

SCSV 2113

HUMAN COMPUTER INTERACTION

(Session 2025/2026 Semester 1)

Faculty of Computing
Universiti Teknologi Malaysia

P3 – Conceptual & Physical Design

[Project Title: EcoLink]

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Project Part 3: Conceptual & Physical Design

1.0 Introduction

This report presents submission 3 of the Human Computer Interaction (HCI) project, which focuses on the **conceptual and physical design** of the **EcoLink** mobile application. Building upon the findings from the user analysis, task analysis, and requirement specification phases, this stage translates abstract user needs into tangible interface designs.

The primary objective of this phase is to design an interface that supports usability, clarity, and efficient user interaction, while remaining consistent with the system goals and user expectations identified earlier in the project. Design decisions at this stage aim to reduce cognitive load, improve navigation flow, and ensure that key system functions are easily accessible to users.

This report documents the progression of EcoLink's interface design through two main stages: an **initial wireframe**, which outlines the fundamental structure and navigation of the application, and a **refined wireframe**, which incorporates improvements based on design principles and iterative evaluation. These wireframes illustrate the evolution of the application from early conceptualization to a more structured and user-centred design.

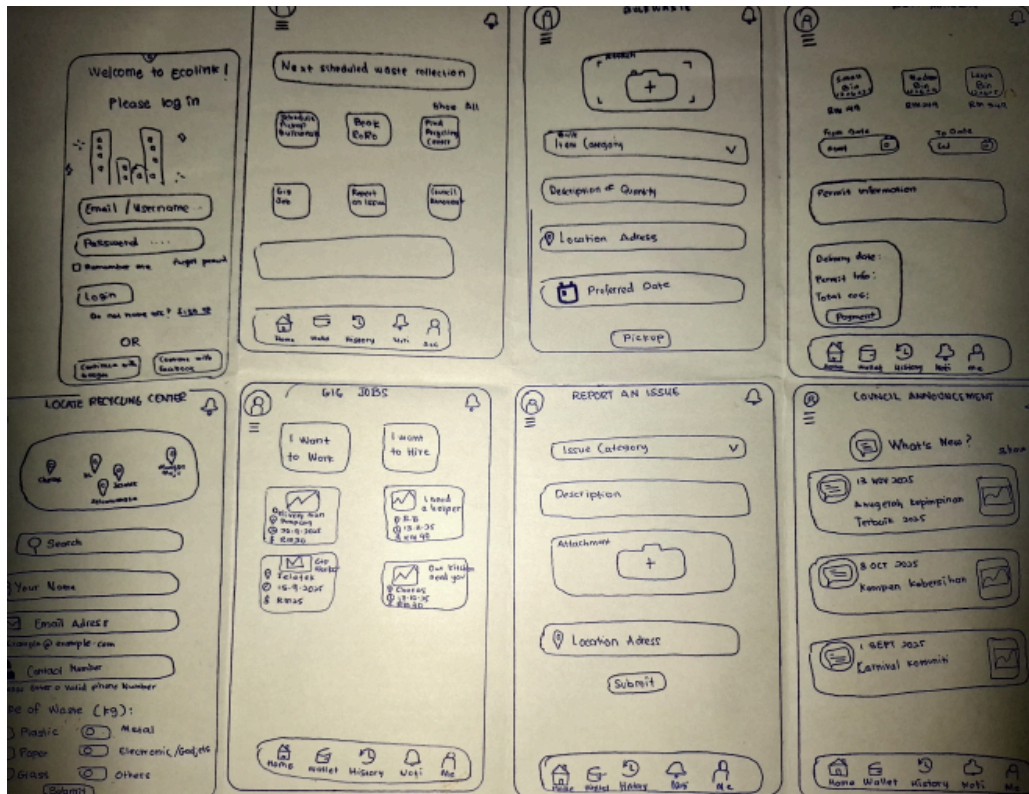
The complete **first and final design iterations** of the EcoLink mobile application were developed using **Figma** and are available for reference in the project blog. These iterations provide additional visual detail and demonstrate the design refinement process beyond the scope of this written report.

