Assignment – 01

IT2080 – Information Tecnology Project. Year 02 Semester 02

Title : Yakadabadu.lk – Scrap Collection & Recycling Management System

Batch : 4.1

Group Number 81

Group Details:

IT Number	Name	E-mail	Contact Number
IT 23202122	P P D R Pathirage	IT23202122@my.sliit.lk	077 051 5121
IT 23140752	Gunawardena A A	IT23140752@my.sliit.lk	071 279 2376
IT 23216778	S A R U Amarasinghe	IT23216778@my.sliit.lk	071 799 5000
IT 23320550	K T A Kularathne	IT23320550@my.slit.lk	071 144 3347
IT 23144408	Fernando W A A T	IT23144408@my.slit.lk	076 206 2013

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Objective: Identify a business requirement and select a project with sufficient scope

Part 01

1. Brainstorm and identify a real-world problem that needs an IT solution. This can be a business requirement, a requirement of an organization to improve the current process or an innovative idea that solves a current issue.

2. Identify the users of the product and the benefit that they will get by the software system

3. Sketch a diagram to show the current business process and the proposed improvements you suggest

4. List the main features of the product that you are planning to develop.

5. List of user requirements for the features you have identified.

6. Suggest a suitable name for the project.

Part 02

Sketch the GUIs and database tables to demonstrate your understanding.

Part 01
Question 1 Answer

Sri Lanka, like most developing countries, has a serious problem with recycling and waste management. These are further aggravated by population increase, fast urbanization, and inadequate infrastructure. The main scrap collection and recycling challenges in Sri Lanka are:

Inefficient Scrap Collection
Traditional scrap collectors tend to go door to door at random without knowing if the residents possess scrap to sell. This causes wasted fuel and time, and the collection is inefficient.

Low Returns for Sellers of Scrap
The collection process of scrap typically involves a number of intermediaries who receive a significant amount of the profits. The sellers are also unaware of the actual market value of their scrap, and therefore they end up receiving unequal returns.

Waste of Reusable Items
Most people are unaware that certain things may be resold or reused. During disposal, there is no organized system to connect buyers of reusable items with potential consumers. As a result, reusable materials end up being disposed of in landfills, and this causes degradation of the environment.

Environmental Impact
Illegal waste and scrap disposal causes pollution of land, water, and air. There are significant health risks for waste pickers and local populations who live near landfills through exposure to harmful chemicals.

With these challenges in view, it is obvious that Sri Lanka's scrap recycling and collection issues are multifaceted and require innovative solutions. Our group has observed that an IT-based solution is the way to resolve these issues because it will improve efficiency, increase economic opportunities, and provide environmental sustainability. Through the adoption of such a solution, we can facilitate a cleaner environment, economic growth, and enhanced living standards for the masses of Sri Lanka.

Question 2 Answer

Users of the Product and Their Benefits

General Users/ Scrap sellers

- Convenient scrap pickup scheduling according to user preference
- Better financial returns through elimination of middlemen and direct connection with collectors
- Responsible and easy disposal of scrap items

Collectors

- Efficient collection routes minimize wasteful travel and effort
- Simplified scheduling for enhanced operational efficiency
- More opportunities for collection without the need for administrative coordination

Businesses Using Recycled Materials

- Direct access to quality, pre-processed recycled materials for manufacturing needs
- Reduced supply chain complexity by eliminating intermediaries

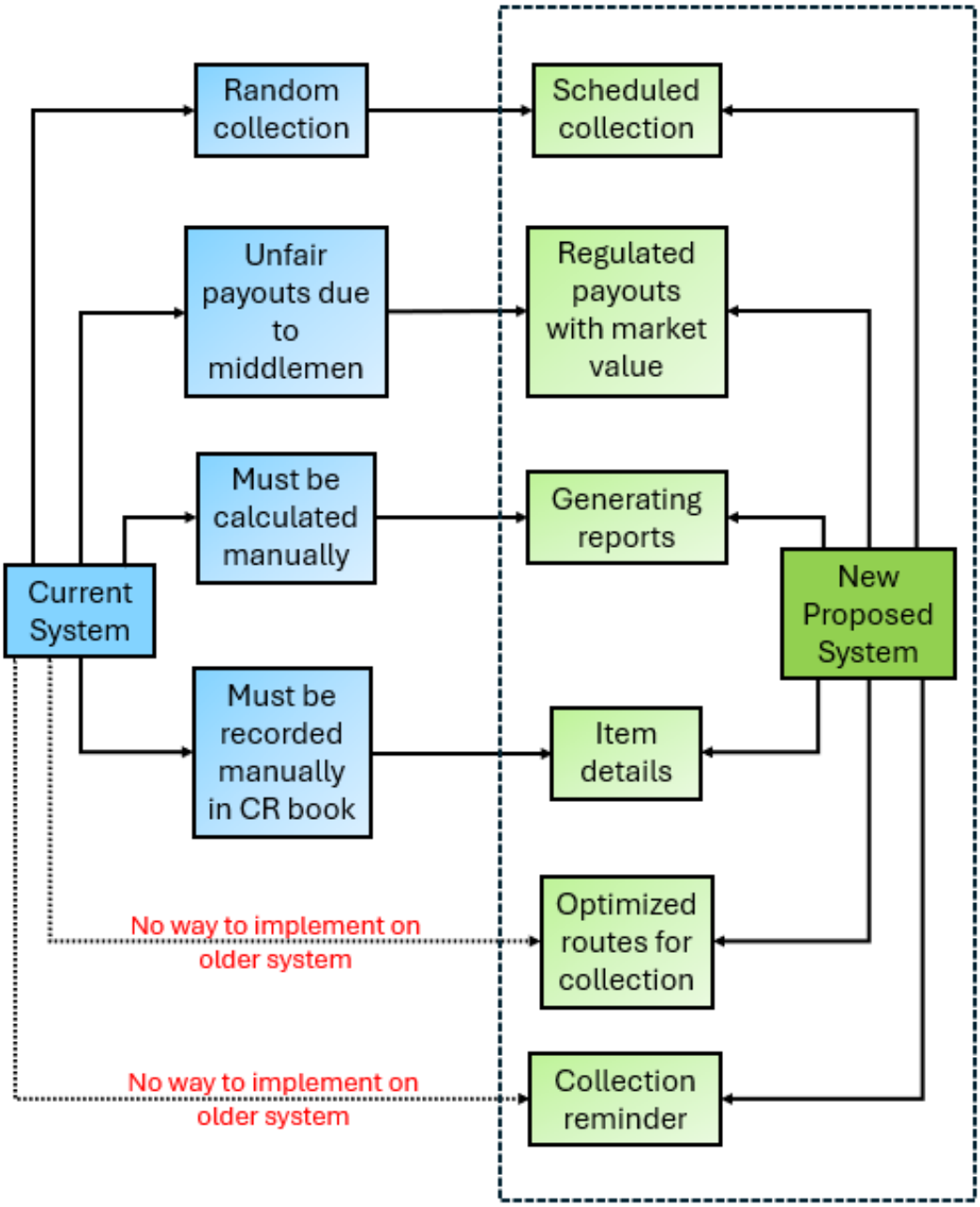
Consumers Seeking Affordable Second-hand Materials

- Access to budget-friendly, usable second-hand items like furniture and electronics
- Encourages sustainable purchasing practices

Environmental Advocates and Sustainability Enthusiasts

- Transparent recycling processes encourage accountability and responsible waste management
- Reinforces a circular economy by supporting the 3R (Reduce, Reuse, Recycle) principles

Question 3 Answer



Question 4 Answer

The Yakadababadu.lk is a Scrap Collection & Recycling Management System to automate waste collection and increase recycling. Some of its key features are:

User Authentication System
Secure registration and login for buyers, sellers, and administrators.

Scrap and Reusable Items Listing
Users can post scrap material for recycling or resale.

Pickup Scheduling & Route Optimization:
Automated scheduling and routing optimization for collection.

Fair Pricing Mechanism
Dynamic calculation of scrap value depending on market prices.

Admin Dashboard
Allows administrators to track transactions, generate reports, and manage the platform.

Customer Support & Rating System
Customers are able to provide feedback and request assistance.

The system is currently operating in Kaduwela, Malabe, and Battaramulla, based on allocated time slots for collection. There is no online buying support on the website; the buyers must physically look at reusable items before purchasing. Google Maps API is also used to enhance the path of drivers.

Question 5 Answer - User Requirements

1. User Authentication System

- Users (sellers, collectors, admins) must be able to register, log in, and manage accounts securely.
- Password encryption and email verification should be included.

