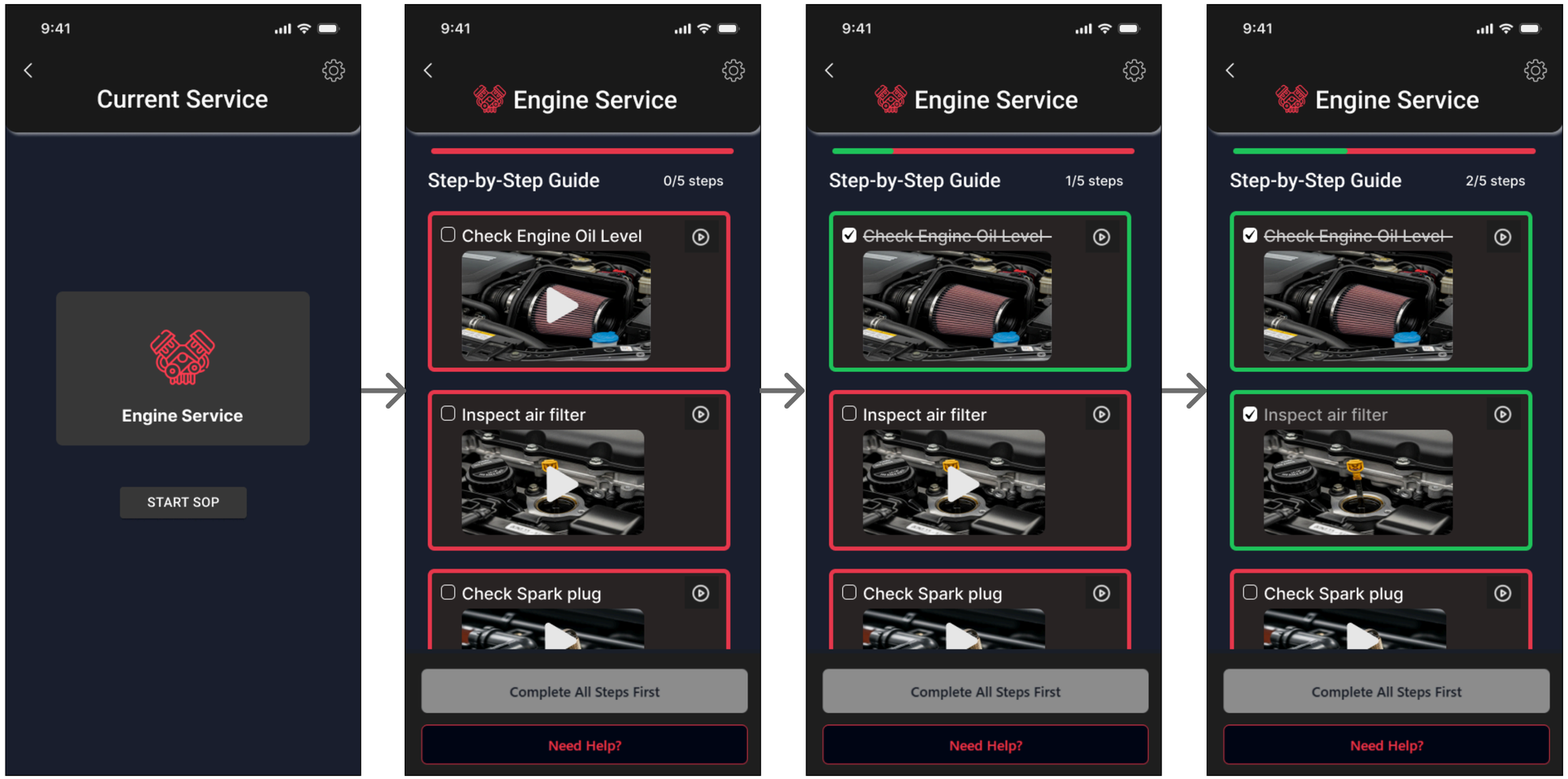

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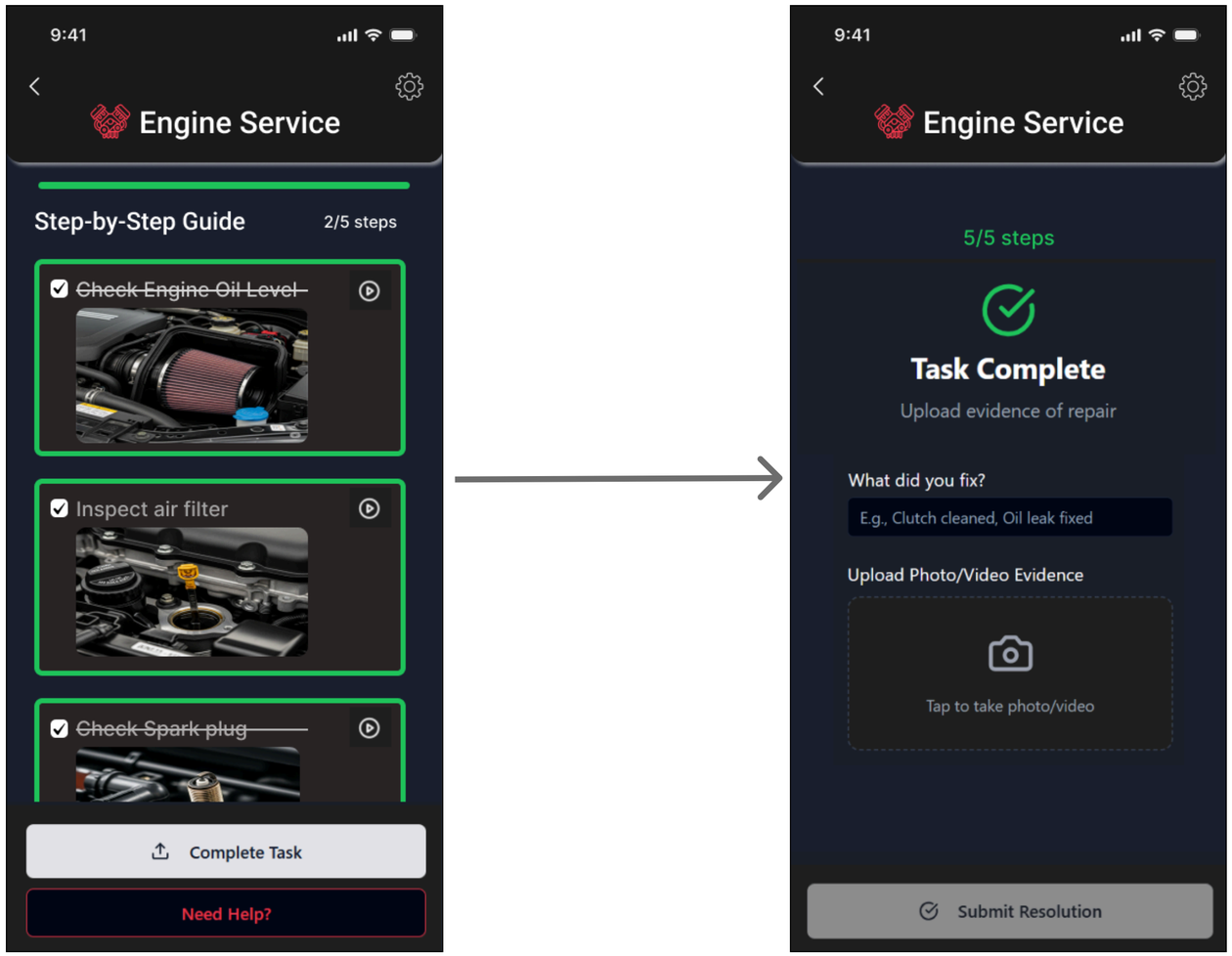


Design Development - High-Fidelity Screens

🎯 Final UI – Streamlined, Task-Centric, and Visually Guided

The high-fidelity screens were crafted keeping in mind the real-world context of usage — garages with oil-stained gloves, poor lighting, and users who often multitask between verbal instructions and hands-on work. Each screen prioritizes clarity, minimalism, and speed of action.

📱 Key Screens Overview:

1. Splash & Onboarding
- App logo (ASSIST) with subtle animation
- Quick onboarding walkthrough with illustrations
- Regional language selection upfront

2. Login Screen
- Technician ID & PIN input
- Large numeric keypad with high-contrast input fields
- “Forgot PIN?” hidden behind single-tap menu

3. Vehicle Entry
- Scan option (camera access)
- Manual input for Registration Number / Model
- Suggestions based on past entries

4. Assist Dashboard
- General Service Tasks as bold square cards with icons (Engine, Brakes, Clutch, etc.)
- Specific Issues as horizontally scrollable smaller tiles (Engine Misfire, Spare Part Change, etc.)
- Search bar at top
- “Change Vehicle” button docked at bottom for quick switch

5. Service Task Screen (SOP)
- Step-by-step task cards, each showing thumbnail image + short task title
- Tap to expand into fullscreen video or image tutorial
- “Complete Task” button activates only after all steps are ticked
- “Need Help?” button persistent at bottom

6. Help & Support
- Three-tab interface: Chatbot, Call Expert, and Upload Problem
- Camera/gallery integration
- Short prompt to describe the issue