2.0 Conceptual Design

The conceptual design phase focuses on defining **what the system does** and **how users interact with it at a high level**, without emphasizing visual details. This stage establishes the overall structure of the EcoLink application, including core functions, user workflows, navigation hierarchy, and interaction logic.

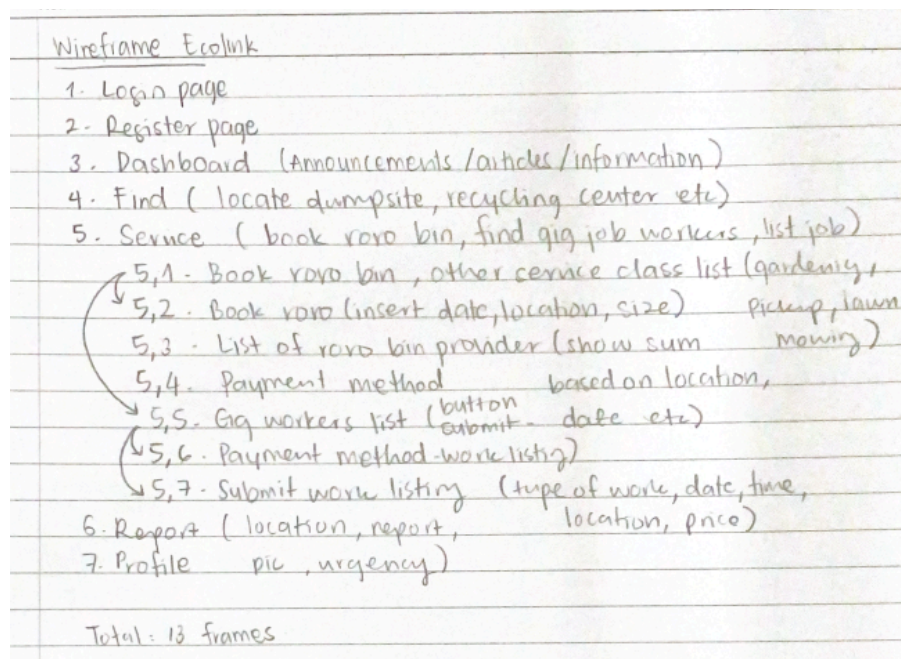
The initial wireframe was developed to represent the main screens, functional groupings, and task flows derived from the task analysis and user requirements. It serves as a low-fidelity representation that emphasizes functionality over aesthetics, allowing early evaluation of system logic and usability. By focusing on conceptual clarity, this phase ensures that the application supports users in completing tasks efficiently and intuitively before progressing to detailed interface design.

Initial Wireframe:

