Chameleon Website
Software Requirements and Specifications Document

<Final Version>

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1. Introduction

1.1 Purpose

The purpose of this document is to describe the software requirements and specifications (SRS) of the *Chameleon Website*. It serves as a website blueprint, outlining the sites primary objectives, target audience and key functionalities. It ensures a shared understanding amongst stakeholders, facilitating effective communication and guiding the development process. By providing clear and comprehensive specifications, this SRS document is instrumental in ensuring the final website aligns perfectly with Chameleon's goals and user needs.

1.2 Target Audience and Suggested Reading

This SRS document is intended for all potential *Chameleon Website* stakeholders, including customers, investors, developers, and maintainers. The reader is assumed to have a basic understanding of web applications and their hosting devices, including google firebase and react native. A fundamental understanding of application databases, and user interface and user experience (UI/UX) design.

1.3 Project Scope

Chameleon is focused on developing smart city technology solutions to enhance urban living by improving efficiency, sustainability, and convenience. The purpose of the *Chameleon Website* is to provide a centralised location for all Chameleon related information and content, and services a variety of stakeholders including staff, customers, and investors.

The scope of the Chameleon Website project encompasses the creation of a centralised digital platform that effectively communicates the company's purpose and vision, its smart city technology projects and solutions, highlights the benefits of smart city technology, and serves the informational and interactive needs of staff, customers, and investors. This includes the development of detailed project pages, news pages, support resources, company information, user profiles, and user-centric functionalities to engage different stakeholders in the smart city conversation.

1.4 Document Conventions Terminology

Acronym	Term
API	Application Programming Interface
HTML	HyperText Markup Language
CSS	Cascading Style Sheets
JS	JavaScript
JSX	JavaScript Extension

NPM	Node Package Manager
AI	Artificial Intelligence
IoT	Internet of Things

1.5 Document References

[add if applicable].

2 Description

2.1 Product development perspective

From a product development perspective, the Chameleon website project is a dynamic and interactive platform that not only showcases the company's smart city projects and solutions but also serves as a hub for information and collaboration. The website development should be agile, with iterative cycles that incorporate user feedback to refine and enhance the user experience constantly. The website should be structured to support scalability, anticipating the future integration of new technologies and services as the company and its service offerings grow.

Key features should include an intuitive interface that allows for seamless navigation, real-time updates on smart city projects, a resource centre for in-depth knowledge sharing, and secure portals for staff and investors to access personalised information. The product development cycle must adhere to best practices in web security, ensuring data integrity and privacy for all users. Additionally, the development process should be inclusive, with accessibility considerations baked into the design to cater to a diverse user base.