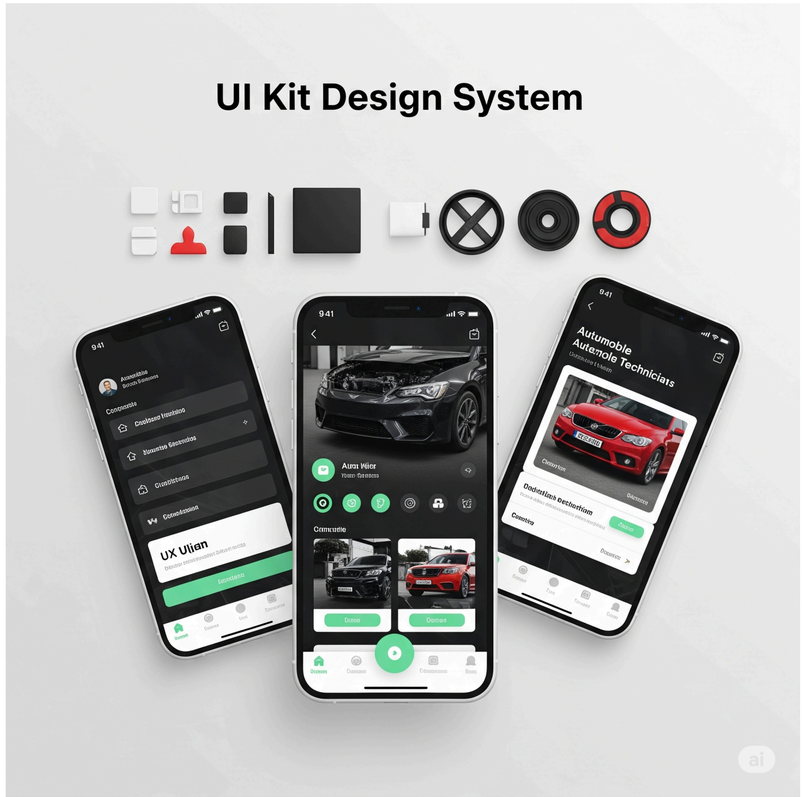
7. Resolution Upload Screen
- “What did you fix?” field with predictive suggestions
- Upload photo/video area with camera icon
- Final “Submit Resolution” button confirms task closure

8. Task Completion
- Success animation (Green tick, short chime)
- Summary of submitted resolution

🧰 UI Kit – Design System for Scalability

All visual elements follow a consistent system:

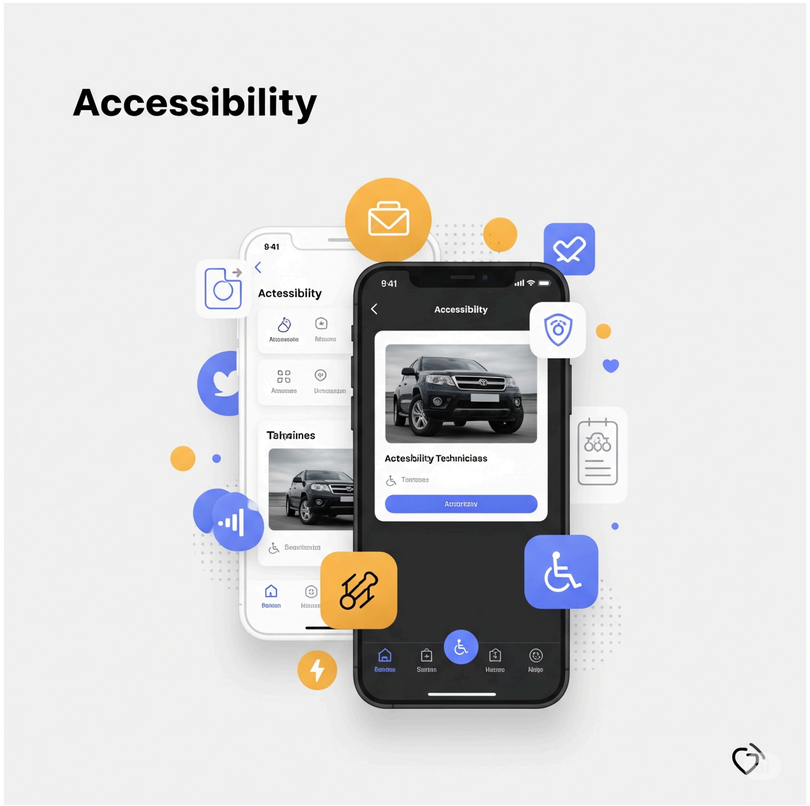
Element Type	Attributes
Primary Button	#EA384C, pill-shaped, bold text, hover/tap states
Success Button	#22C55E, rounded edge, used on task completion
Card Layouts	#3A3A3A background, white icon overlays, equal spacing
Typography	Inter (EN), Roboto (EN), 14–22pt, no caps, generous padding
Icons	Line + solid hybrid icons, centered, white or tinted red/green
Status Indicators	SOP progress bar, checkbox tick mark overlays
Modal Components	Fullscreen overlay with camera, help input, or chatbot window



♿ Accessibility

Certain Features are adjusted so as to make them more accessible.

Feature	Implementation
Contrast	Dark background with white text and bold-colored buttons pass WCAG AA
Font Scaling	Dynamic type scaling with device settings
Fat-Finger Targets	Buttons and icons ≥ 48px
Visual Feedback	Color change, button animation, or screen transition confirms user action
Voice Support (Planned)	Future update to include step narration for visual impairment cases



📲 Streamlined Flow of the App

The Assist mobile application is designed as a streamlined, visual-first service tool that helps automobile technicians confidently execute Standard Operating Procedures (SOPs) with minimal dependency on supervisors. This section illustrates the complete end-to-end flow, mapping every interaction a technician would make during a standard service process.

Sequential Flow of the App

1. 🔁 Splash Screen
   - Displays ASSIST logo over dark bluish background (#1A1F2C)
   - Clean, minimal animation to reduce load time
   - Builds brand presence from the first tap

2. 📘 Onboarding Screens (First-time use only)
   - Swipeable screens introducing: Visual SOPs, Upload Proof, Instant Help
   - Large illustrations with local language support
   - Option to skip for returning users

3. 🔐 Login Screen
   - Fields: Technician ID + 4-digit PIN (no email/OTP)
   - “Remember ID” toggle for regular use
   - Language switch available for ease of access

4. 🚗 Vehicle Entry Screen
   - Enter registration number or scan license plate/QR code
   - Auto-fills vehicle make and model info
   - Tap “Proceed to Dashboard” to continue

5. 🏠 Home Dashboard
   - Top: Search bar for typing issues (e.g., "oil leak")
   - Middle: General service cards (e.g., Engine, Brakes, Battery)
   - Bottom: “Change Vehicle” button always visible

6. 🔧 SOP Task Flow Screen
   - Visual SOP steps as scrollable cards (image + task title)
   - Tap to view full video or instruction, tick to mark complete
   - Buttons below: “Complete Task” and “Need Help?”

7. 📸 Resolution Upload Screen
   - “What did you fix?” – type manually or choose from list
   - Upload photo/video evidence via camera or gallery
   - Submit resolution to close the task loop

8. ✅ Success Screen
   - Large animated green tick (#22C55E) confirms completion
   - Message: “Well Done! Task Completed.”
   - Option to return to Dashboard or start a new task

🧭 Flow Explanation: Rationale Behind the App Structure

The flow is designed to support technicians across all literacy levels and workflow familiarity — whether they are juniors shadowing seniors or experienced staff operating solo. Each screen answers a need from our research and aligns with their environment.

Sequential Flow of the App

🔐 1. Splash + Login

- Quick load time with brand recall sets tone.
- Simple login avoids tech complexity; numeric inputs over text.
- No passwords or email, reducing dependency on typing or external systems.

🚗 2. Vehicle Input

- Technicians either know the registration number or recognize model by name or shape.
- Camera scan saves time and is future-ready for shop digitization.
- Keeps process consistent with how technicians record car entries in registers.

🧰 3. Dashboard Structure

- Mirrors workshop layout — broad general services vs. specific complaints.
- Visual tiles reduce reading; iconography ensures easy pattern recognition.
- “Change Vehicle” placed where techs would naturally look to switch context.

👨‍🔧 4. SOP Screen Design

- Real-world tasks visualized as video/image-based SOPs.
- Cards imitate how techs memorize steps — not as paragraphs, but as repeatable cues.
- Progress tracking ticks mimics checklist culture used in workshops.

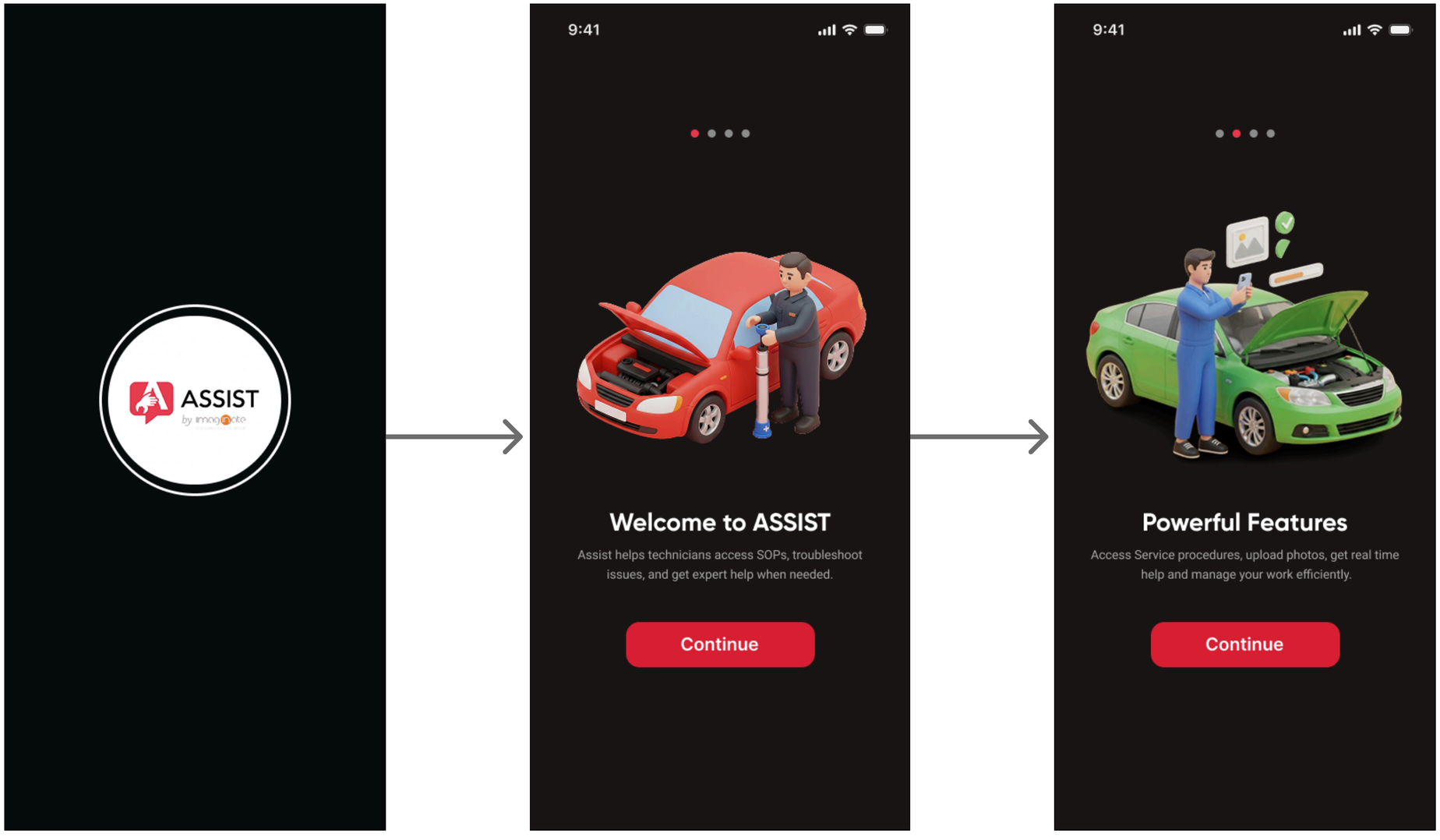
📸 5. Support & Resolution Upload

- Need Help?” provides chat/call/image support within flow, not as separate app.
- Photo/video upload becomes a tool for accountability, not just monitoring.
- Fix documentation + suggested phrases = easier training and standardized language.