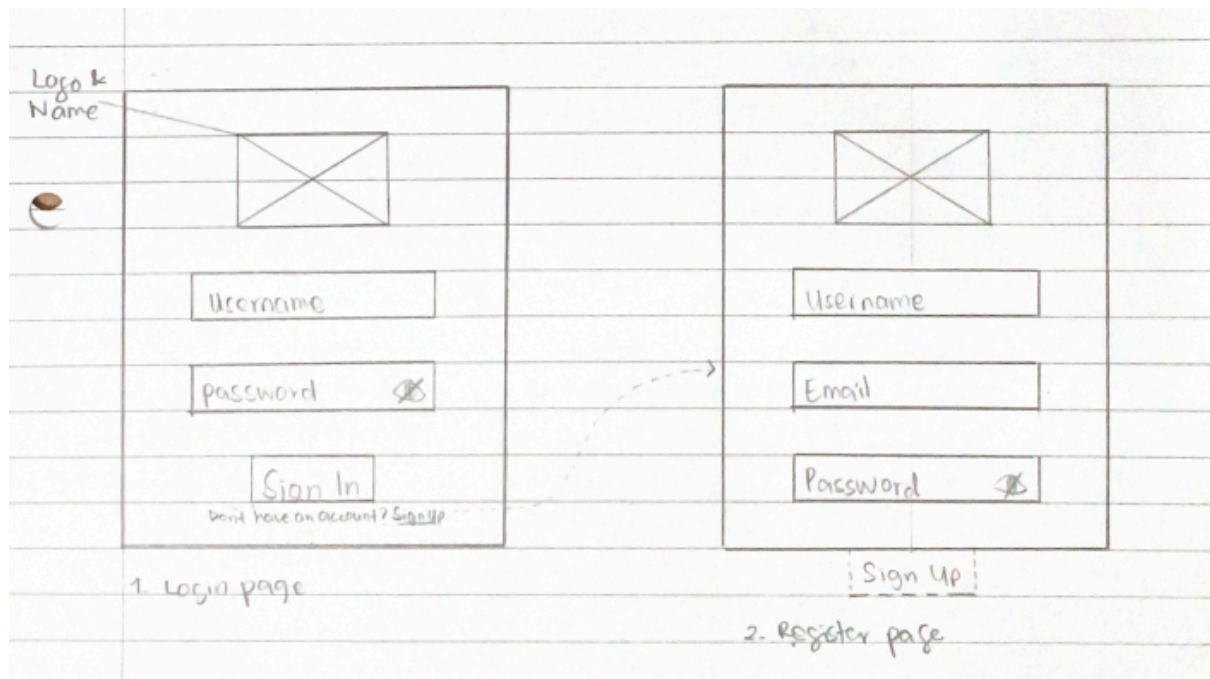


Picture 1: This initial wireframe outlines the fundamental structures and functions that EcoLink should carry out without worrying about the flow and logic behind it.

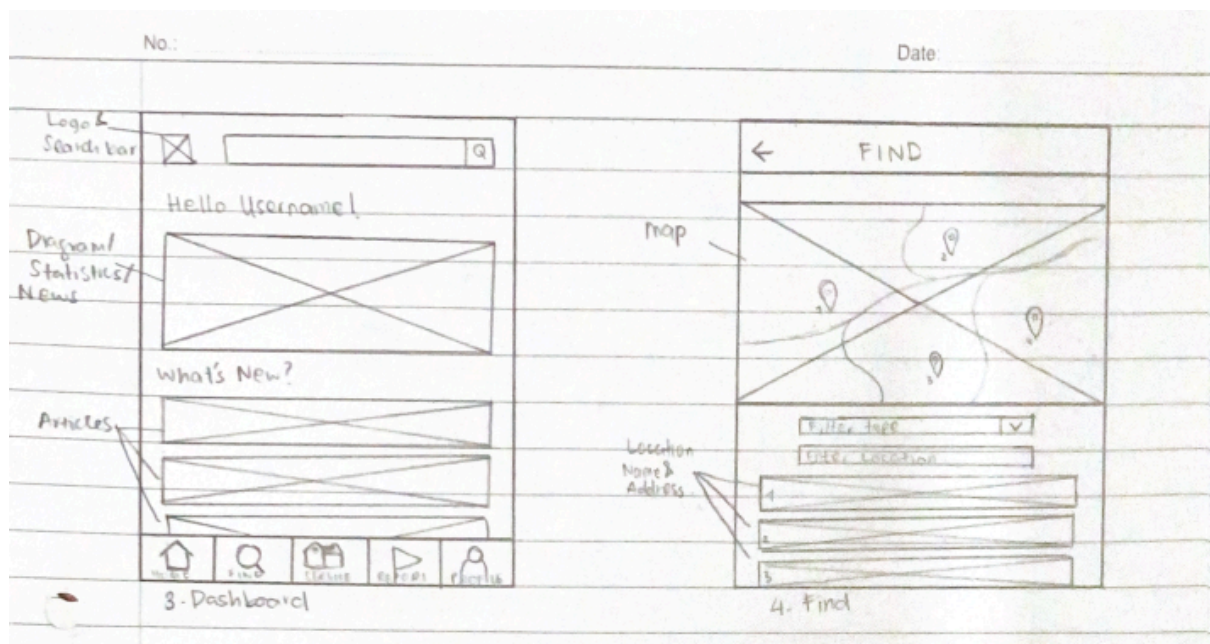
Refined Wireframe:



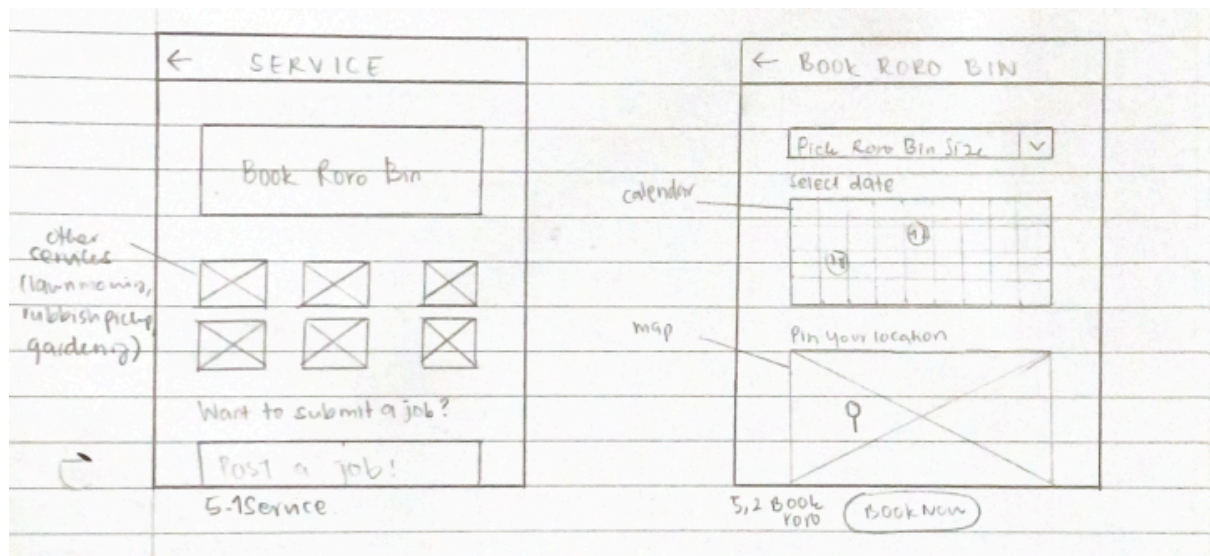
Picture 2: This refined wireframe focuses on the flow of functions in the system



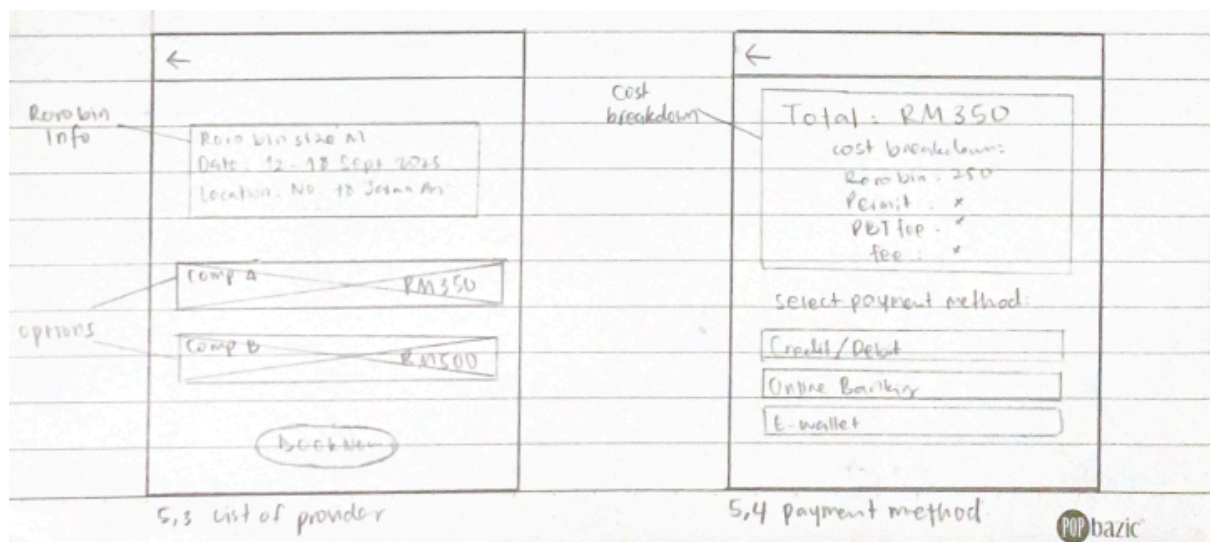
Picture 3: This symbolizes the structure of the login and register page of Ecolink