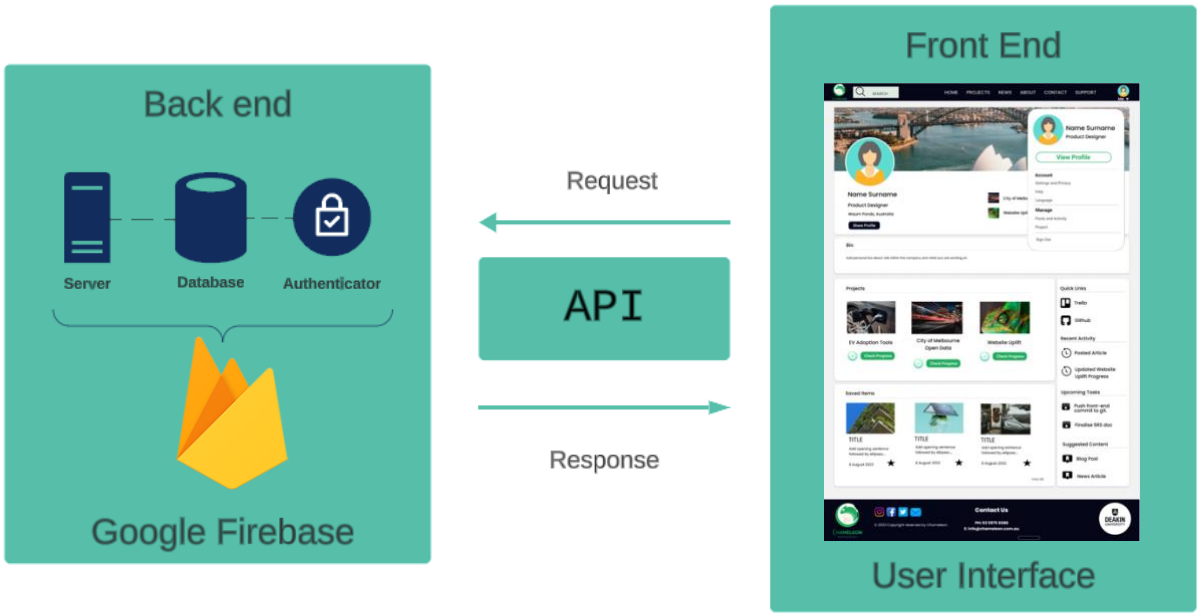


Figure 1: Chameleon Website Block Diagram

2.2 Main Functions

- User Profile: Users who require enhanced functionality can create an account which allows them to customise their experience and track their interactions. It also enables users to manage their preferences, settings and access personalised information and updates.
- Support Chatbot: An AI support chatbot is included to provide instant support to website users, answering queries or guiding them through the website. It enhances user experience by offering personalised assistance and resolving issues or answering questions in real-time.
- Payment feature: For users wishing to make a donation to Chameleon research, information on how to support along with a payment feature is available on the support page. Chameleon accept the following payment methods: credit/debit cards, digital wallets (Apple Pay, Google Pay) and PayPal.
- Item Favourites: Users with a Chameleon profile are able to mark any articles or posts to their favourites to return to at a later date. These are stored on the user profile.
- Task Assignment (staff only): In addition to the above feature, Chameleon staff can view project progress and assign themselves to tasks.
- Project Updates: Project updates are designed with a comment feature that allows users to interact with updates, providing feedback or suggestions for ongoing projects. This is particularly important for customers and prospective investors.

2.3 Types of Users and their Characteristics

The target audience for the Chameleon Website is quite broad, covering four key user types: company employees (students), investors, customers, and the general public.

Employees. While promoting Chameleon products, the website is intended to also host a staff portal that allows employees to collaborate and communicate more effectively. Employees are integral users of the platform and seek information relevant to their roles, internal updates, and resources for professional development. They value efficiency, ease of access to internal systems, and clear communication channels. Investors, on the other hand, are primarily interested in financial reports, growth prospects, and strategic insights into smart city projects.

Investors. As a start-up, Chameleon is reliant on the financial support of investors and doners to not only improve its website capabilities, but to progress its service offers. Investors are primarily interested in financial reports, growth prospects, and strategic insights into smart city projects. They prioritize up-to-date, comprehensive, and transparent information that helps them make informed decisions.

Customers. Customers, ranging from individual users to business clients, are focused on specific smart city solutions that meet their needs. They appreciate detailed product information, user-friendly interfaces, and efficient customer support.

General Public. Anyone wishing to learn more about the Internet of Things (IoT), specifically smart city technology would benefit from the Chameleon Website. In particular, these users are seeking educational content and news updates about smart city initiatives. This group

values accessibility, ease of understanding, and opportunities to engage with the projects, such as through feedback or community involvement.

2.4 Design and Implementation Constraints

As of December 2023, the following design and implementation constraints exist:

Infrastructure limitations: the Chameleon website is hosted on the Google Firebase no-cost Spark plan. This has several limitations: it restricts the number of resources you can use for free, including database reads and writes, hosting bandwidth, and cloud function invocations. Additionally, it limits the number of simultaneous database connections and has restrictions on some advanced features, such as machine learning capabilities.

Budgetary constraints: High-quality web development, especially for complex features like interactive maps or real-time data displays, can be costly (e.g., as is the case for the Chameleon EV Adoption Tools project). Ongoing costs for website maintenance, updates, and security measures also need to be budgeted for.

Language constraints: Offering content in multiple languages to cater to a diverse population can be resource intensive. At present the Chameleon Website does not cater for languages other than English.

2.5 User Documentation

2.6 Assumptions

It is assumed that users will have a stable internet connection ….

3 External Interfaces

3.1 User Interfaces

The user interface will be as simple and intuitive as possible, to make it easy for all users to navigate. It will also maintain consistent design and font styles, contain visual cues, and provide easy access to the application's major features. Draft UI Designs for key features of the website have been included below. The scaled mobile website low-fidelity and high-fidelity designs are attached at Annex A and Annex B respectively.