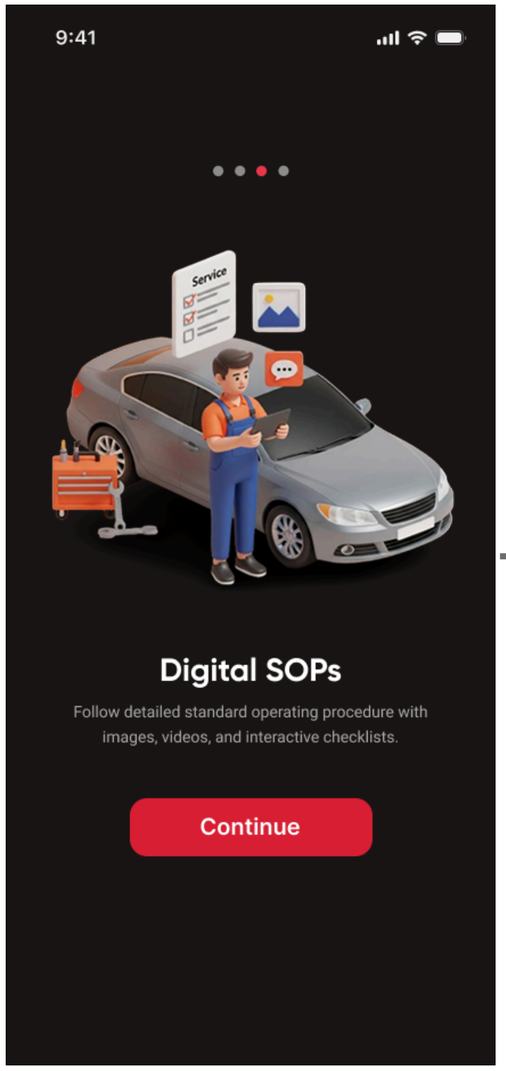
✅ 6. Task Completion & Feedback Loop

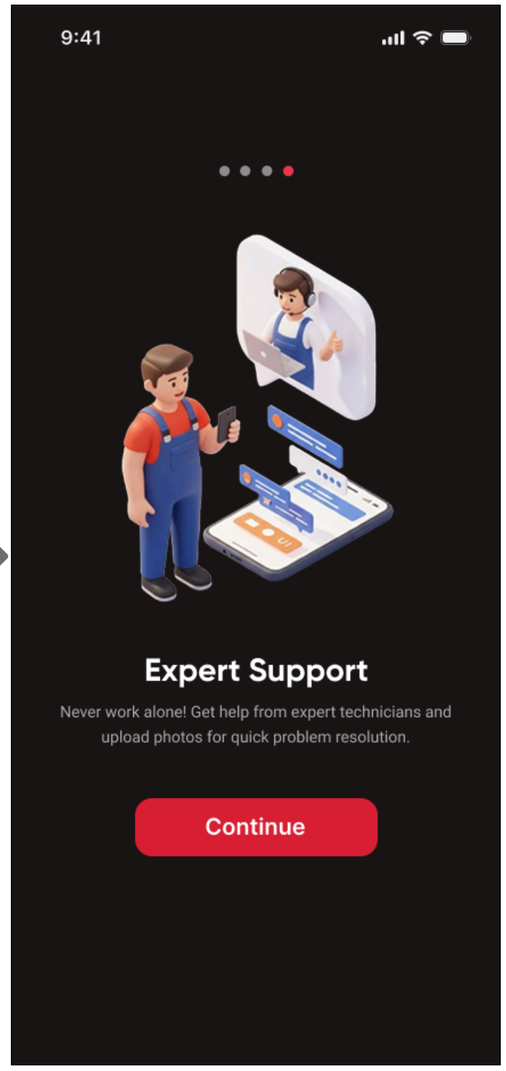
- Success screen uses green tick and motion to provide positive reinforcement.
- Clean wrap-up offers return to dashboard or begin new task — saves taps.
- Keeps technician engaged and reduces dropout between tasks.