2. Reduce Items Page and Homepage

- The homepage should display an overview of the platform.
- The "Reduce Items" page should list reusable/recyclable items with filtering options.
- Users should be able to browse items easily.

3. Admin Dashboard and Recycle Items Management

- Admins should have a dashboard to manage users.
- Admins should be able to track recycling trends and monitor system performance.
- Admins should have the ability to generate reports.
- Admins should be able to manage and update listed recyclable items.

4. Driver Dashboard

- Drivers (scrap collectors) must have a dashboard to view pickup requests.
- The system should provide optimized routes for efficient collection.
- Drivers should be able to update the collection status in real time.

5. Selling Items Feature

- Users should be able to list items for resale.
- Buyers must physically inspect the items before purchasing (no online transactions).

6. Customer Support and Rating System

- Users should have access to customer support via chat or email.
- A rating and review system should allow users to provide feedback on drivers and listed items.

Question 6 Answer

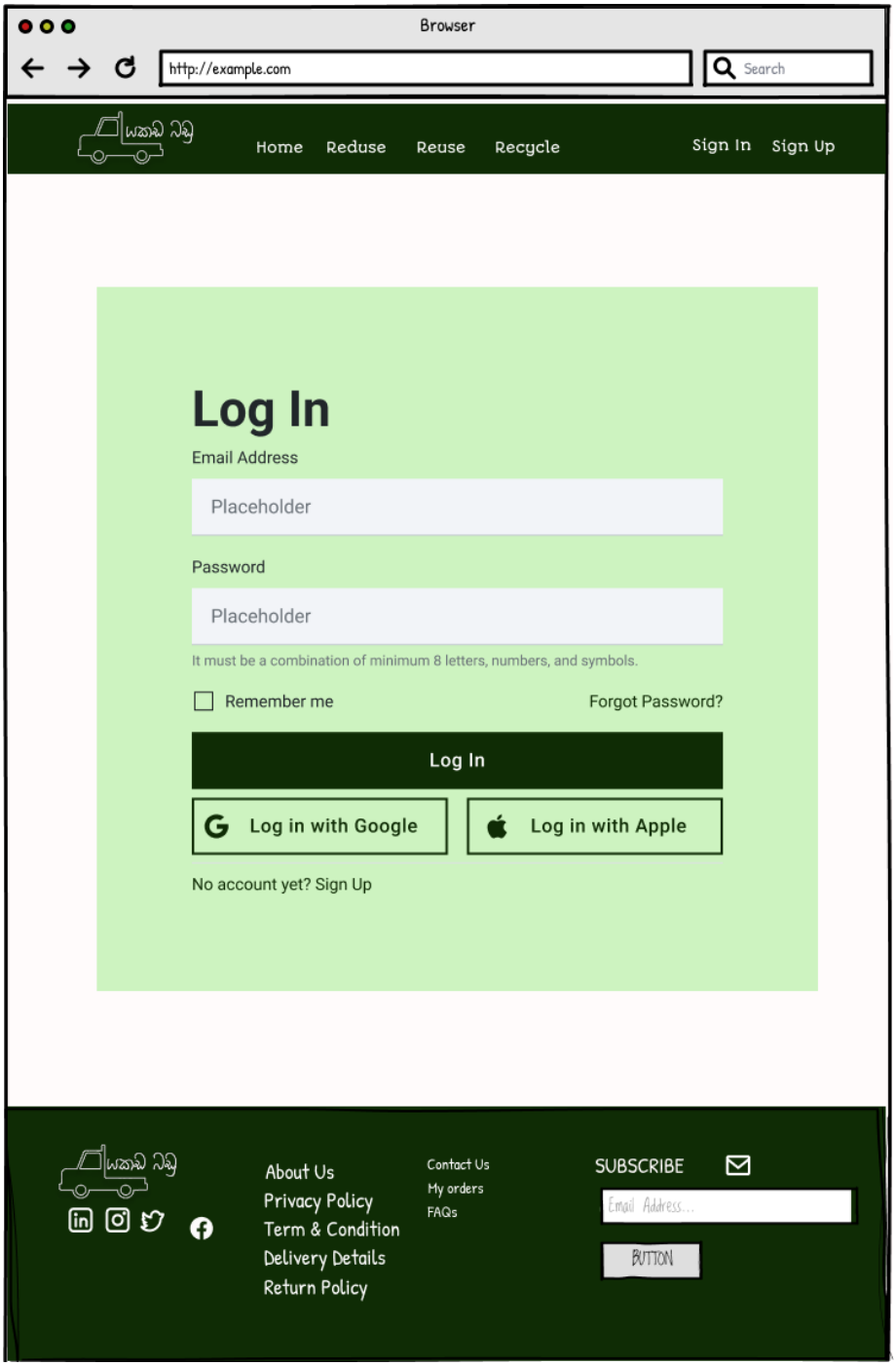
- EcoScrap.lk
- RecycleX
- SmartScrap.lk
- Trash2Cash.lk
- Yakadabadu.lk

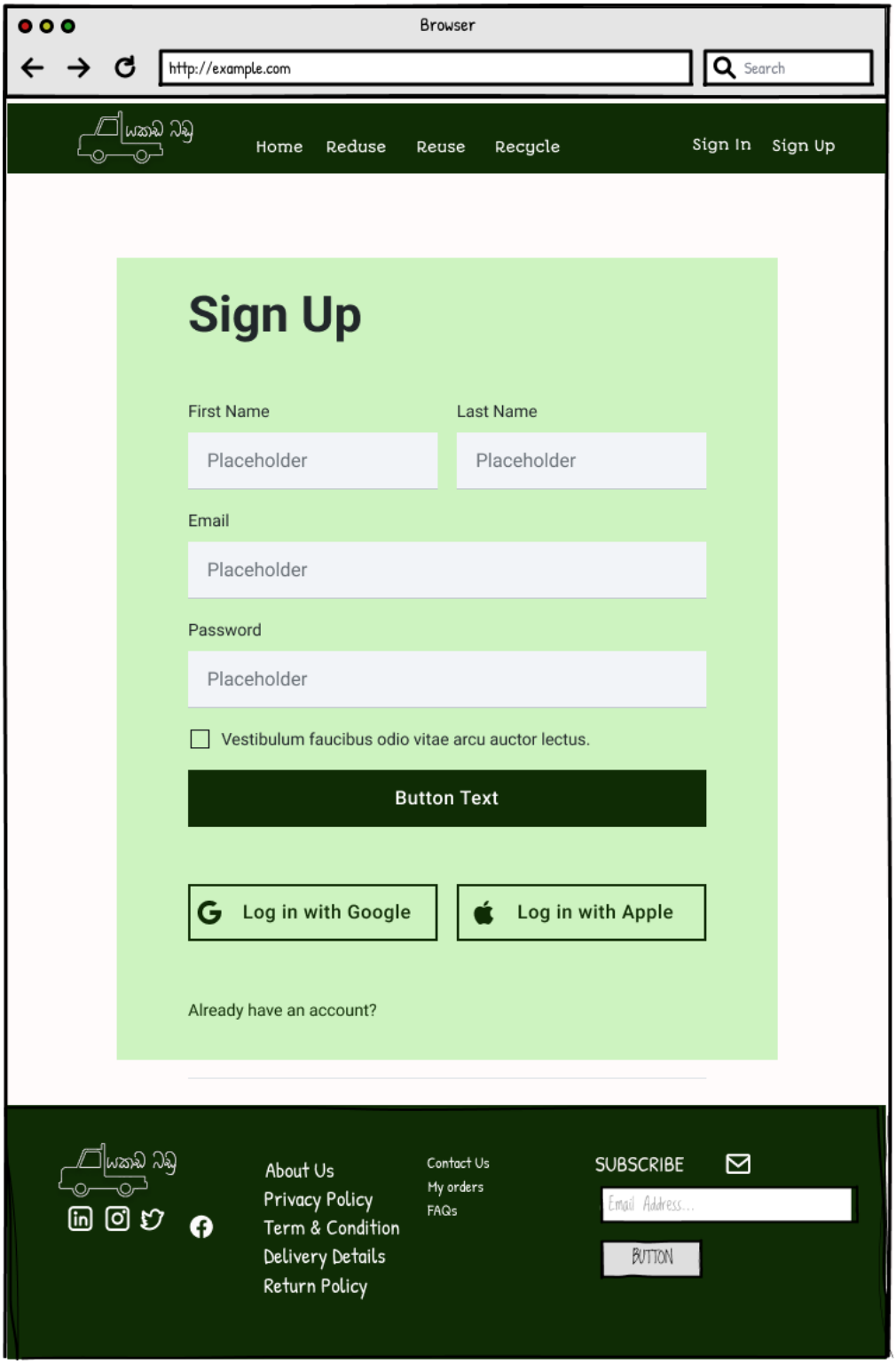
- We choose **Yakadabadu.lk**

Combines a local, relatable name with a clear technological and environmental purpose.