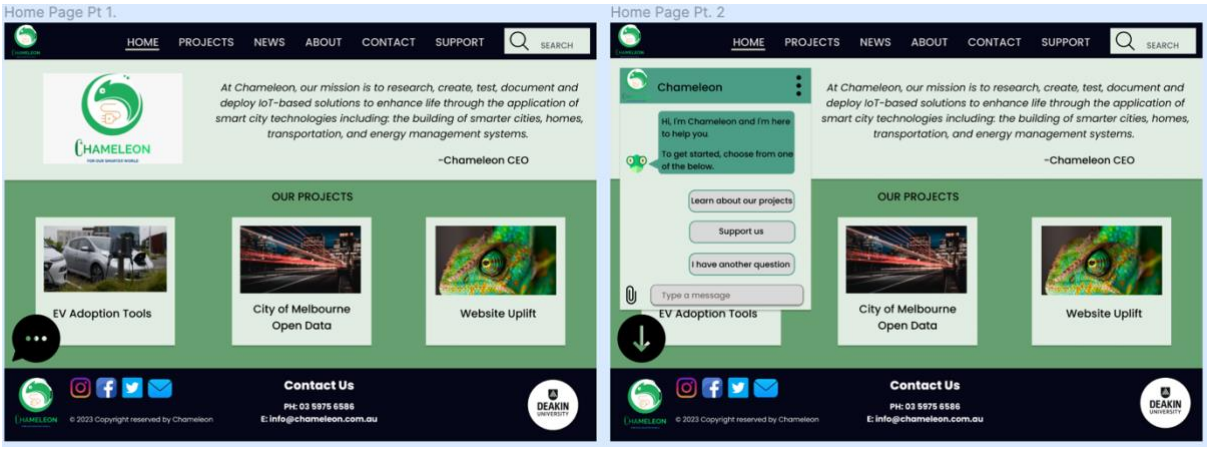


Figure 2. Home Page Design

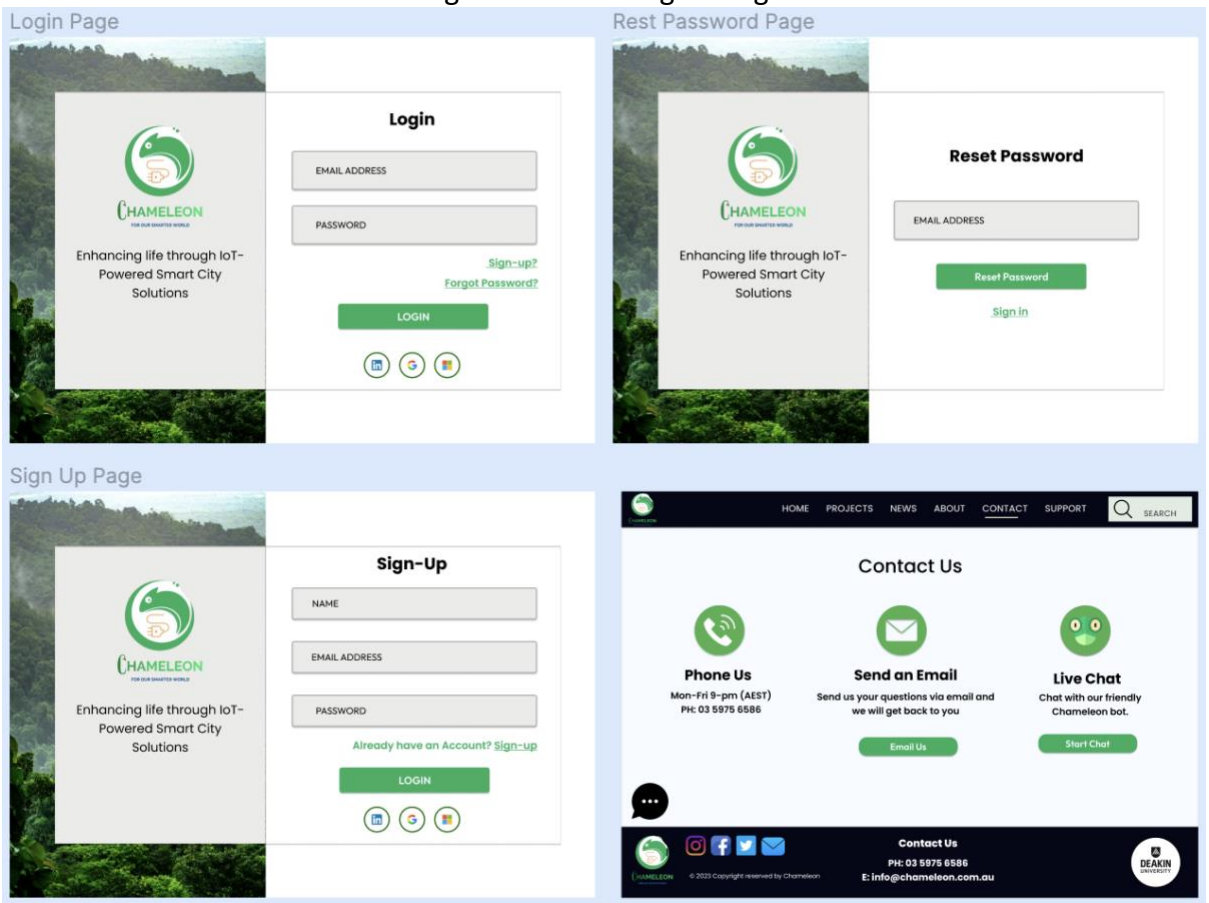


Figure 3. Login Pages and Contact Us Page

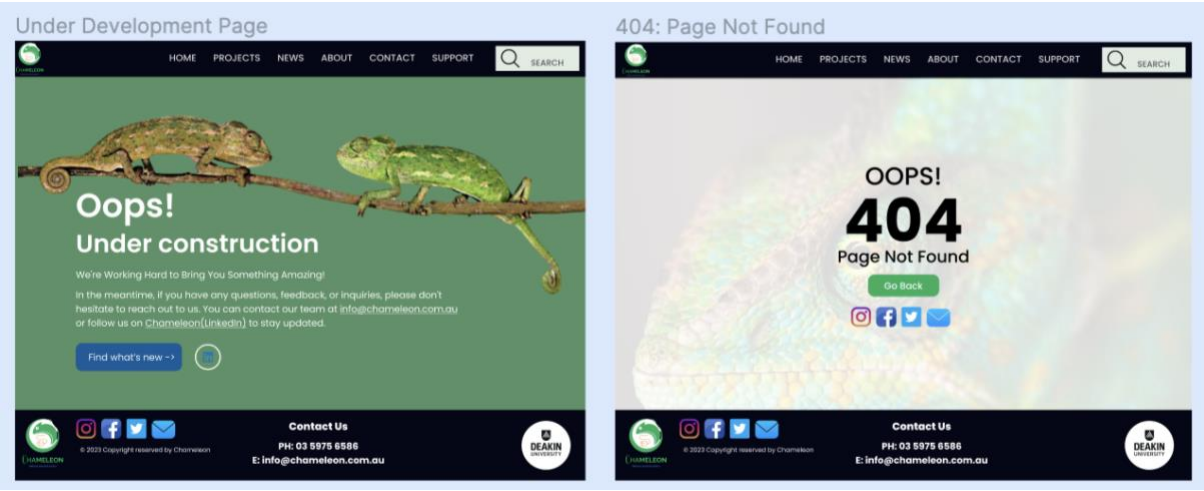


Figure 4. Error Pages