Picture 4: This symbolizes the structure of the Dashboard and 'Find' of Ecolink to locate disposal site



Picture 5: This symbolizes the structure of the 'Service' page that will show all offered services on the platform and highlight the 'Book RoRo' function. This also shows the structure of the booking page.



Picture 6: This symbolizes the structure of the 'Book RoRo' page, a continuation where user can compare prices and the 'Payment' page.

The image shows two hand-drawn wireframes on lined paper. The left wireframe, titled 'Gardening', features a back arrow, a list of two workers with profile icons, and a 'SELECT' button. The right wireframe shows a booking process with fields for 'Select Date.', 'Select Time', 'Enter Location', and a 'Book Now' button. Annotations include 'Gig workers' pointing to the worker list and 'Calendar' pointing to the date field.

5,5 Gig worker list

5,6 Gig worker payment.

Picture 7: This symbolizes the structure of the 'Gig Workers' page when a specific job is chosen. Afterwards a page of booking of the workers are shown.

The image shows two hand-drawn wireframes on lined paper. The left wireframe, titled 'Submit Work', includes a dropdown for 'Select Type of Worker', a date field, time selection, location input, gender selection, and a 'Submit' button. The right wireframe, titled 'REPORT', includes a dropdown for 'Select Issue', a report input field, location input, and a 'Report Issue' button. Annotations include 'calendar' pointing to the date field and 'clock' pointing to the time selection.

5,7 Submit work list

6. Report

Picture 8: This symbolizes the structure of the 'Submit Work' page where users can submit their work they need to advertise and the 'Report' page where users can report any complaints.

The image shows a hand-drawn wireframe on lined paper titled 'PROFILE'. It features a back arrow, a profile picture placeholder, and a list of menu items: 'Account Details', 'Order History', 'Settings', and a 'Log Out' button. An annotation 'Profile pic' points to the profile picture placeholder.

7 Profile

Picture 9: This symbolizes the structure of the 'Profile' page of the user.

3.0 Physical Design

The physical design phase translates the conceptual structure into a **concrete** and visual interface, focusing on layout, screen organization, and interaction elements. During this stage, the wireframe was refined to improve consistency, readability, and ease of use, while aligning with standard mobile interface conventions.

Design refinements were made to enhance navigation flow, reduce interface complexity, and ensure visual consistency across screens. These improvements reflect usability considerations such as clear affordances, logical grouping of elements, and minimal user effort. The refined wireframe represents a higher-fidelity version of the interface and serves as a foundation for the final application design.

The complete **first and final iterations** of the EcoLink mobile application, including detailed layouts and interactions, were created using **Figma**. These designs can be accessed via the project blog, which documents the evolution of the interface and provides additional visual context for the physical design decisions.

The physical designs for both the initial and final versions of the EcoLink mobile application are available at the following link:

<https://zedphilism.github.io/fizis-ecolink-site/projects/index.html>

4.0 Conclusion

This submission documented the **conceptual and physical design process** of the EcoLink mobile application, demonstrating the transition from abstract design ideas to a structured and user-centred interface. Through the development of an initial wireframe and a refined wireframe, the design evolved from a basic representation of system structure into a more detailed and usable interface aligned with user needs and task requirements.

The iterative design approach adopted in this phase allowed design decisions to be reviewed, evaluated, and improved before final implementation. By progressively refining the interface, potential usability issues were addressed early, resulting in a more coherent and efficient design.

The complete first and final design iterations developed using **Figma**, as referenced in the project blog, further illustrate the progression of EcoLink's interface design. Overall, this process provides a strong foundation for the development of a usable, effective, and user-focused mobile application that supports the objectives of the EcoLink system.