

UNIVERSITY OF BUEA



REPUBLIC OF CAMEROON

PEACE-WORK-FATHERLAND

P.O. Box 63,
Buea, South West Region
CAMEROON
Tel : (237) 3332 21 34/3332 26 90
Fax: (237) 3332 22 72

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER ENGINEERING

UI DESIGN AND IMPLEMENTATION

By:

**BERINYUY CLETUS FE21A148
EFUETLATEH JOAN FE22A197
ETAPE NGABE FE22A210
ETIENDEM PEARL FE22A211
TATA GLEN FE22A309**

2024/2025 Academic Year

Table of Contents

| | |
|--------------------------------------|---|
| Table of Contents | 2 |
| 1 Introduction..... | 3 |
| 2 App Identity..... | 3 |
| 2.1 App Name | 3 |
| 2.2 Logo Design..... | 3 |
| 3 Visual Design | 4 |
| 3.1 Color Scheme..... | 4 |
| 3.2 Fonts and Typography..... | 4 |
| 4 Visual Design Strategy | 4 |
| 4.1 Design Principles Followed | 4 |
| 4.2 Wireframes and Mockups..... | 4 |
| 5 Frontend Implementation | 6 |
| 5.1 Technology Stack | 6 |
| 5.2 Folder Structure..... | 6 |
| 5.3 Pages Implemented | 6 |
| 6 Conclusion | 7 |

1 Introduction

This section outlines the design and frontend structure of the CarCare mobile application. Our goal was to create a user-friendly, functional interface that supports both car owners and mechanics. Through visual planning, mockups, and prototyping, we built a system that is not only easy to navigate but also aligns with the app's identity and intended use cases.

2 App Identity

2.1 App Name

The app is named **CarCare**, representing its goal of helping users identify, understand, and resolve car faults efficiently. It is designed for two user types: **car owners** and **mechanics**.

The identity emphasizes approachability, reliability, and intelligent assistance. The app acts as a friendly and practical assistant for vehicle owners, while also allowing mechanics to provide verified service information.

2.2 Logo Design

The logo features a **teal car outline** with a heartbeat line and a wrench symbol, visually representing car diagnostics and repair. This logo helps reinforce our identity as a car maintenance assistant.



3 Visual Design

3.1 Color Scheme

We selected **Teal** as the primary color for the app, which represents calmness, trust, and technology. The supporting colors include **white backgrounds**, **teal accents**, and **navy-blue highlights** chosen for high readability and a sense of professionalism when projected on white walls

- **Primary:** Teal (#00796B)
- **Secondary:** White (#FFFFFF)
- **Accent:** Light Teal / Aqua
- **Text Color:** Black or Navy-Blue

3.2 Fonts and Typography

We used clean, sans-serif fonts that are readable and modern. The font styling is consistent across headings, subheadings, and body text to ensure a polished look.