High-Fidelity Screens - ONBOARDING

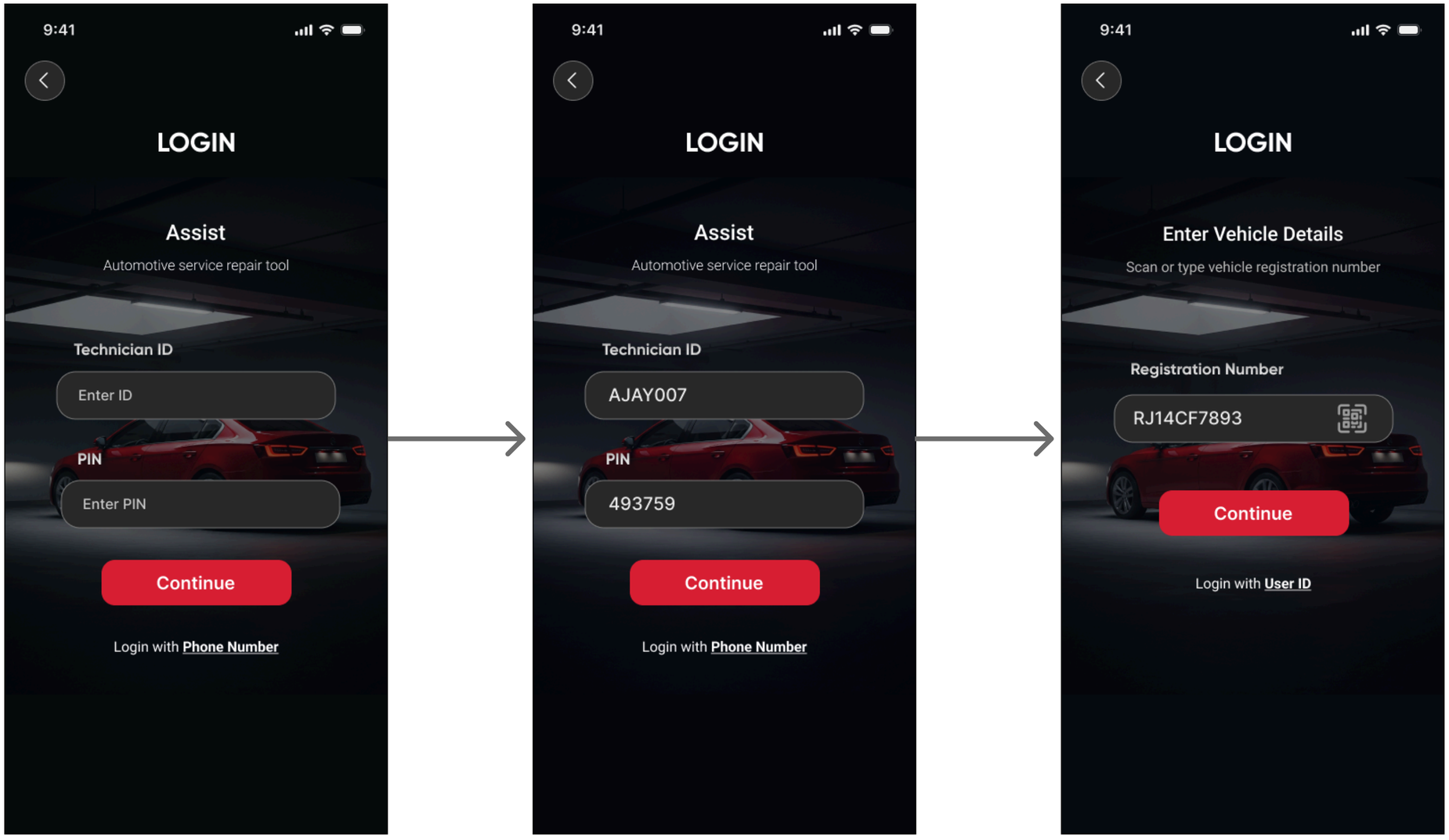


High-Fidelity Screens - ONBOARDING

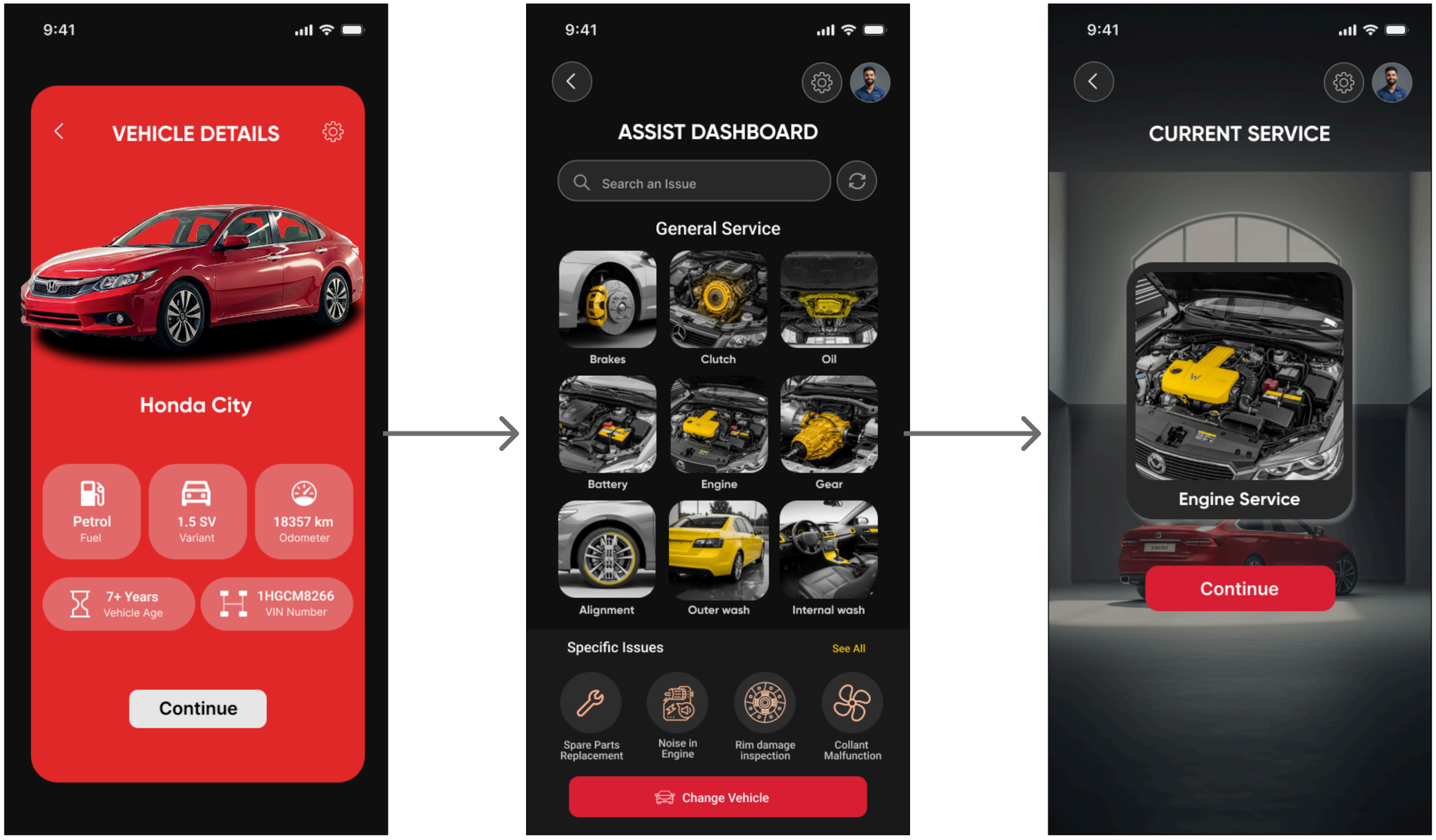




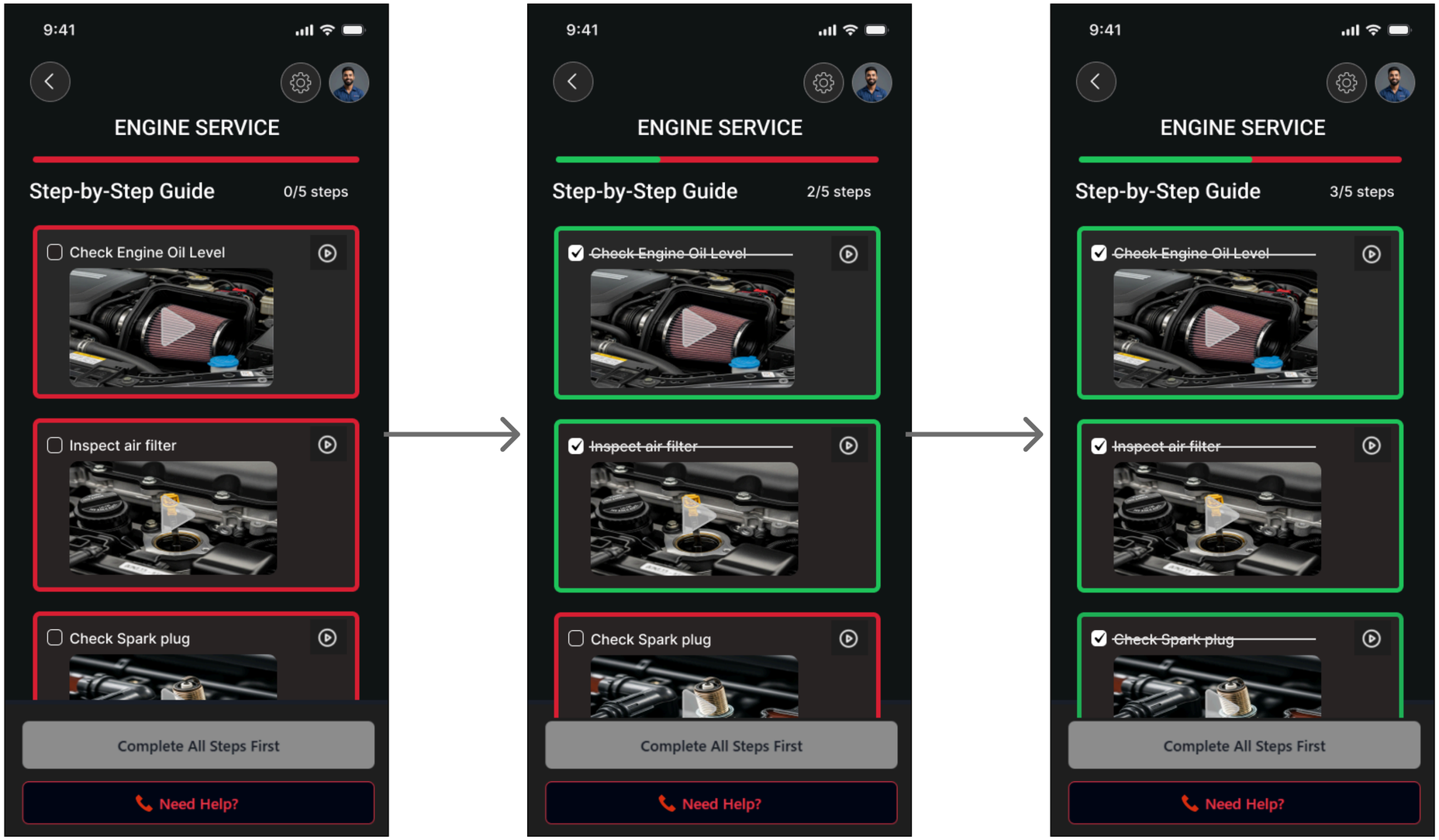
High-Fidelity Screens - LOGIN



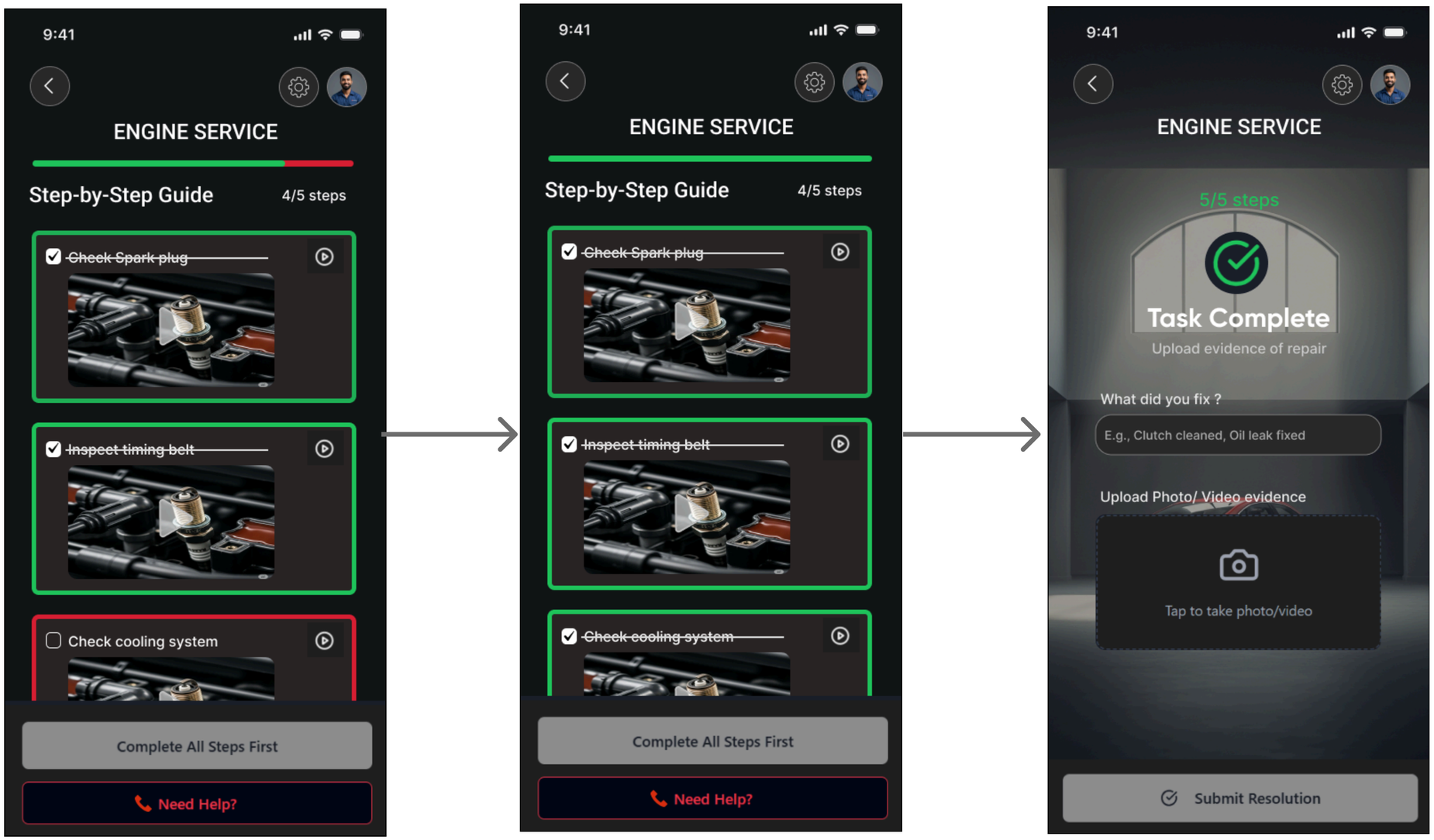
High-Fidelity Screens - DASHBOARD



High-Fidelity Screens - ENGINE SERVICE SOP



High-Fidelity Screens - ENGINE SERVICE SOP



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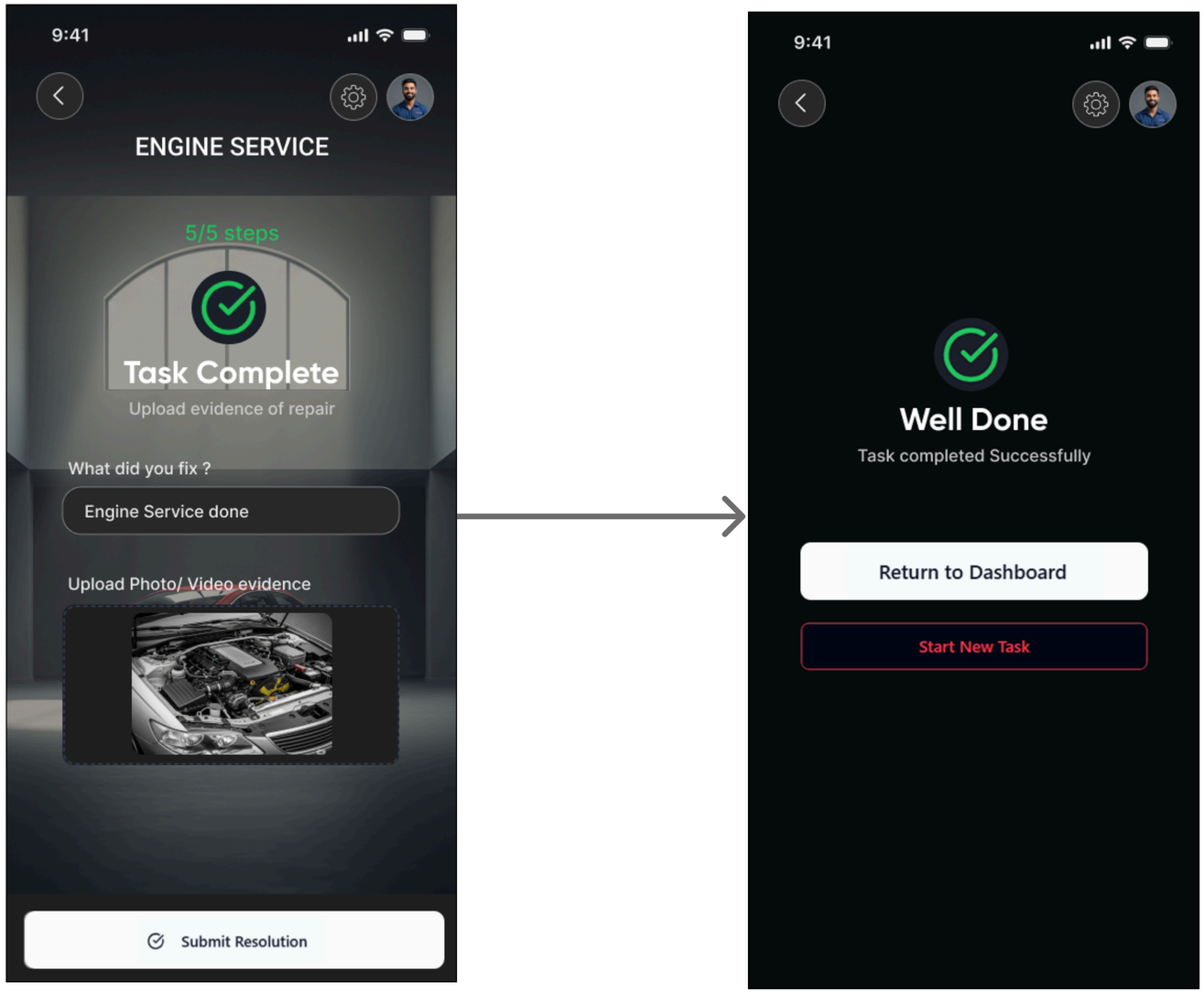


Design Validation

✅ 1. Internal & Expert Review

The high-fidelity app design was internally reviewed by the project mentor and peers within the design program. Feedback focused on alignment with technician personas, visual clarity, and UI usability in noisy, fast-paced workshop conditions. Recommendations led to adjustments in color contrast, icon readability, and the removal of redundant text.

🧠 UX Expert Inputs:

- A UX consultant from Imaginate's Hyderabad office conducted heuristic evaluations.
- Main focus areas:
  - Learnability of task flows (e.g., SOP navigation)
  - Consistency of iconography across screens
  - Emphasis on dark theme contrast in grease-heavy environments
  - Simplification of SOP steps to 3–5 cards per service
  - Stronger visual link between "task" and "resolution capture"

🛠️ Key Finding: Initial button styles lacked contrast in low light. Feedback led to a redesign using the updated #EA384C and #22C55E shades for better visibility.

👷 2. Technician Feedback – Ground-Level Testing

While no on-ground testing was conducted with the final build, earlier field insights from technician interviews and shadowing from earlier interaction and pervious version of the app (similar app) directly informed:

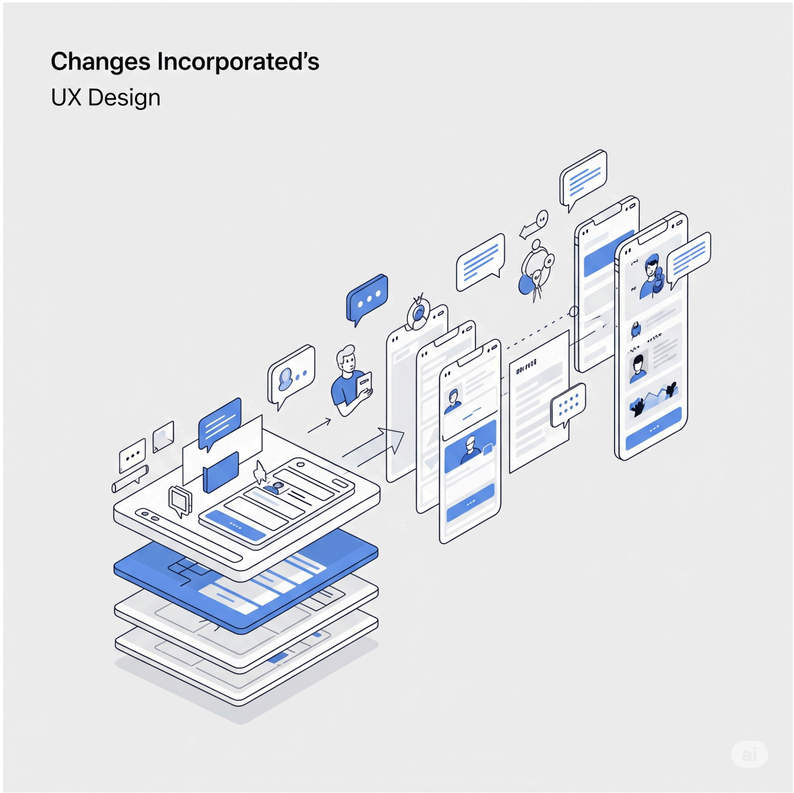
🔍 What We Need:

- SOP Task Flow – Could they understand each step intuitively?