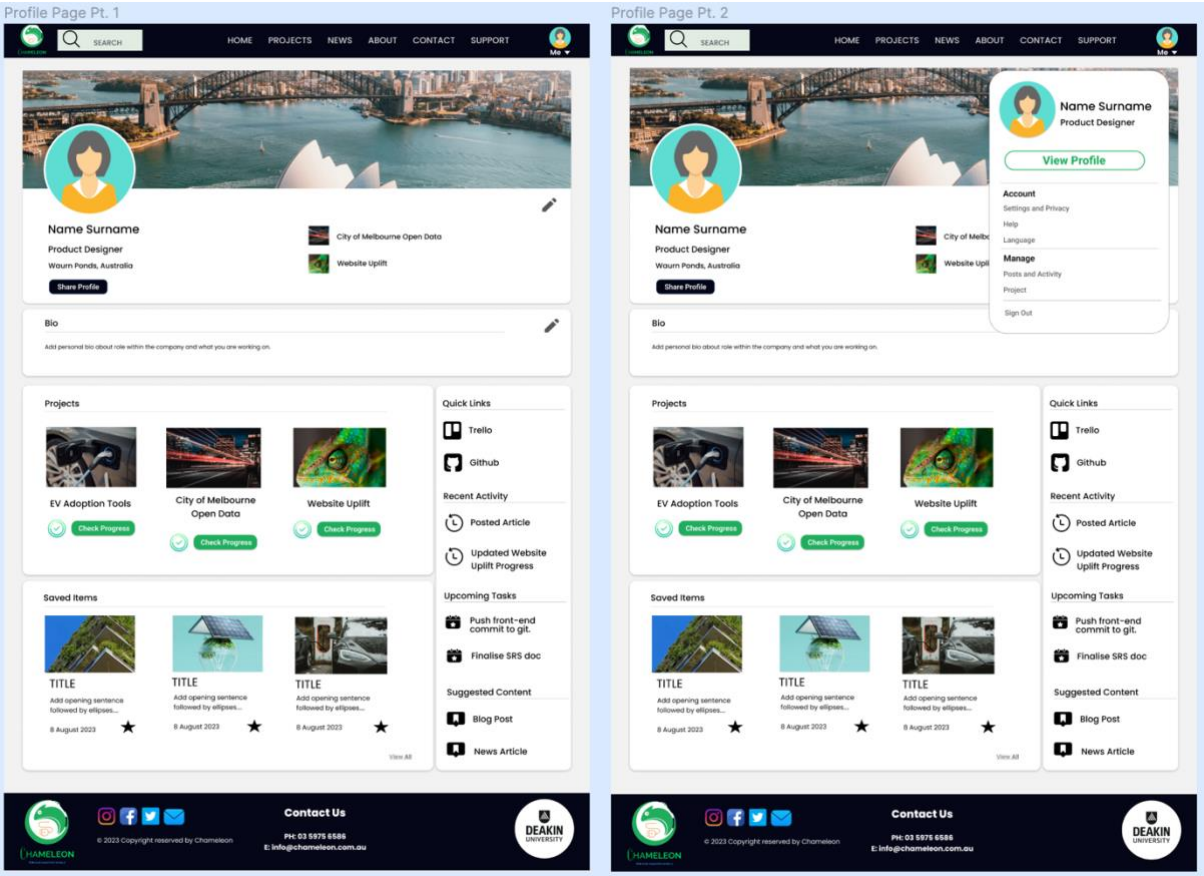


Figure 5. User Profile Page

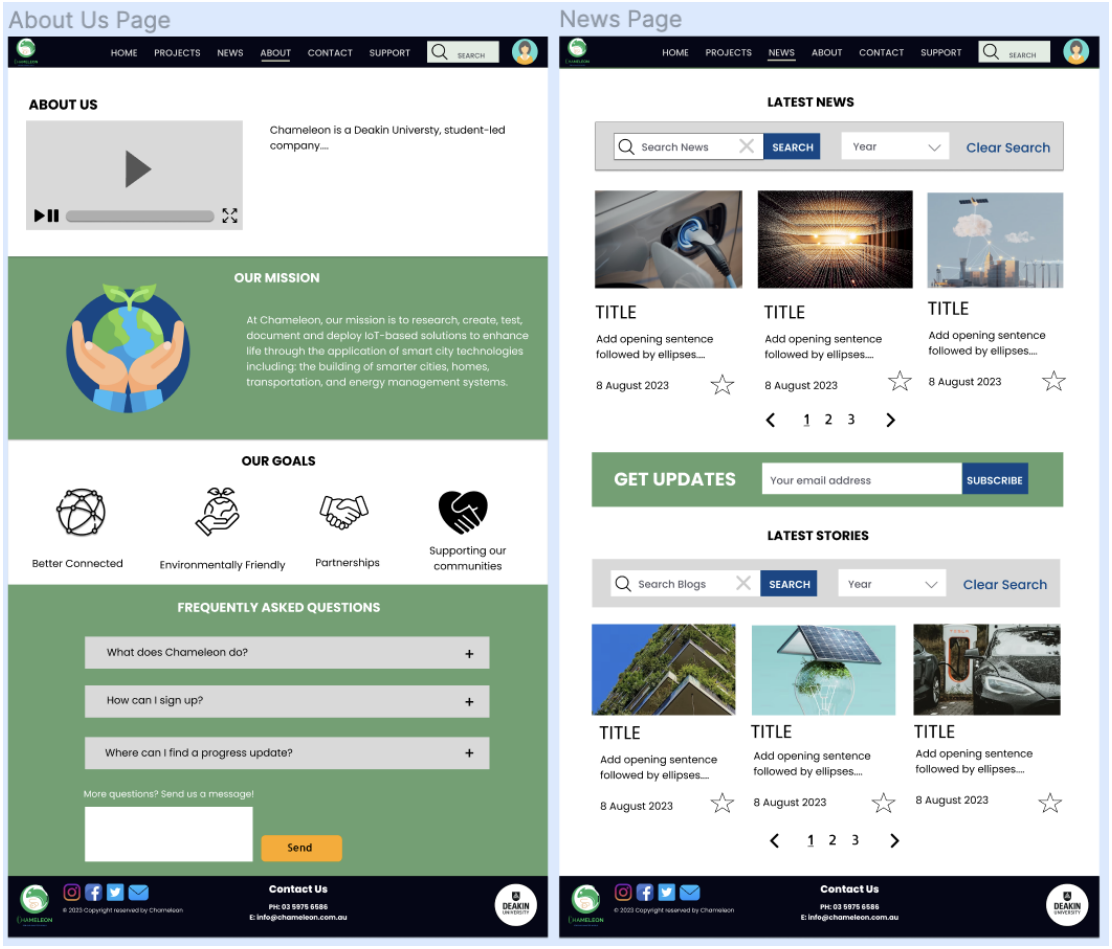


Figure 6. About Us and News Page

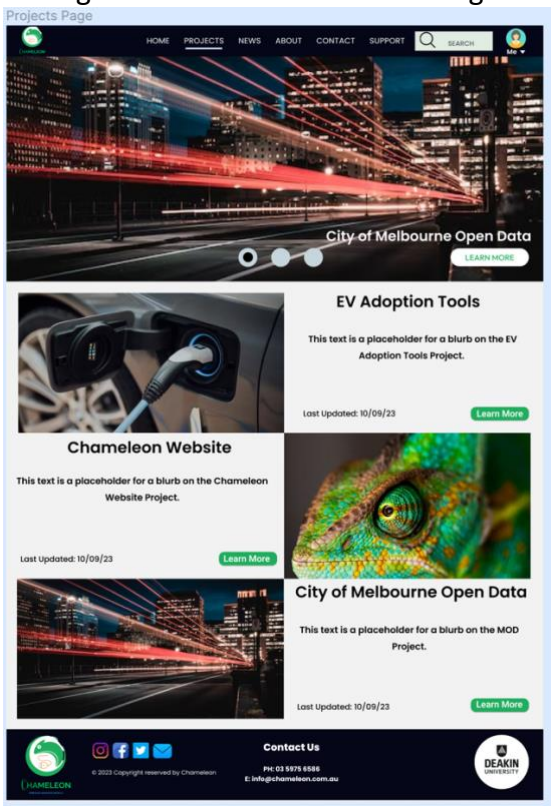


Figure 7. Projects Page