Part 02
GUI Sketch

**This report focuses exclusively on the main pages of the website, while acknowledging the existence of additional subpages that are not covered in this analysis.

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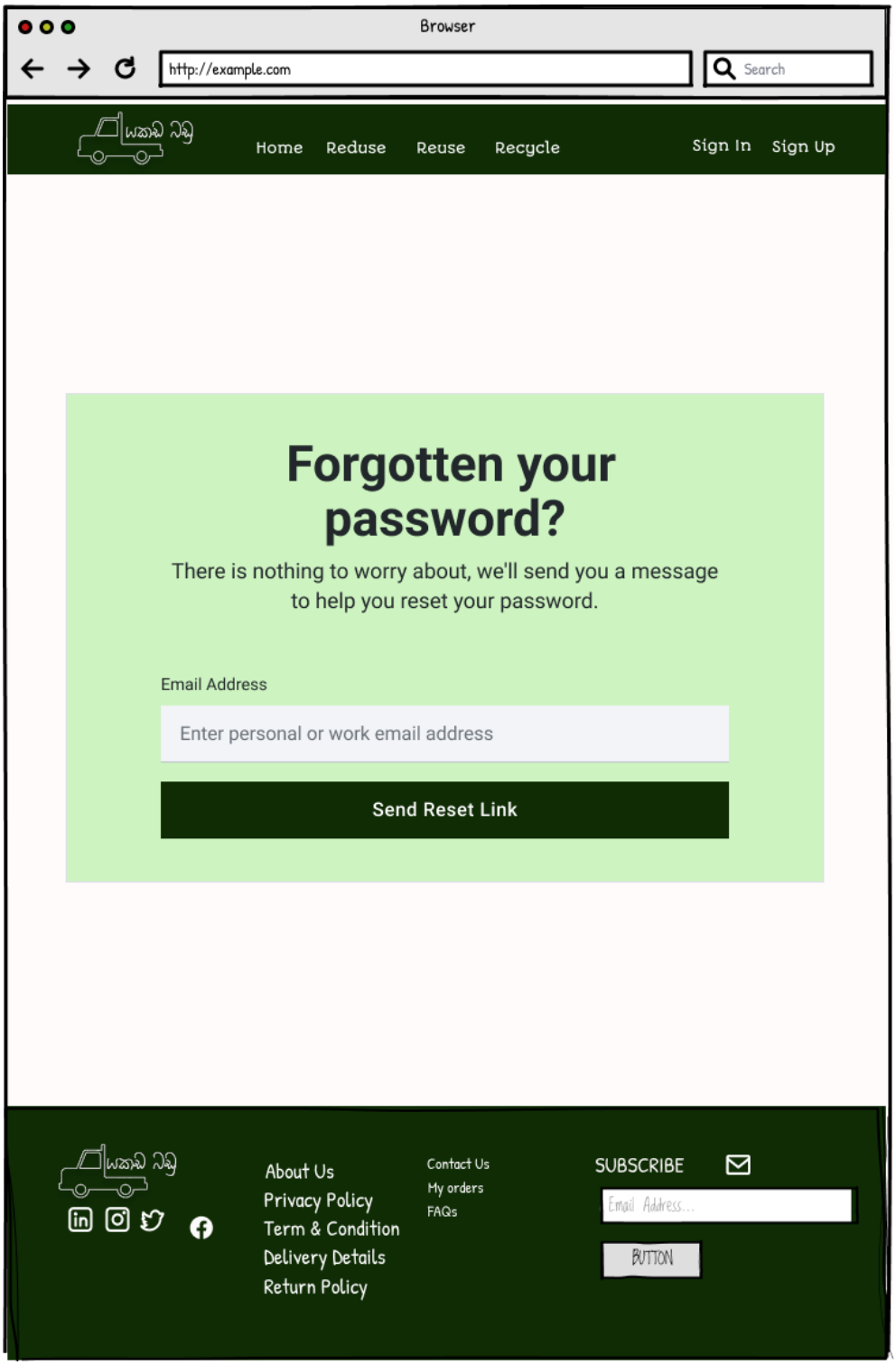
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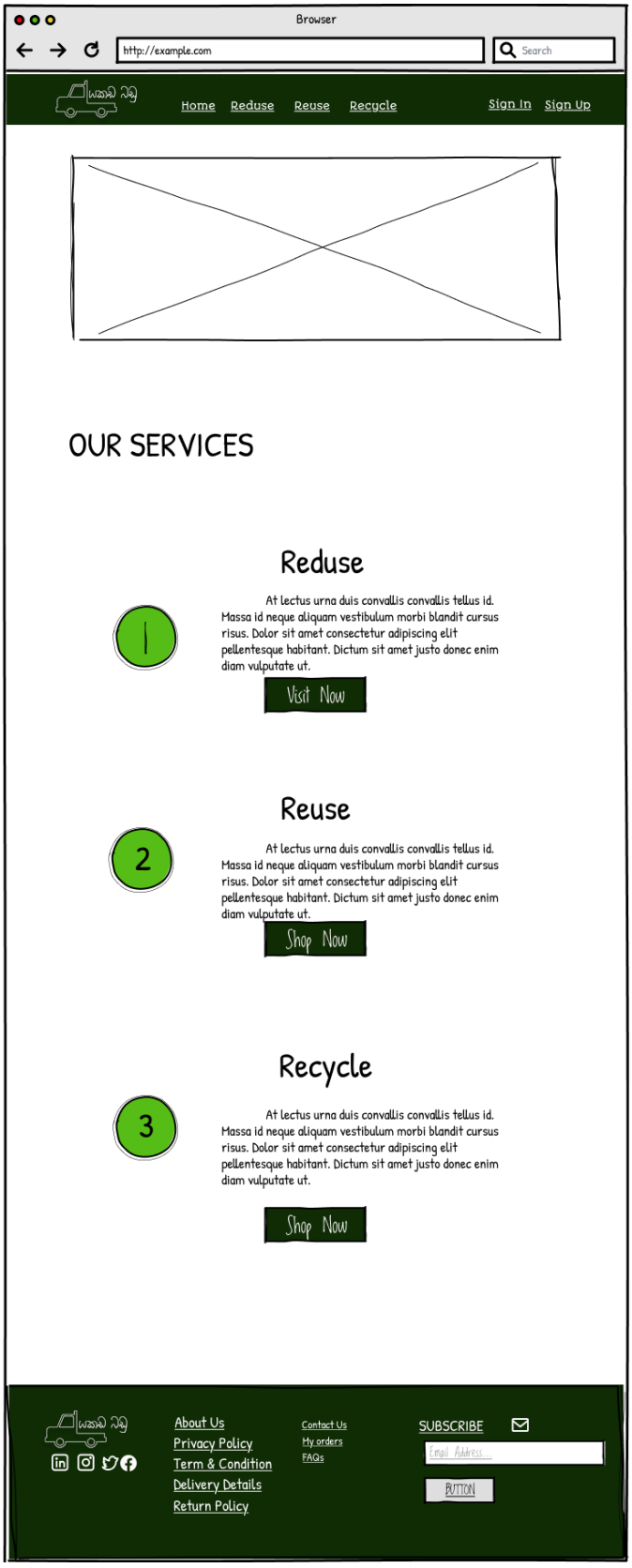