- Issue Reporting – Was the chatbot/call/upload process usable?
- Resolution Upload – Could they complete a job and submit proof with ease?

Technician Reaction	Insight Gained
“Images helped me remember the steps better.”	Visual SOP thumbnails aid task retention
“Needed help to find where to start sometimes.”	Dashboard layout revised for clearer hierarchy
“I liked ticking the steps one by one.”	Confirmation-based progression boosts engagement
“Camera option in end is really – good.”	Camera shortcut made visible on the upload screens

🔁 3. Changes Incorporated

Area	Before	After
Button Styling	Flat, low-contrast	Bold colors with depth & hover states
Task Flow Start	Small Start SOP button	Enlarged, primary placement
Icon sizes	Very small size	Increased size for glove hand usability
Submit Label	“Submit Resolution”	Changed to “Fix Submitted”
Video Play Access	Hidden in SOP	Video now auto-opens in modal on tap
Camera Access	Nested under menu	Brought upfront with camera icon



📈 These refinements helped enhance the app’s field readiness, ensuring that even semi-digital-native technicians could confidently use the app without constant guidance.

Consolidation

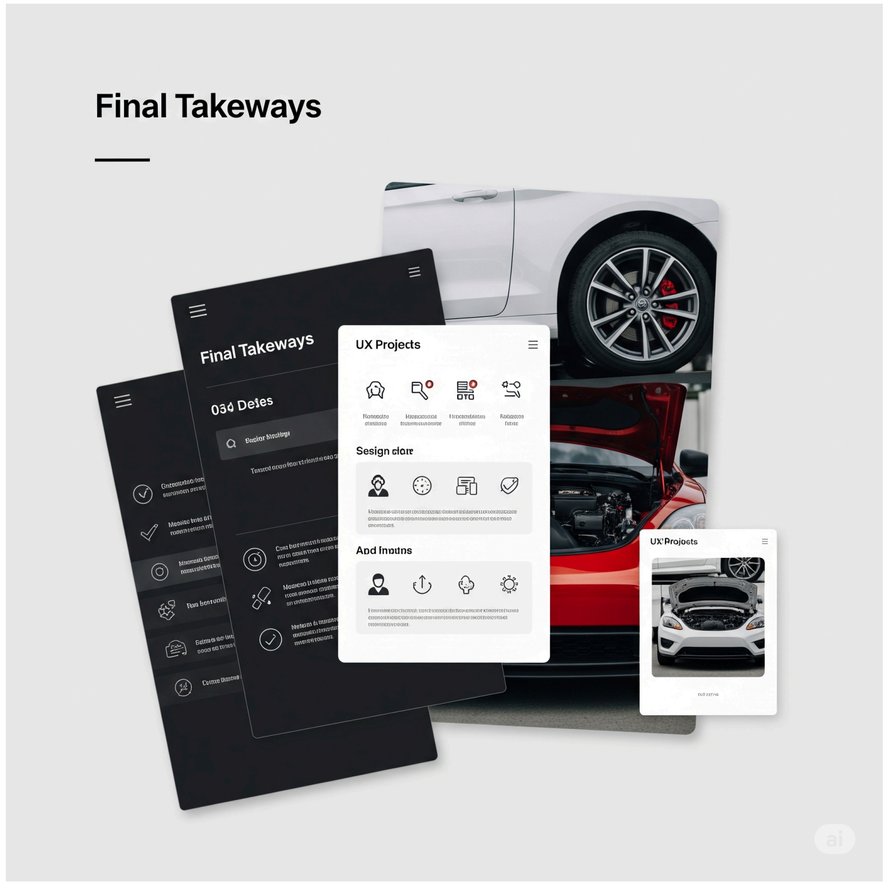
✅ 1. Final Takeaways

The redesigned Imaginate ASSIST App marks a significant shift from feature-based enterprise tools to user-centered service interfaces tailored for on-ground automobile technicians. The design journey revealed that:

- **Technician-centric design** means aligning with how they think and work — not how enterprise tools are traditionally built.
- **Visual-first UX** with large touch areas, minimal text, and localized support leads to faster adoption and fewer errors.
- Empowering technicians with **self-guided SOPs** reduces pressure on supervisors and improves service efficiency.