4 Visual Design Strategy

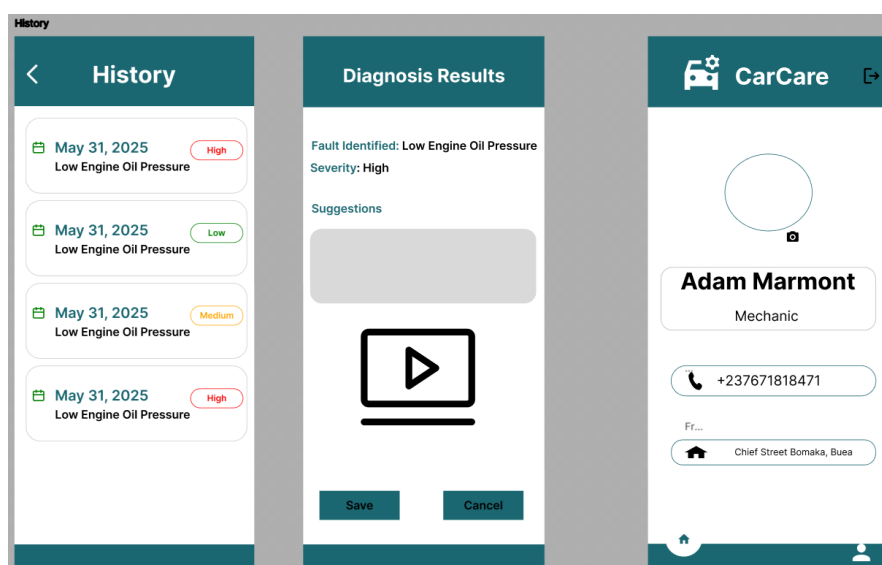
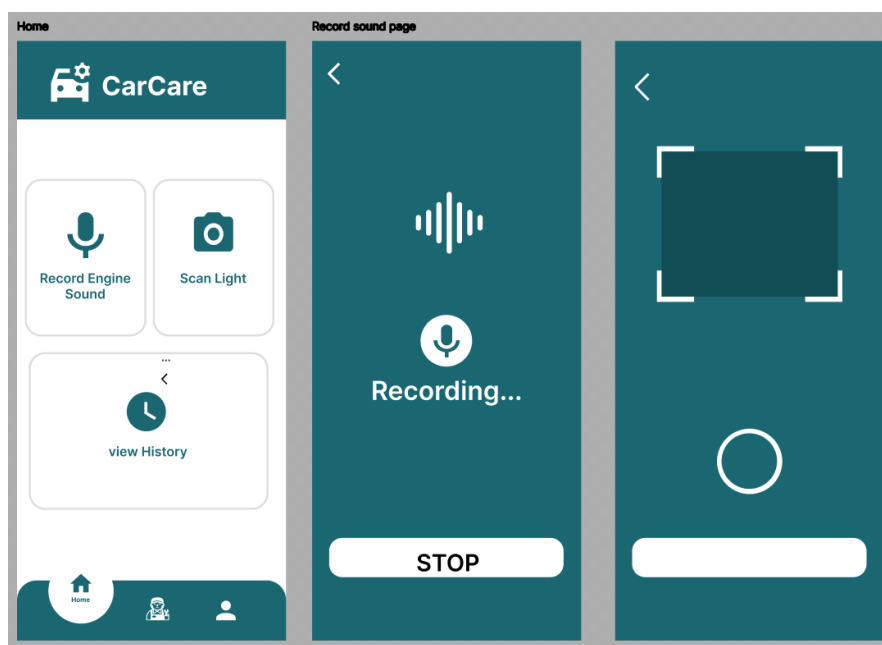
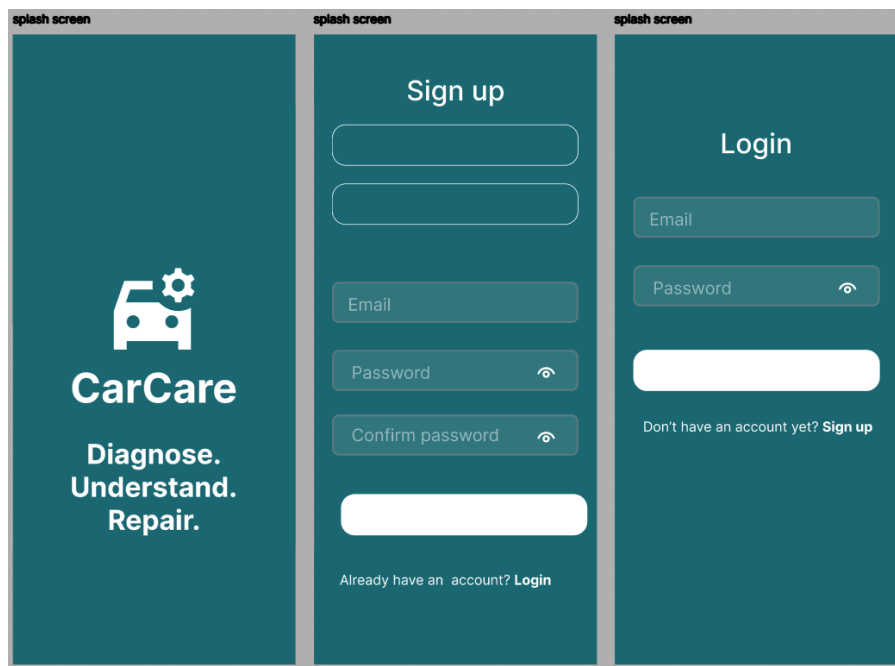
CarCare uses a clean, minimalist visual design to enhance usability and reduce cognitive load.

4.1 Design Principles Followed

- **Consistency:** All UI elements follow a unified style guide.
- **Responsiveness:** UI components are adaptable to various screen sizes.
- **Minimalism:** The interface is clean with no visual clutter.
- **Accessibility:** Good contrast and readable fonts are used for visibility.

4.2 Wireframes and Mockups

To guide the structure of each screen the Software design tool **Figma** was used to create the mockups of all key screens before development. These include the splash screen, login, sign-up, user dashboard, and diagnostics result screens.



The layout is structured with:

- Large, easy-to-read buttons
- High-contrast fonts
- Consistent spacing
- Simple icons (camera, mic, mechanic, history, etc.)

Each user has a tailored dashboard:

- Car Owners access diagnostic tools and history
- Mechanics can log in to update and manage their service profile

Interactive mockups were created to simulate user flow and ensure intuitive navigation

5 Frontend Implementation

5.1 Technology Stack

The frontend was built using:

- **React Native**
- **Expo** (for cross-platform development)
- **TypeScript**
- **Tailwind-like styling** (via utility classes in code)

5.2 Folder Structure

Our project follows a modular folder structure organized into components such as: app, navigation, components, screens, assets etc.

```
- app/  
  - tabs/  
  - assets/  
  - components/  
    - screens/  
    - ui/  
  - constants/
```

5.3 Pages Implemented

So far, the following key pages have been implemented:

- **Splash Screen**
- **Login and Sign-up Pages:** For both car owners and mechanics
- **Car Owner Dashboard**
- **Mechanic Dashboard**
- **Dashboard Light Scan Page:** Screen with live camera access

- **Record Engine Sound Page:** Screen using microphone input
- **Diagnostic Result Page:** Screen showing fault details, repair steps, and video suggestions
- **Mechanic Profile Form:** For submitting contact and service info
- **User Profile and History Pages:** For saved results and personalization

These pages include form validation, conditional rendering, and navigational routes handled by the Expo Router.

All UI components follow a consistent visual system to enhance user experience across both iOS and Android platforms.

6 Conclusion

The user interface of CarCare has been carefully planned and visually structured to ensure usability, accessibility, and purpose-driven interaction. The design supports the app's goal of delivering accurate diagnostics and helpful repair guidance. With role-based dashboards, intuitive screens, and consistent visuals, CarCare is well positioned to offer value to both everyday drivers and professional mechanics.