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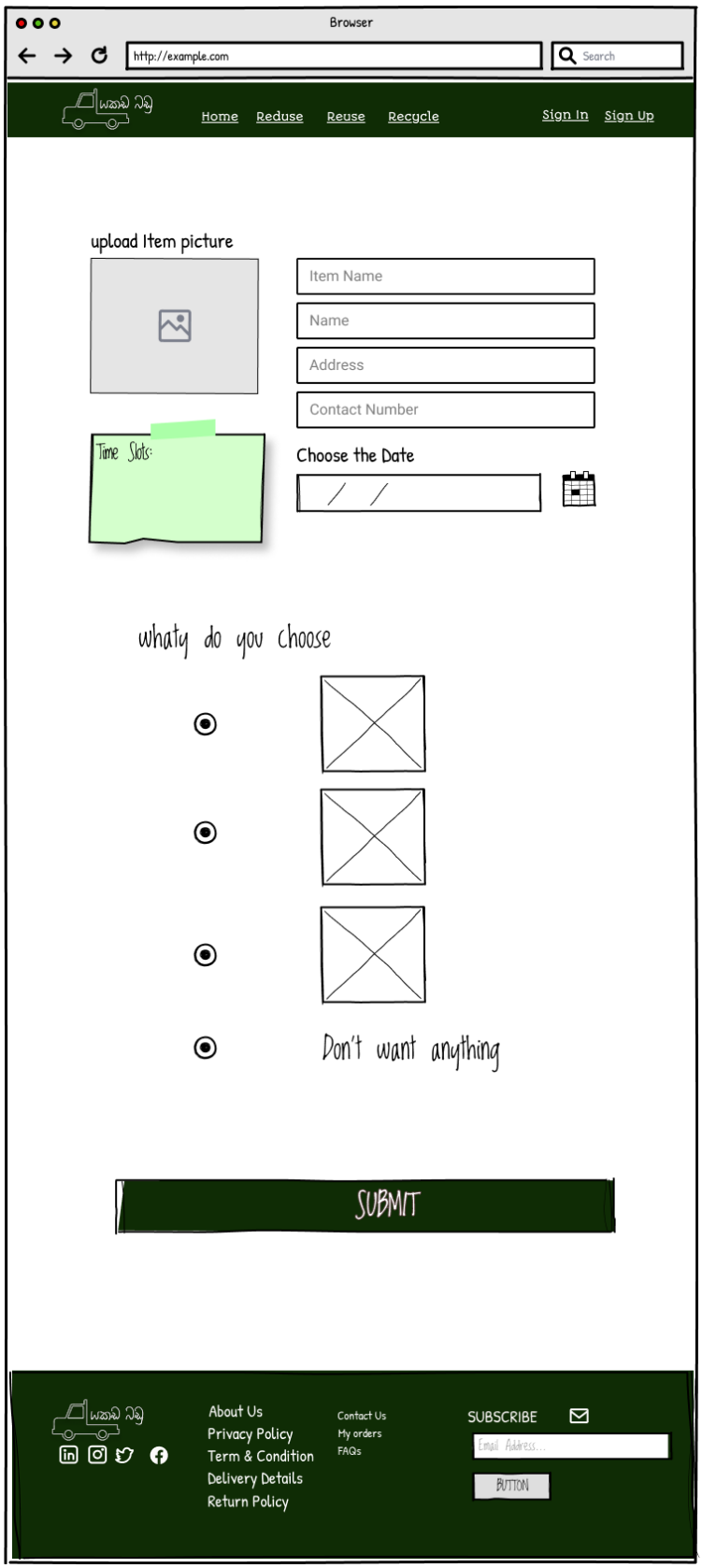