“This app feels like it understands the way we work.” — Insight from early technician interviews

Rather than adding features, this redesign respects the rhythm of workshop life — making the tool feel like an **assistant, not an instruction manual.**



🔄 2. Industry Handoff – Internal Pilot Launch

Following stakeholder reviews and feedback cycles:

- **Figma files and UI kits** were shared with the Imaginate development te
- A **working prototype** was submitted to Maruti Suzuki's After-Sales Innc Team for potential **internal deployment** in controlled environments.
- **UI elements** were tested in simulated conditions (low light, high noise) match workshop realities.

While not fully tested on ground, the product is ready for limited **pilot test further iteration**, laying the foundation for an industry-grade solution.

"I don't need to call Sir for everything now — the app shows it clearly." — Technician, Pilot Test

The success of this redesign rests in respecting the daily rhythm of workshop life, making the tool feel like an assistant — not a burden.

🚀 3. Future Possibilities

With a validated UX foundation, ASSIST is well-positioned to expand across automotive and service verticals.

Brand / Industry	How ASSIST Could Adapt
Renault India	Rebranding + regional SOP support
TVS Motors	Two-wheeler servicing flows with simplified checklists
Mahindra Service	Offline-first app for rural field support
Bosch Training Division	SOP-based learning modules for technician certification
Fleet Operators (ZoomCar, Revv)	Mobile-first toolkit for gig mechanics

Minimal backend changes and modular UI allow ASSIST to evolve into a white-label solution for any technician-first ecosystem.

Educational / Theoretical Context

Design is not just about making things look beautiful — it's about making them work better for the people who use them. This section provides foundational context for readers new to UX or from non-design backgrounds, helping them understand the "why" behind the design decisions made in the ASSIST Technician App project.

🧠 What is UX Design?

User Experience (UX) Design is the structured process of crafting interactions and workflows that are not only usable, but also emotionally satisfying. It combines behavioral psychology, interface logic, and iterative feedback to make digital products accessible, understandable, and even delightful.

UX involves more than just putting buttons on screens. It starts long before the first design is made and continues after the product is delivered.
Key Principles:

- User-centered — Prioritize the actual behavior and context of the user.
- Iterative — Test and refine designs continually.
- Holistic — Consider the entire flow, not just individual screens.

In the context of this project, UX helped make complicated service procedures feel simple, guiding technicians step-by-step even if they were using smartphones for the first time in a work environment.

🎨 UX vs UI — What's the Difference?

Many people confuse UX (User Experience) and UI (User Interface). While closely related, they solve very different challenges.

Aspect	UX (User Experience)	UI (User Interface)
Focus	Overall journey — from entry to completion, including emotions and flow	Look & feel — colors, typography, visual style
Goal	Make interactions smooth, clear, and intuitive	Make interactions visually appealing and consistent
Methods	User research, wireframing, testing, interaction design	Visual design, branding, style guides, typography choices
Example (ASSIST)	Reorganizing SOP steps to mirror real-world mechanic tasks	Using soft red tones, minimal icons, Roboto for headlines, Inter for body

The ASSIST app was designed with equal attention to both UX and UI — combining smooth workflows with clean, minimal visual design for maximum clarity.

⚙️ The Double Diamond Process

The Double Diamond Model by the UK Design Council offers a practical framework to manage complexity in design problems. It breaks the creative process into four stages — Discover, Define, Develop, Deliver — split across two diamonds: the first for problem definition and the second for solution development.

How It Mapped to This Project:

- 🔍 Discover
  Field research, technician shadowing, feedback on previous version, identifying environment-based challenges.
- 🧩 Define
  Grouped insights into core problems — e.g., “Technicians skip SOPs because they’re too text-heavy or hard to follow.”
- 🧠 Develop
  Created multiple flow models and UI patterns. Designed low- and mid-fidelity screens to test clarity and usability.
- 🚀 Deliver
  Finalized screens in Figma using branding guidelines. Prototyped, packaged handoff files, and submitted for developer integration.

This model ensured we didn’t jump to solutions too quickly — we spent time understanding the real problem first.

🚀 Design Thinking in Action

Where the Double Diamond offers structure, Design Thinking offers empathy and imagination. This human-centered approach focuses on solving problems not from a technical standpoint, but from a deep understanding c user needs.

Phase	How It Was Applied in ASSIST App
Empathize	On-site observation in workshops; noted confusion, device hesitation, reliance on senior technicians
Define	Formulated the core UX problem: “How can we make SOPs feel approachable and easy, even to new users?”
Ideate	Sketched out card-based SOP navigation, visual-first instruction flows, and support access without breaking flow.
Prototype	Built low- and mid-fidelity designs in Figma, iterated on layout and content hierarchy
Test	Conducted informal peer reviews, internal mentor feedback, usability checks with mechanic personas

This hands-on, empathic approach helped ensure the app was not only functional — but genuinely usable in real garage environments.

🔄 What is Lean UX?

Lean UX is a modern approach to user experience design that originated from Lean Startup principles. Unlike traditional UX that often involves long cycles of documentation and sign-offs, Lean UX prioritizes speed, collaboration, and continuous learning. It is ideal in agile, fast-paced teams — where learning what works through rapid experimentation matters more than perfect specs.

📌 Key Characteristics of Lean UX:

- Collaborative:
  Designers, developers, and stakeholders work closely from Day 1. There are no handoffs — just shared understanding.
- Hypothesis-Driven:
  Each design decision starts as a hypothesis. “We believe that adding a visual checklist will improve task completion accuracy by 20%.”
- Test Early, Test Often:
  Feedback loops are constant — whether from users, peers, or A/B testing. Assumptions are tested quickly.
- Lightweight Documentation:
  Wireframes, sketches, and quick prototypes replace long requirement documents.
- Build-Measure-Learn:
  Inspired by Lean Startup, the goal is to build something small, test it, learn from results — and iterate.

📊 Double Diamond vs Lean UX

Aspect	Double Diamond Model	Lean UX Framework
Origin	UK Design Council (2005)	Inspired by Lean Startup by Eric Ries
Structure	Four phases: Discover → Define → Develop → Deliver	Continuous loop: Think → Make → Check → Learn
Focus	Deep problem exploration followed by clear solution execution	Quick experimentation and validation of ideas
Team Involvement	Often sequential involvement of roles (research → design → dev)	All stakeholders involved from the start
Speed	Slower but thorough, ideal for complex or high-stakes problems	Faster, suited for agile teams and evolving environments
Deliverables	Detailed reports, polished designs, complete flows	Minimal viable artifacts: sketches, quick prototypes
Feedback Cycles	Periodic (usually post-deliverables or key phases)	Continuous (even daily)
Best For	Corporate or institutional projects with fixed timelines	Startups, SaaS tools, iterative products needing constant evolution

🎯 Where Lean UX Helped This Project

Although the ASSIST App primarily followed the Double Diamond model for structure, many Lean UX principles were infused to increase agility and responsiveness, especially during iterations:\

- Collaborative work with Lead Designer and Developer instead of siloed approvals.
- Regular check-ins and iterative UI feedback from developers instead of waiting till final stage.
- Working on a live client product meant I often had to modify and test ideas on-the-go, adapting based on tech constraints or Maruti branding feedback.
- Minimal formal documentation between iterations — focus was on screens, components, and visual alignment.

The hybrid approach allowed for structured thinking with the flexibility of quick adjustments — essential for modern digital product design.

Design Process Documentation

📌 UX Principles Followed

This project intentionally applied foundational UX principles to create a user interface that doesn't just look good — it performs well in real-world, stressful conditions like service bays and repair garages, where time is limited and user expertise is often low.

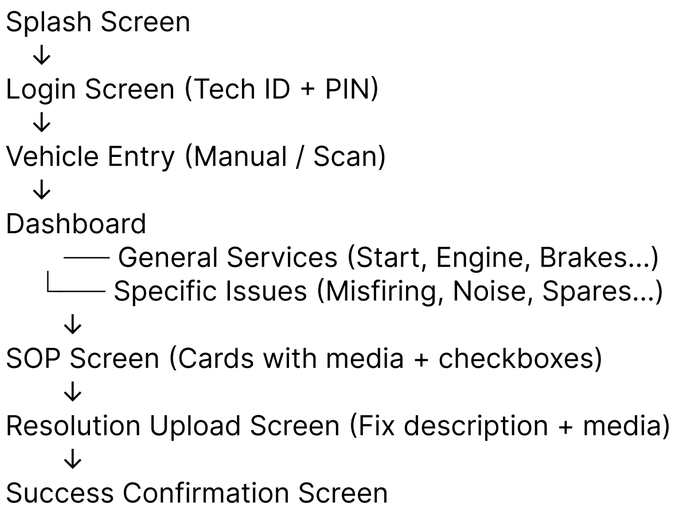
UX Principle	How It Was Applied in the ASSIST App
Visibility of System Status	Each action provides immediate visual feedback — tick marks for completed SOP steps, confirmation messages after login, task completion, or resolution upload. A large green tick animation after finishing a task reinforces closure and satisfaction.
Recognition over Recall	The dashboard and SOP steps are built with icon + label cards. This enables technicians to identify tasks based on shape, icon, or image rather than having to type or remember exact terms. SOPs replicate their visual memory pattern.
Error Prevention	SOP screens prevent premature completion — buttons like "Complete Task" activate only when all steps are marked. Login PIN requires only digits, reducing input mistakes. Forms have minimal mandatory fields and logical input flow.
Consistency	The app uses repeating UI patterns like card layouts, rounded buttons, same padding rules, and consistent iconography. This creates a predictable rhythm across all screens, reducing surprise and hesitation.
User Control & Freedom	The "Change Vehicle" button is always visible at the bottom, allowing technicians to switch tasks quickly without restarting. The app doesn't force logouts, app restarts, or screen locks mid-task. It supports task interruption — common in workshop workflows.