3.2 Hardware Interfaces

3.3 Software Interfaces

3.3.1 Databases

Google Firebase

3.3.2 Operating Environment

3.3.3 Languages

JSX react

3.4 Communication Interfaces

4 Functional Requirements (System Features)

4.1 Feature 1: User Registration/Login

4.2 Feature 2: User Profile

4.3 Name

5. Non-Functional Requirements

5.1 Performance

5.2 Scalability

5.3 Reliability and Availability

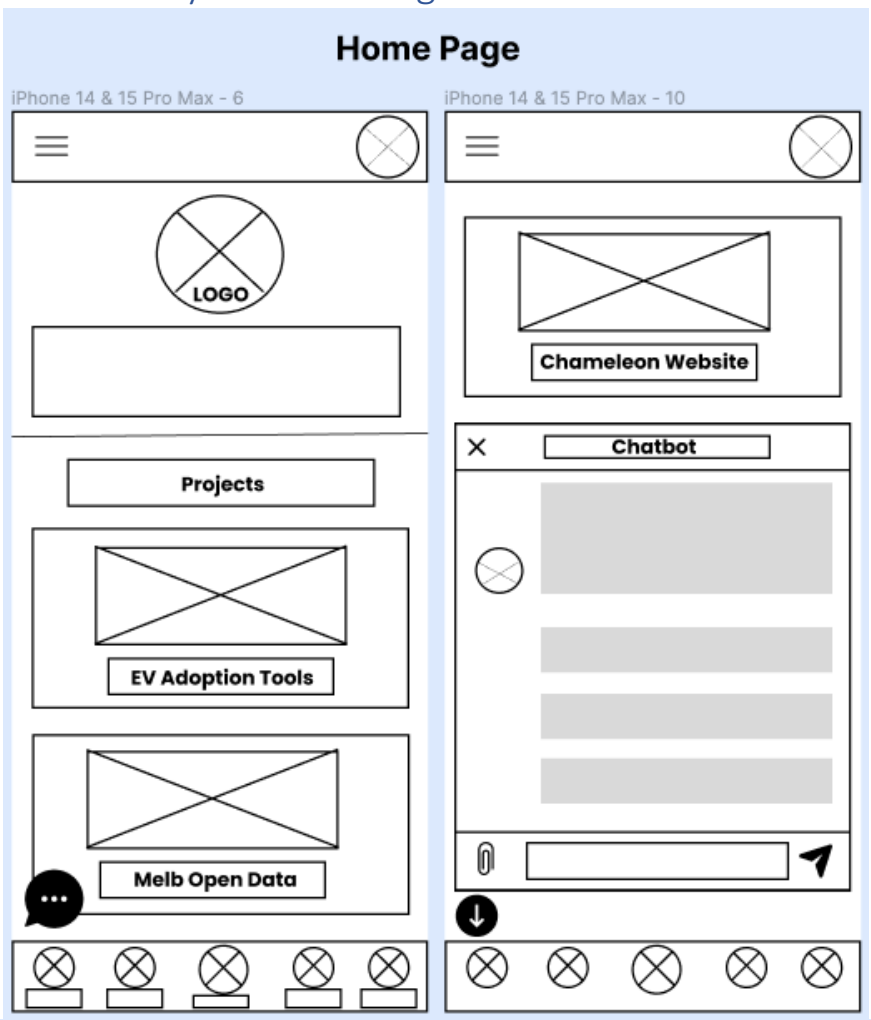