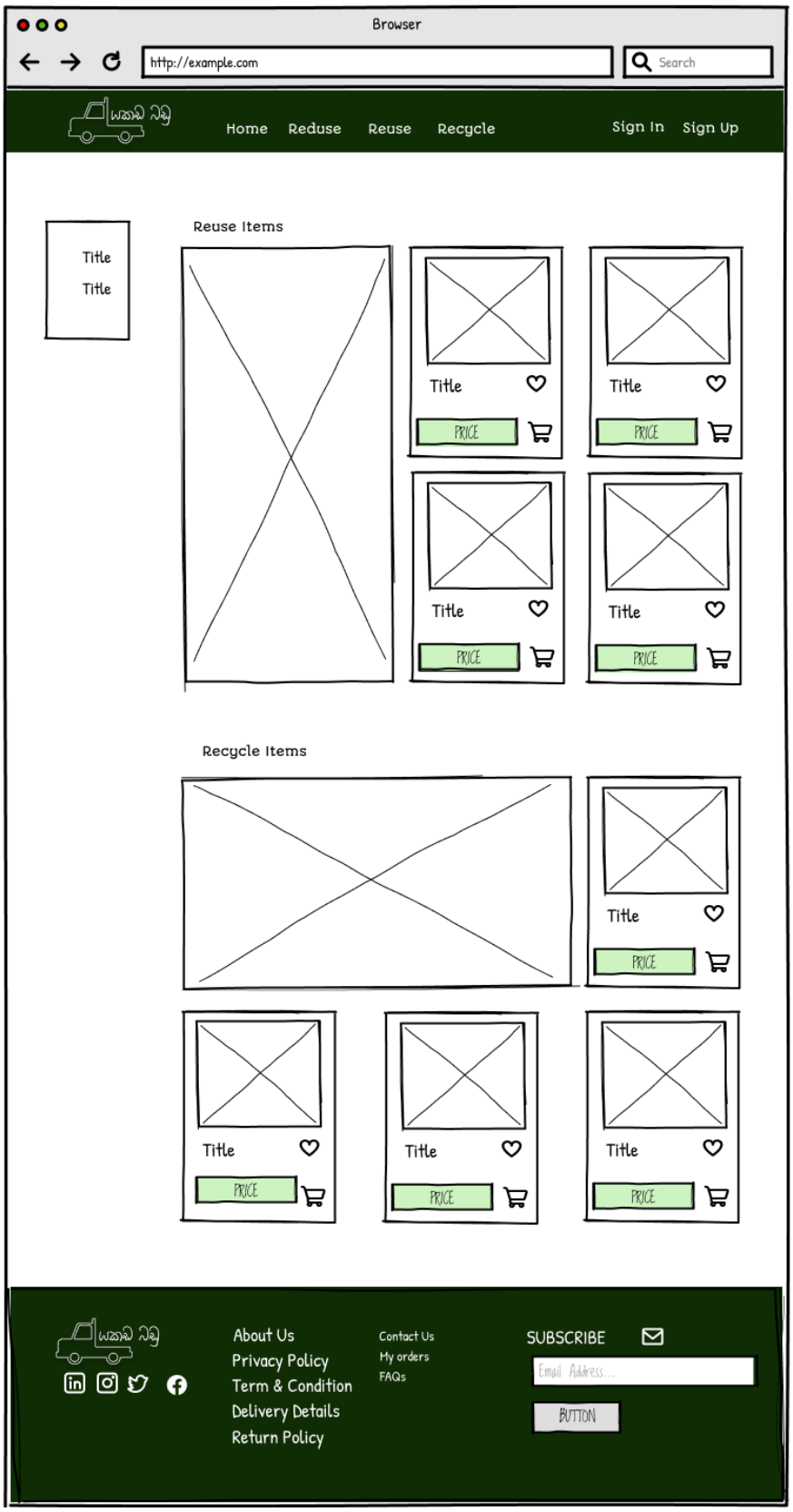
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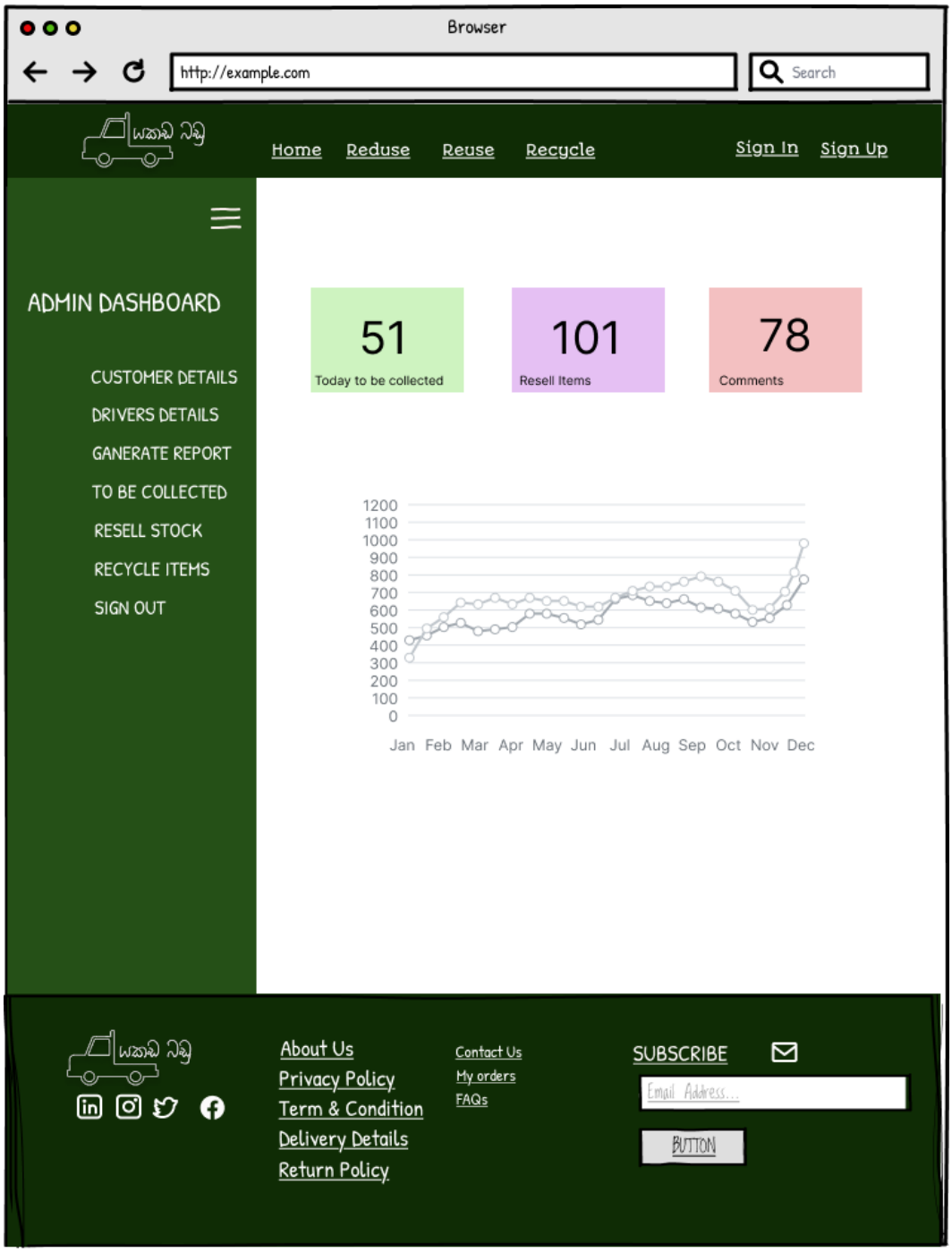
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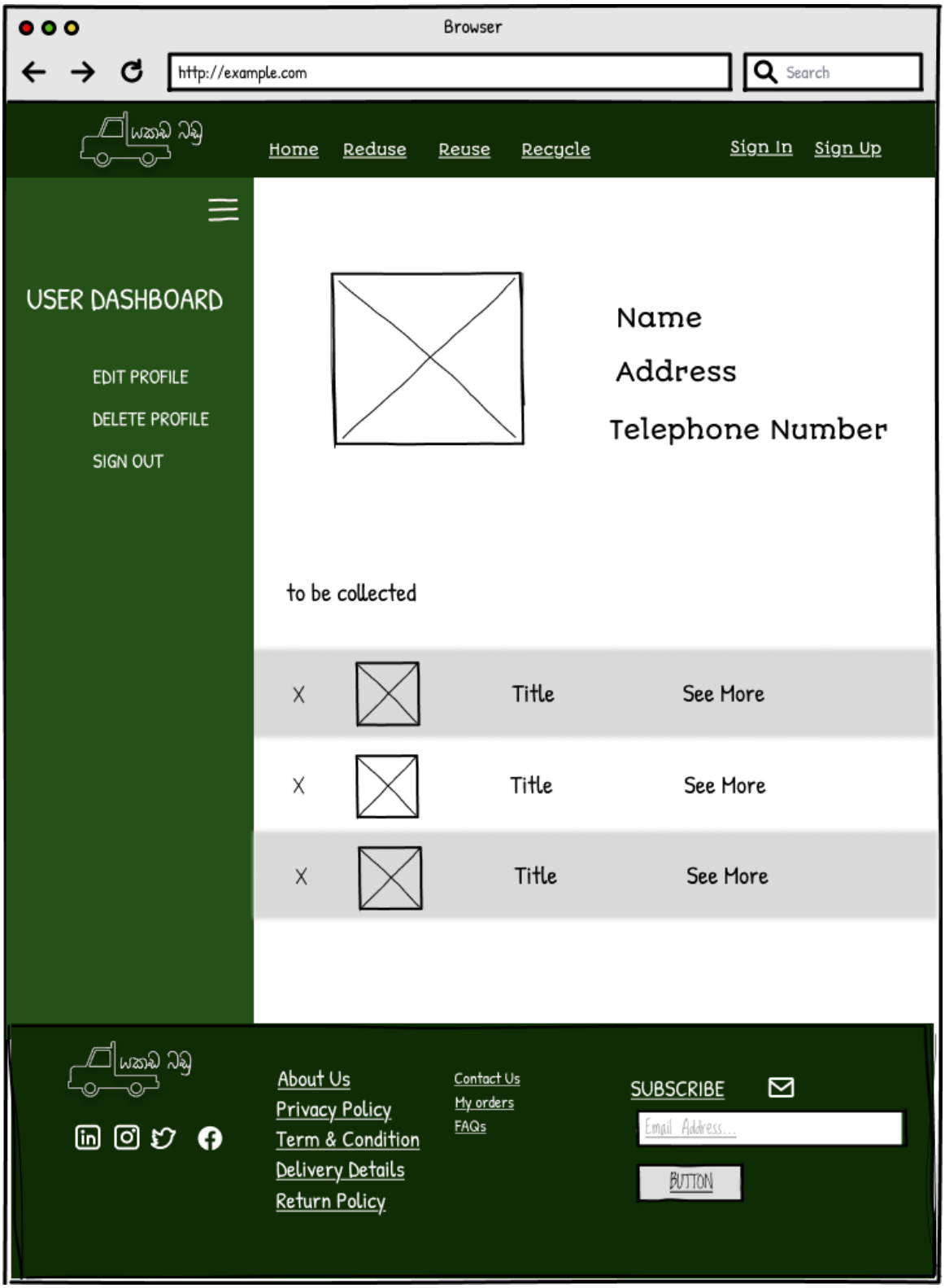
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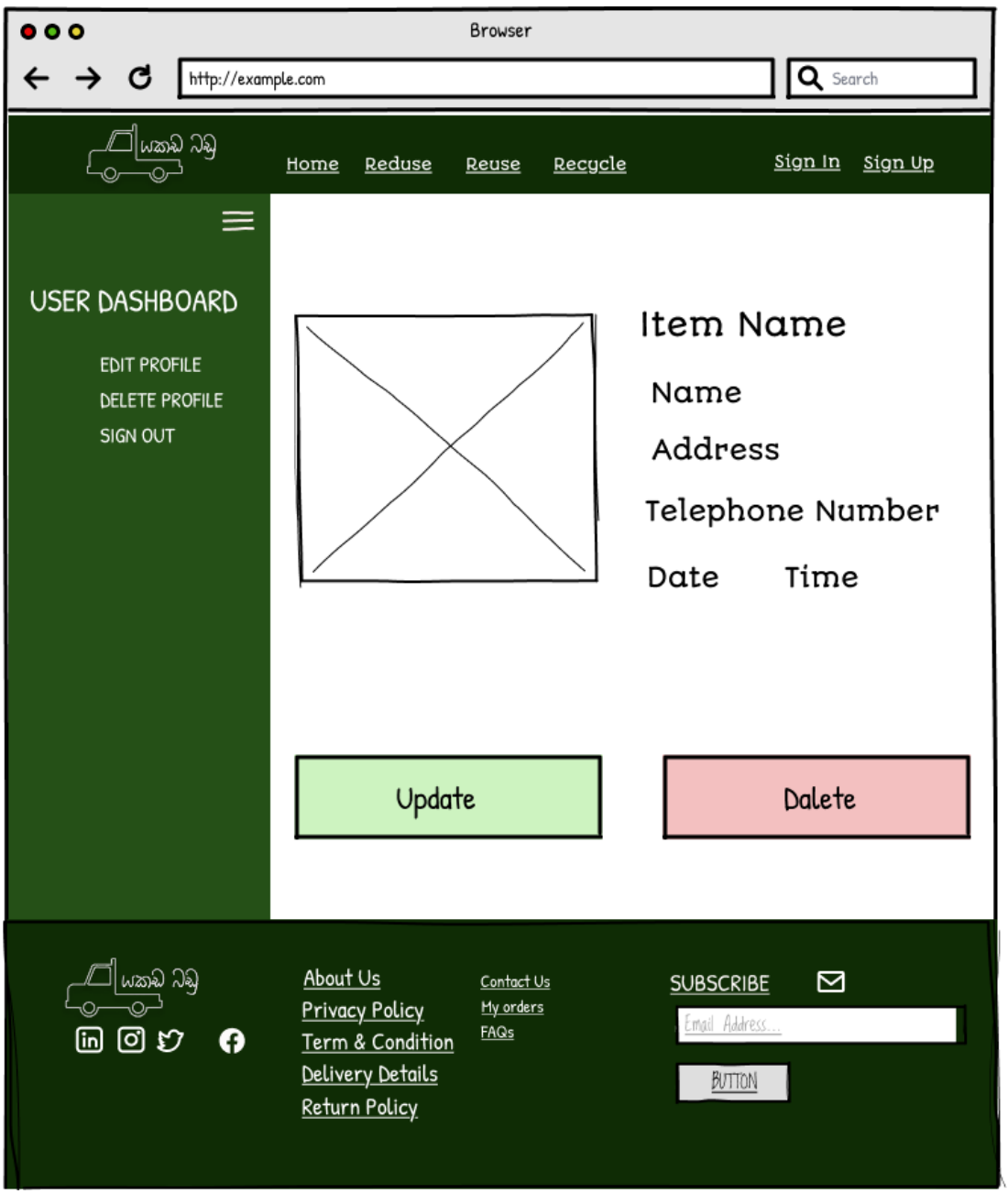
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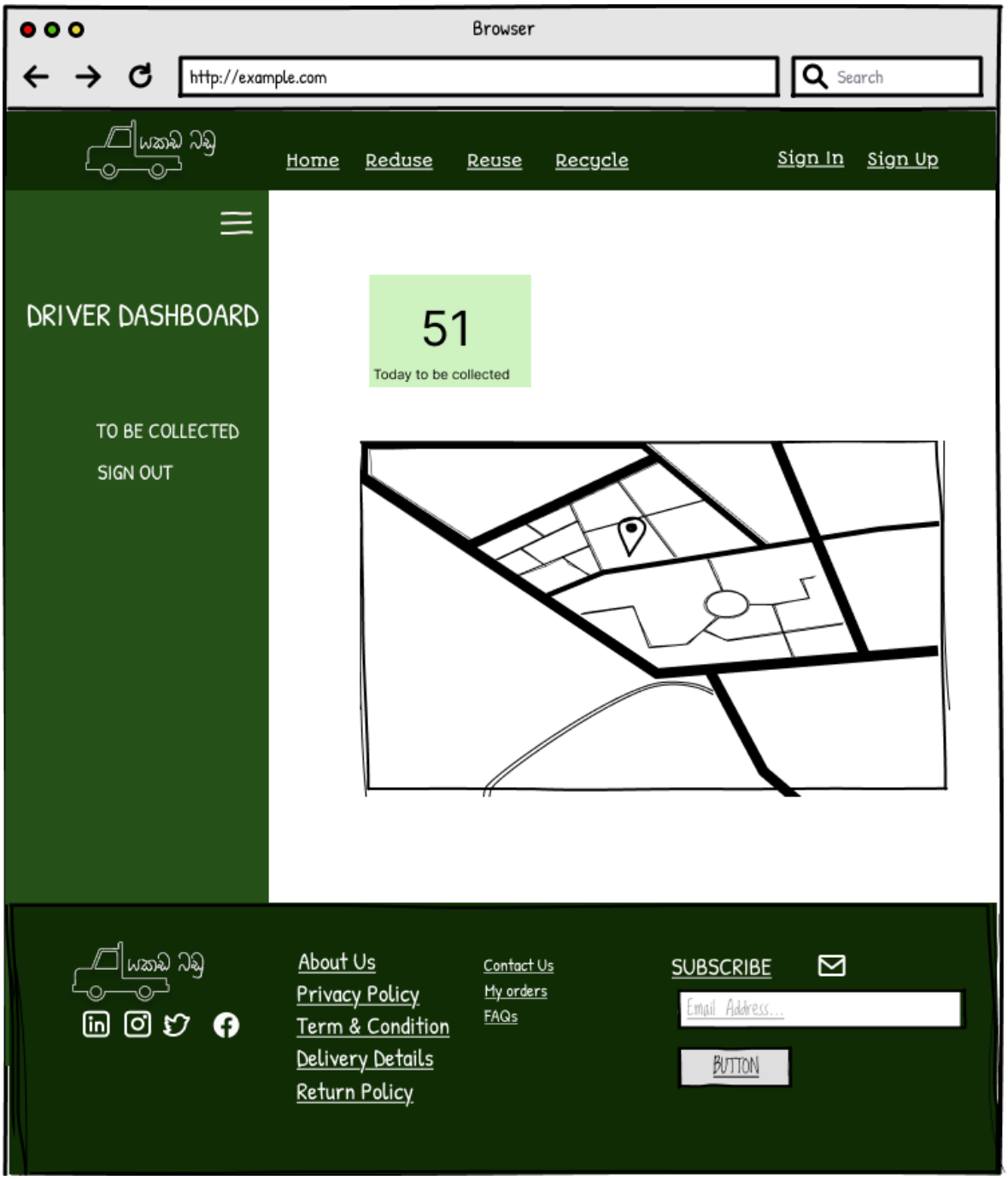
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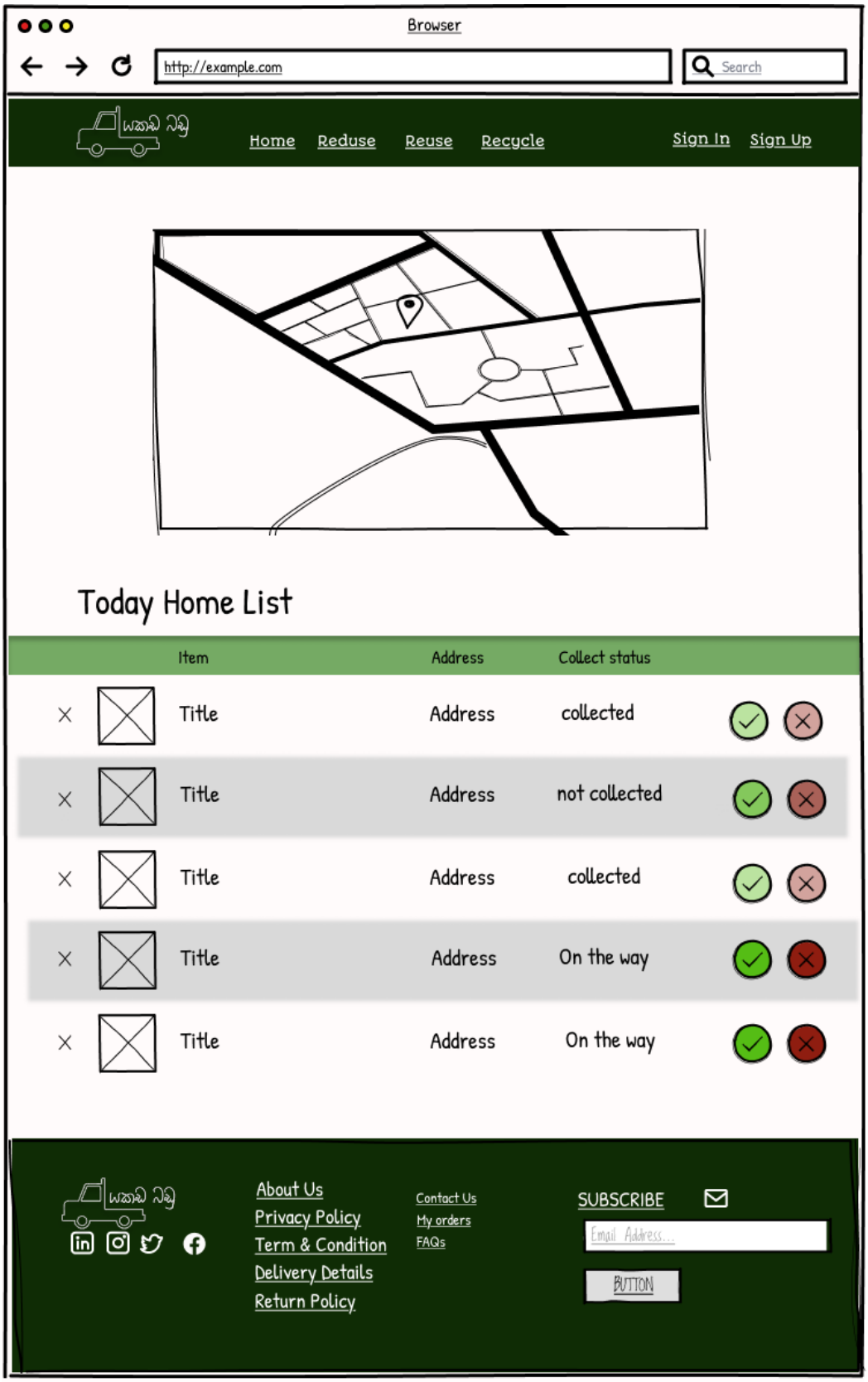