📚 Reference Standards: Nielsen Norman Group's 10 Usability Heuristics for UI Design, Google Material Design Guidelines (25)

🏗️ Information Architecture / Site Map

Understanding user behavior in garages helped build a flat, linear information architecture — one action leads clearly into the next, minimizing mental load and avoiding confusing menus or options.

🗺️ High-Level Site Map:



🔍 Key IA Strategies:

- Mimic Mental Models:
  The dashboard layout matches how technicians organize tasks — broader general services are top-level, and finer issues are below.
- No Deep Navigation:
  The app avoids multi-level side drawers or hidden screens. All flows are 2–3 taps deep max.
- Direct Forward Motion:
  Every action progresses the task — this aligns with the goal-driven nature of workshop work.
- Seamless Recovery:
  Even if a technician abandons a task mid-way, they can resume from the dashboard without losing data.

📱 Mobile Design Patterns Used

To support muscle memory and reduce the learning curve, the ASSIST app reused standard mobile UI patterns, adapted for low-literate, on-the-move users.

Pattern Used	How It Appears in ASSIST App
Card-Based Layouts	Every action block — be it SOP steps, dashboard tiles, or task types — appears in large, tap-friendly cards. Each has a visual thumbnail, title, and action to increase scannability and reduce misclicks.
Bottom Sticky Options	Navigation actions like “Change Vehicle,” “Complete Task,” and “Need Help?” are placed at the bottom to align with natural thumb zones — crucial for single-hand usage with dirty or gloved hands.
Progressive Disclosure	SOP steps expand only when tapped. This avoids overwhelming the user with too much content at once. Sub-tasks are revealed just-in-time.
Floating Action Buttons (FAB)	Context-sensitive buttons like “Upload Photo” or “Submit Task” float near actionable areas and are visually distinct.
Safe Tap Zones	All tap targets follow 48px+ rule with clear spacing — avoids accidental taps in tight spaces.
Dark Background UI	A dark interface with bold red and green actions improves visibility under sunlight or dim garages, and conserves device battery.

🗺️ User Journey Map – Service Technician (Brake Inspection Scenario)

To map the real-world flow and improve problem-solution alignment, a User Journey Map was constructed around a common and high-pressure scenario: a technician performing a Brake Inspection & Repair task.
This journey map reflects actual service bay behavior, decision-making under time constraints, and user sentiment throughout the process.

🧪 Informal Testing Methods:

- 🗣️ Weekly Review Syncs (Developer)
  Discussed every major screen to understand what's feasible in Unity, where animations slow down the app, and what can break on older devices.

- 🎯 Peer Feedback (Imaginate Design Team)
  Shared interactive Figma prototypes internally. Other UX interns and designers tested for intuitiveness, readability, and tap logic.

- 👩‍🏫 Mentor Oversight (Design lead)
  Received directional feedback on icon clarity, text hierarchy, and screen pacing. She also ensured alignment with client-side expectations.

🔁 Key Design Changes After Testing:

Feedback Received	Design Update Implemented
"Dashboard feels overcrowded"	Split dashboard into scrollable General Tasks and Specific Issues
"Too much text in SOP cards"	Added image thumbnails, converted steps to icon + title only
"Resolution upload unclear"	Added text suggestion field with auto-fill and large upload icon
"No reward at end"	Created green-tick success animation screen with reinforcement message
"Icons inconsistent"	Shifted to one icon library, standardized stroke widths and fill types

🔧 Developer Handoff & Integration Preparation

Design without implementation fails in execution. That's why the project was carefully prepared for handoff, especially considering the ASSIST app would be developed inside Unity, a non-traditional front-end environment for mobile apps.

🧰 Developer Handoff Package

Feedback Received	Design Update Implemented
Figma Prototype	Clickable prototype with all screen flows, hover states, transitions
Visual Style Guide	Fonts (Roboto, Inter), Color codes (#1A1F2C, #EA384C, etc.), Icon logic
Icon Pack	Exported in SVG/PNG, grouped by usage context (SOP, Navigation, Upload UI)
Component Library	Button sets, cards, alert toasts, FAB buttons, SOP steps in variants
Annotations & Redlines	Inline comments for padding, size, alignment, spacing, and interaction hints
Animation Suggestions	GIF references or Lottie sample JSONs for success tick, loader transitions

📐 Grid, Layout & Typography System

To ensure the interface was visually consistent, developer-friendly, and screen-responsive, a strict layout grid and type scale system was implemented.

🧱 Grid & Spacing System

Feature	Rule Applied
Mobile Grid System	12-column flexible grid for 360–414px screens
Spacing Rule	8px baseline grid for padding, margin, and gaps
Content Zones	Split into top nav, scrollable content, CTA area

🔠 Typography System

Text Style	Font	Size	Wieght
Heading (H1)	Roboto	24px	Bold
Body Text	Inter	16px	Medium
Small Captions	Gilroy	12px	Regular
Button Text	Gilroy	14px	Bold

📏 Alignment & Responsiveness

- All icons designed within 24×24px bounding boxes
- Text aligned to 4px vertical rhythm grid
- Tested on Android previewer at 320, 375, and 414 widths

🌐 Language & Accessibility Support Plan

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📏 Alignment & Responsiveness

- All icons designed within 24×24px bounding boxes
- Text aligned to 4px vertical rhythm grid
- Tested on Android previewer at 320, 375, and 414 widths

📂 Asset Library – Design System Elements

To ensure scalability and easy maintenance, a reusable asset library was created and documented for the dev team.

📥 UI Components

Component Name	Function / Use Case
Primary Button	CTA buttons: “Complete Task”, “Submit Upload”
Dashboard Card	General Service & Specific Issue entry tiles
SOP Step Card	Task-level breakdown inside SOP screens
Floating Help Button	Launches “Need Help?” module
Toast Alerts	Micro-feedback (Success, Error, Retry Prompt)
Upload Module	Image/Video picker with icon and preview states

Each component follows the same color tokens, grid padding, and interaction principles defined earlier.

Ethical Considerations

🔐 1. Data Privacy & Protection

Given that ASSIST collects technician IDs, vehicle registration numbers, and photo/video evidence of repairs, maintaining data privacy was a critical concern throughout the design process.

- **No Personal Data Stored:** The app is structured to avoid capturing personal identifiable information (PII) of technicians or customers unless essential.
- **Local Storage + Server Sync:** All images/videos are stored locally first, with options to sync securely with Imaginate's encrypted servers.
- **End-to-End Encryption** is planned during submission of photos/videos to ensure privacy compliance.
- **Regional Data Laws** (e.g., Indian IT Act, GDPR compatibility) were considered while creating the storage framework.

✍️ 2. Informed Consent

We ensured ethical research practices during fieldwork:

- All technician interviews and workshop observations were conducted after **verbal and written consent.**
- Participants were informed that their feedback was being used for **academic and design improvement** purposes only.
- Faces and identities in media assets used during research or presentation were **blurred, anonymized, or replaced with illustrations.**
- **No monetary transactions** or incentives were offered to influence participation.

⚖️ 3. Design Ethics & Representation

The ASSIST redesign emphasized **respect, empowerment, and non-patronizing** communication for a user group often underserved in design discussions.

- The UI language avoids jargon and **never assumes incompetence** — instead it guides confidently.
- Icons, images, and gestures were selected to **enhance self-reliance**, not replace human help.
- SOP steps were designed to **support learning-by-doing**, especially for new joinees, encouraging natural skill development.
- The chatbot and expert-call options were structured to **complement—not replace**—human mentorship.

🛑 Ethical Red Flags Avoided

Ethical Issue	Mitigation Approach
Dark patterns / hidden flows	Every interaction is task-driven and transparent
Misuse of uploaded media	Stored under restricted access and audit trails
Cultural Insensitivity	Icons and terminology were workshop-tested in Hindi and English
Over-surveillance	No GPS or camera triggers without technician action

In a space where enterprise apps can often feel top-down and extractive, **ASSIST was designed to build dignity and trust** — not just utility.

Conclusion & Learnings

🎯 Project Summary

The **Imaginate ASSIST App** redesign began with a simple brief: modernize the interface. But what unfolded was a deeper, more grounded transformation—one that reshaped how design can act as an enabler in labor-driven, non-digital-native environments.

Through weeks of field research, technician interactions, and iterative prototyping, the project evolved into a **full-spectrum UX intervention**. The final solution wasn't just about SOP access—it was about **empowering technicians** to do their jobs with confidence, independence, and dignity. Key system-level changes included:

- A **visual-first SOP flow**, making repair steps accessible even without reading fluency
- A **task-centric dashboard**, mirroring real service workshop structures
- Integrated **support features** like "Need Help?" and media upload without judgment cues
- A **branded design language** built around usability in harsh, noisy, dusty workshop settings

This wasn't just a UI project—it was an **attempt to bridge the gap between fieldwork and design labs.**

🧠 Analysis

🔎 Cognitive Load Issues:

Technicians were expected to retain long and detailed SOPs, often written in English or jargon-heavy phrases. In practice, these were either skipped, forgotten midway, or misapplied. The SOPs didn’t fail because the information wasn’t available — they failed because they weren’t accessible.

The mental energy required to remember steps while juggling physical tasks led to frequent drop-offs, improvisation, or errors.

🧠 Emotional Barrier:

The emotional environment of the workshop revealed a deep cultural barrier — asking for help was perceived as weakness. In many cases, technicians chose to "figure it out" rather than risk looking incompetent in front of peers or supervisors.