5.4 Security

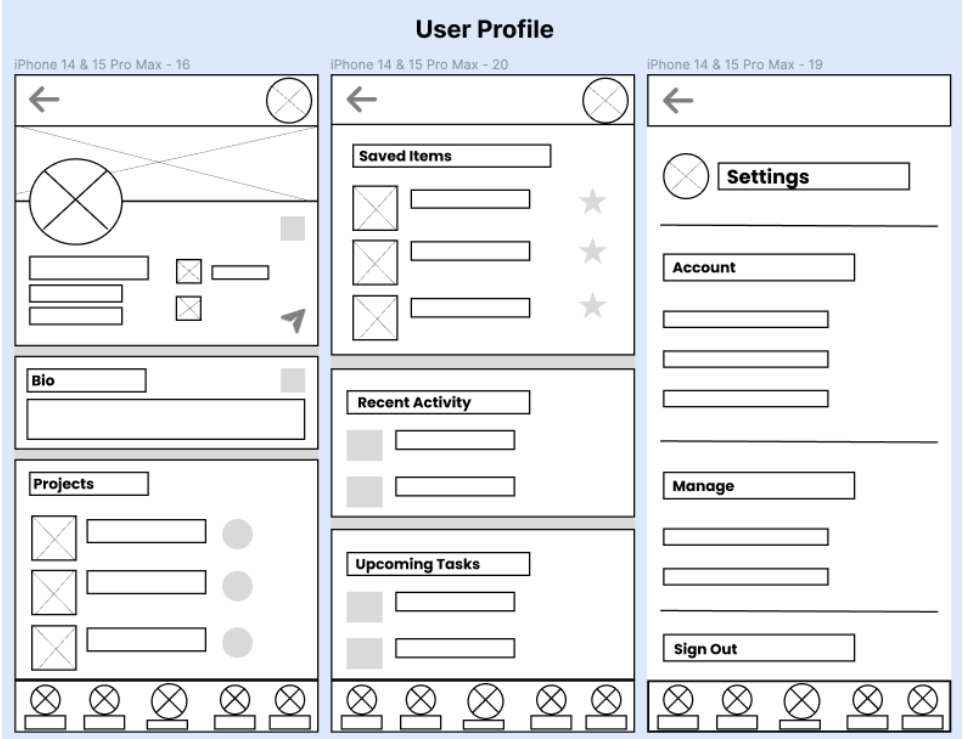
5.5 Usability

5.6 Maintainability

5.7 Backup and Recovery

Annex A: Low-Fidelity Mobile Designs





Annex B: High-Fidelity Mobile Designs