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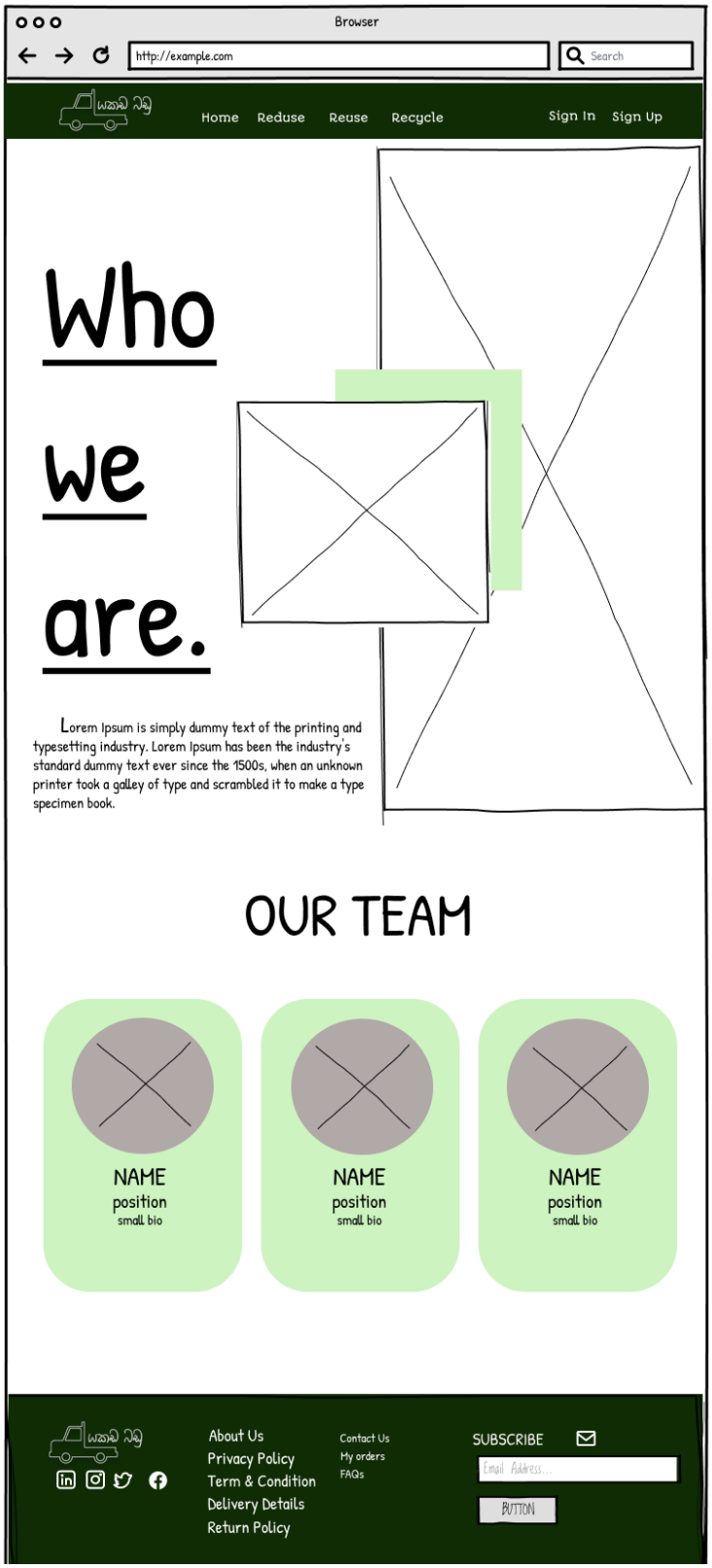
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Who we are.
Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book.
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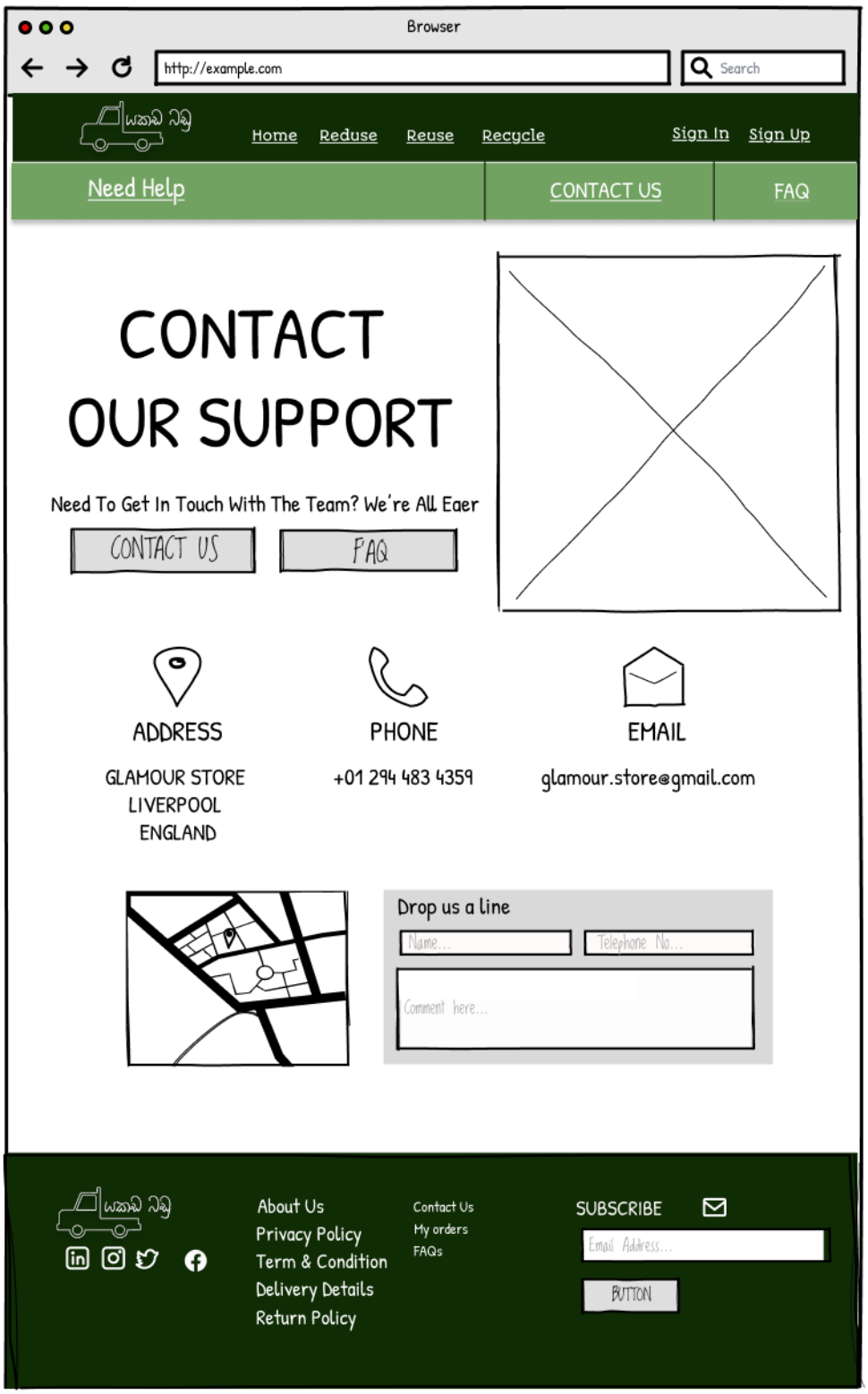
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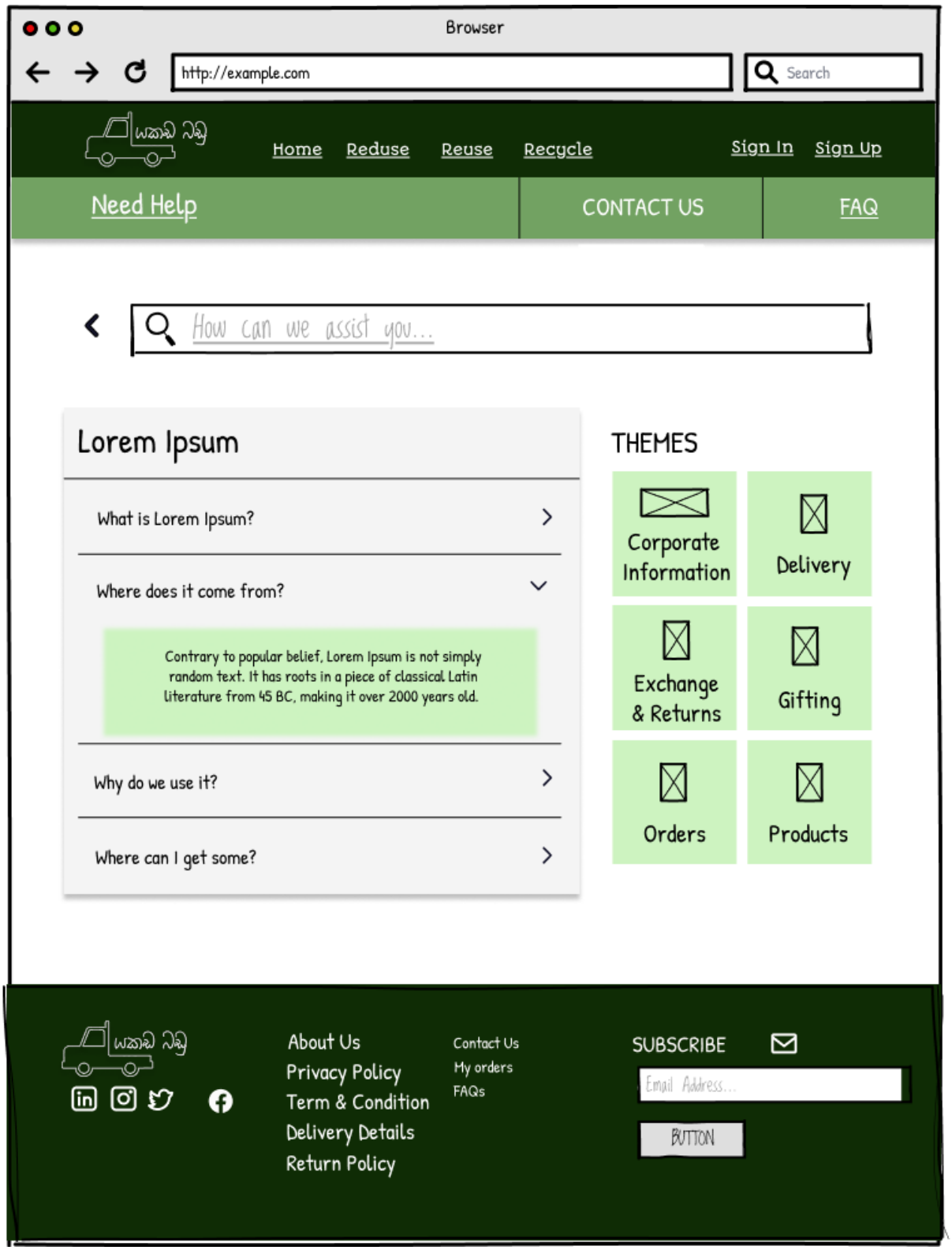
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FAQ
How can we assist you...
Lorem Ipsum
What is Lorem Ipsum?
Where does it come from?
Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old.