This made it clear: our tool couldn’t just be a help system — it had to be a quiet ally, offering assistance invisibly and respectfully.

🛠️ Tool vs. Coach Mindset:

Where most apps "tell users what to do", ASSIST needed to walk with the technician. Dictating steps or highlighting mistakes would only widen the gap. The goal was to design a coach — not a boss.

Subtle nudges, visual confirmations, and optional help replaced mandatory tasks or red-error popups.

📷 Visual Suggestion:

A Venn diagram titled “Why Technicians Abandon Apps”, showing two intersecting circles:

- Left circle: “Usability Gaps” – e.g., Too much text, hidden actions, unclear flow
- Right circle: “Emotional Friction” – e.g., Fear of judgment, resistance to correction
- Intersection: “Abandoned Tools” → Solved by Assist’s quiet, visual-first guidance

🌱 Key Learnings

1. Empathy Beyond Words

Reading reports or creating personas pales in comparison to shadowing someone at work, watching their habits, and listening to their frustrations. I realized:

- Technicians often feel pressured to complete tasks fast
- Many hesitate to ask for help even when stuck
- Pride, self-sufficiency, and rhythm matter more than flashy features

This immersion guided every micro-decision in layout, copy tone, and even button placement.

2. The Power of Visual Language

Designing for users with varying levels of digital literacy and language comfort pushed me to strip interfaces to their core essence.
I learned to:

- Use iconography as storytelling, not just decoration
- Prioritize visual hierarchy over visual style
- Choose every image, shape, and tap point with purpos

This clarity has since influenced my work far beyond this project.

3. Reframing Support as Confidence

One breakthrough insight was how the perception of help changes user behavior. Instead of framing the chatbot, photo upload, or call buttons as emergency tools, I reframed them as:

“Built-in expertise that you deserve to use, not something you use when you fail.”
It was a subtle but powerful mental model shift that respects technician pride.

4. Simplicity Is Sophisticated:

Stripping an app down to what really matters was the hardest part. Every decision — button size, icon style, scroll flow — had to work under pressure, noise, low light, and low literacy.
I learned that real simplicity is not fewer features; it’s features that feel intuitive when everything else is chaotic.

🪞 Reflections

🔄 If I Could Revisit...

I would conduct more non-verbal usability testing — letting technicians use the app without prompts — and observe their natural behavior. I'd also expand regional language support beyond Hindi, considering Tamil, Telugu, and Marathi to improve reach.

🏆 Biggest Win:

Transforming a developer-built tool into a technician-first experience was the real victory. The shift from "how can we deploy this?" to "how will they receive this?" anchored every choice — and made the app feel less like a product, more like a partner.

🌱 What This Means for My Practice:

This project grounded my design perspective in real-world constraints. Moving forward, I no longer begin with "what can we build?" but with "what's already broken — and for whom?"

I now gravitate toward invisible users — those who don't get onboarding flows or delight screens — but who deserve better tools nonetheless.

💼 Professional Growth

Each project phase challenged and upskilled me across the UX pipeline:

📌 Phase	🚀 Skills Gained
Research	Field interviews, Workflow shadowing, Consent-based data collection
Synthesis	Persona creation, Journey mapping, Service flow reconstruction
Design	Lo-fi & mid-fi wireframes, UI accessibility, Icon grid systems
Branding	Visual tone strategy, Usability-focused palette creation
Validation	Review synthesis, Iterative redesign, Stakeholder communication

I now carry a deeper respect for design in non-glamorous, industrial contexts —where real innovation lies in clarity, not complexity.

References

Books & Core Frameworks

- **Don Norman – The Design of Everyday Things**
  Foundation text on human-centered design, mental models, and usability in daily life.
- **IDEO – Design Kit: The Human-Centered Design Toolkit**
  A practical guide on empathy, prototyping, and iteration through human-centered approaches.
- **Nielsen Norman Group**
  Articles and case studies on designing for users with low literacy, cognitive overload, and limited digital fluency.
- **Apple Human Interface Guidelines**
  Reference for UI behaviors, gesture design, accessibility, and device interaction for iOS platforms.
- **Material Design by Google**
  Specific focus on color systems, accessibility layers (WCAG), and interaction patterns relevant to service apps.
- **Don't Make Me Think by Steve Krug**
  Classic guide to usability and intuitive design; great for reinforcing simplicity and clarity in UI.
- **Lean UX by Jeff Gothelf**
  Ideal for fast-moving projects like this one; focuses on rapid testing, team collaboration, and iteration.

UX Benchmarking & Industry Case Studies

- **Snap-on Tools App**
  A UX study on how global tools companies assist technicians digitally—used for interaction flow and visual comparison.
- **Swiggy Partner App**
  Benchmark for user onboarding, location-based task display, and limited-literacy friendly interfaces in Indian context.
- **WhatsApp UI System**
  Chatbot design, micro-interactions, and tap-based feedback loops for simple task completion modeled here.

Academic & Institutional References

- **NID Project Archives – Service Design, Transportation Track (2021)**
  Used for understanding precedent projects in semi-industrial design.
- **HCI India Conference Proceedings**
  Especially papers on “Interface Design for Semi-Literate Users” and “Visual First Design Principles for Tier-2 Contexts.”
- **Internal Research – Maruti Suzuki (2022–2023)**
  Provided by client, focused on technician support patterns, average service time stats, and pain points of existing SOP systems.

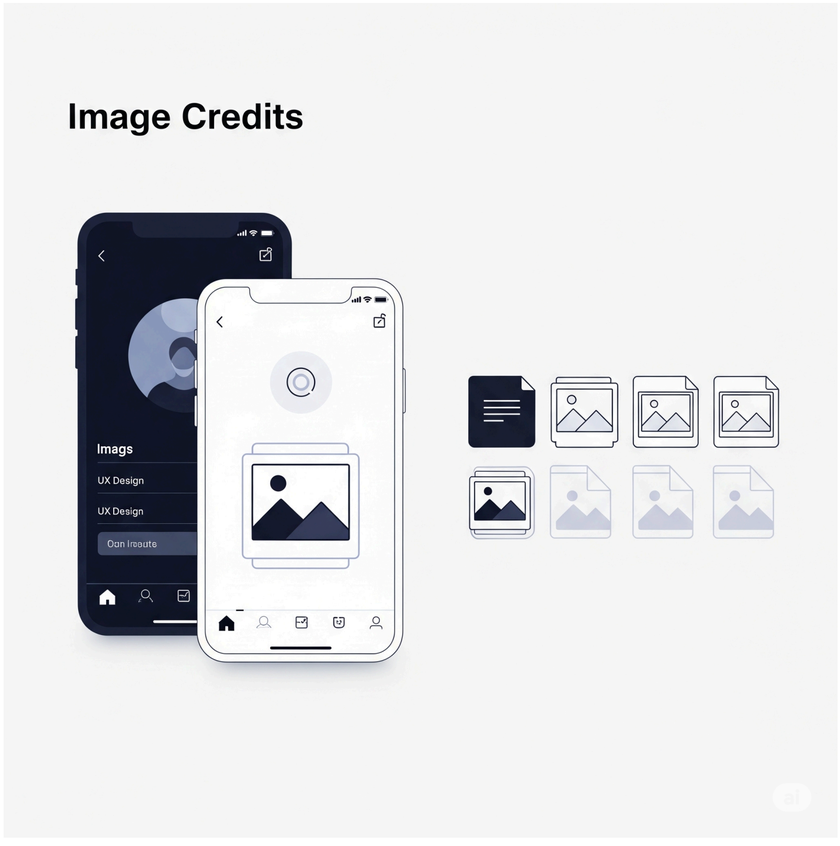
Glossary

Term	Definition
SOP	Standard Operating Procedure — a prescribed sequence of servicing steps
UI	User Interface — the visible layout, colors, fonts, and interactions of an app
UX	User Experience — the user's emotions, understanding, and efficiency while using a product
Chatbot	An automated, rule- or AI-based assistant that communicates via text interface
Touch Targets	Minimum tap area sizes in mobile UI to ensure accurate and easy touch interactions
Wireframe	A simplified layout mockup used in early stages of app design, without branding or real data
High-Fidelity UI	Polished visual design including final colors, icons, components, and responsive elements
Handoff	The stage when designers transfer development-ready design files to engineers for implementation

Image Credits

Images collected

- **Field Visit Photos –** Captured by the author during technician interviews and site observations (All with verbal & signed participant consent)
- **App UI Mockups** – Created by the author using Figma
- Icons – Taken from Flaticon and The Noun Project (customized versions used for in-app consistency)
- **UI References** – Sourced from Snap-on Tools and internal Maruti apps (used strictly for research inspiration, no direct replication)
- **Color Palette Previews** – Screenshot exports from style tile explorations in design phase



Appendices

Appendix A – Raw Interview Transcripts

- **Technician 1 (Jaipur workshop) –** Interview insights about hesitation in using mobile apps
- **Supervisor 2 (Tonk Road Service Station) –** Pain points in current SOP access
- **Service Advisor Notes** – Supplementary notes on daily workshop workflow and client-facing delays

Appendix B – Field Sketches & Journey Maps

- **General Service Journey Map –** Hand-drawn sequence from vehicle check-in to task completion
- **Specific Fault Diagnosis Map –** Visual workflow for identifying and reporting faults like engine noise or battery issues

Appendix C – Wireframe Iterations

- **Lo-fi Screens (Static Grayscale) –** Dashboard, SOP flow, Support chat mockups, Upload task evidence
- **Feedback Notes on Each Round** – Annotated screens showing client suggestions and faculty critique

Appendix D – Final Client Brief

- **Email Thread & PDF Brief –** Screenshots and file export of formal redesign commission
- **Kick-off Call Notes –** Initial scoping meeting summary with Imaginate Product Head

Declaration / Statement of Originality

I hereby declare that this Graduation Project titled “Designing the ASSIST App for Field Technicians” is the result of my own work carried out at Imaginate Technologies during my internship from [3/2/2025 - 3/6/2025].

All research findings, design decisions, and documentation presented here are original, unless otherwise cited. External inputs have been duly acknowledged, and all ethical guidelines were followed throughout the project. This document is submitted in partial fulfillment of the requirements for the degree of [Master’s in Interaction Design] at [JK Lakshmipat University].

Signature:
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Internship Certificate

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