Why do we use it?
Where can I get some?
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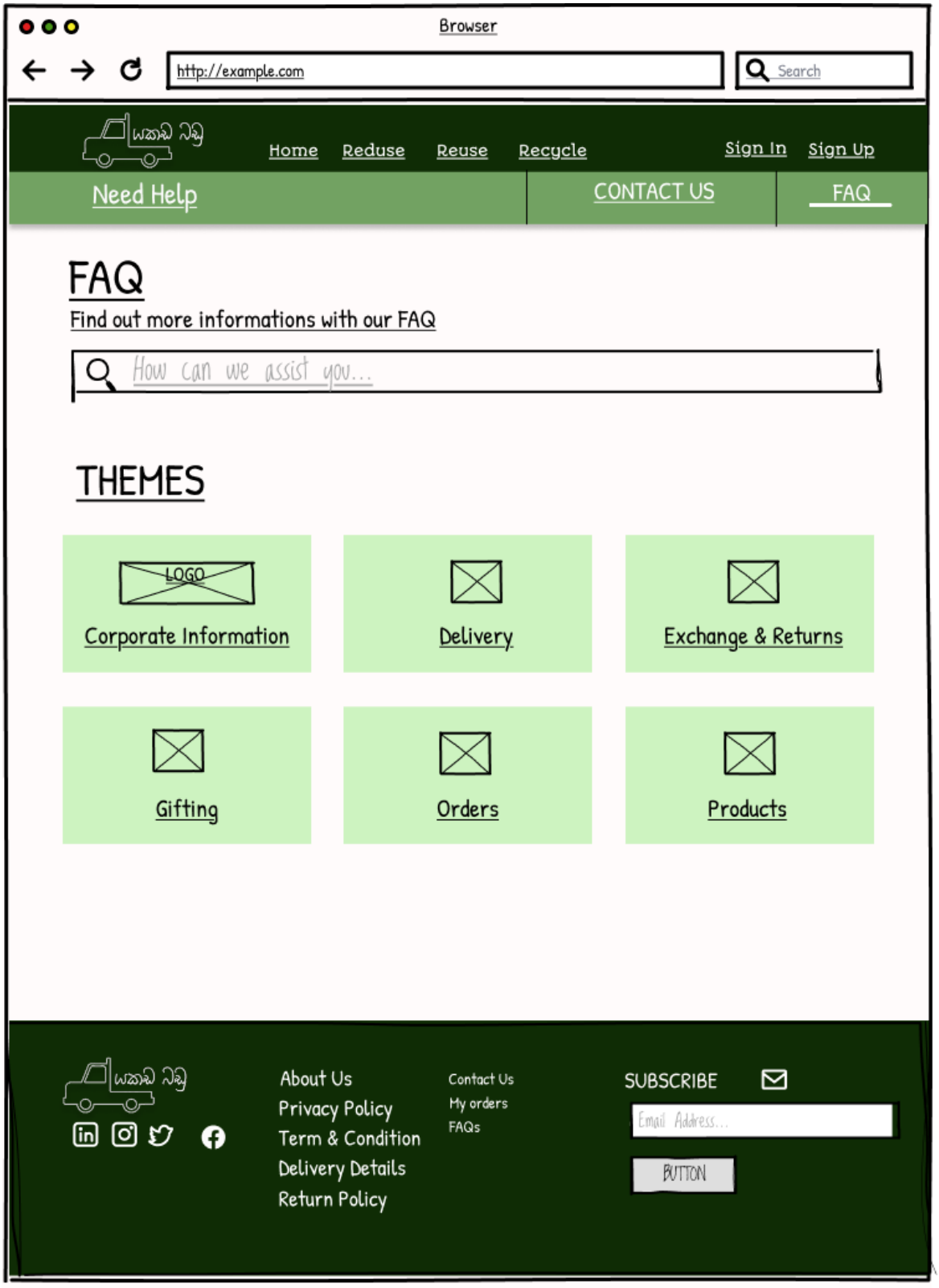
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Assignment – 01

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Database Schema

1.Users Table

1. UserID (Primary Key)
2. Name
3. Email
4. Role (User, Collector, Admin)
5. Password

2.Scrap Items Table

1. ItemID (Primary Key)
2. Category (Metal, Plastic, etc.)
3. SellerID (Foreign Key to Users)
4. Price
5. Status (Pending, Collected, Sold)

3.Pickup Requests Table

1. RequestID (Primary Key)
2. UserID (Foreign Key to Users)
3. ItemID (Foreign Key to Scrap Items)
4. Location
5. Status (Scheduled, In Progress, Completed)

4.Transactions Table

1. TransactionID (Primary Key)
2. BuyerID (Foreign Key to Users)
3. SellerID (Foreign Key to Users)
4. Amount
5. Date

5.Ratings & Reviews Table

1. ReviewID (Primary Key)
2. UserID (Foreign Key to Users)
3. CollectorID (Foreign Key to Users)
4. Rating (1-5 Stars)
5. Comment

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