

A PROJECT IN IT 332:  
INTEGRATIVE PROGRAMMING  
AND TECHNOLOGIES



# **CONSTRUCTION & EQUIPMENT RENTALS**

Mobile Application for Customer Support  
**using Ionic Framework**

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## **PROJECT DESCRIPTION**

Technology has become essential for the efficient and accurate flow of data in business processes. The ability to use technology to meet business requirements and improve customer service grows as these businesses become more dependent electronically. Specifically, in a construction business, where operations are needed to be regulated as they are the source of other businesses when it comes to equipment and services. A business of this nature is W Construction and Equipment Rentals in As-is, Bauan, Batangas.

However, numerous obstacles, such as the location's inaccessibility and the business's inability to respond to inquiries, hampered its ability to gain potential new customers. In order for the business to grow and pace with technology, businesses need to stride with the ever-developing technology and implement a solution to improve their marketing strategy and customer service. Incorporating the advancements on technology and the ability of clients to connect through a platform, the development of an application for customer support will provide the company, clients, and potential customers with seamless customer service in acquiring their requirements in the industry. Thus, the organization seeks to implement an intuitive platform with their company profile and an easy access to address and contact details for potential clients regarding their inquiry and request purposes.

In response, the team aims to design and develop a mobile application as a counterpart to the existing project proposal with the same title, with the focus on the functionalities for the customer's end.



## DEVELOPMENT MODEL



Figure 1. Agile Development Model

The team adapted the agile development model in the mobile application development of the stated topic. It includes phases namely Requirements (Analysis), Design, Development, Testing, Deployment, and Review.

## REQUIREMENTS ANALYSIS

This phase involves identifying requirements, estimating time and effort, obtaining authorization from the client and conducting an overall assessment to complete the project. The team members have obtained that only the functionalities on the customer end are included in the scope as the topic is to be developed as a mobile application.

## DESIGN

This is where the system architecture, and the user interface of the system is designed as required by the client while optimizing user interactivity and user experience.

## DEVELOPMENT

Using Ionic as a framework for development, all system requirements are converted into code.

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## TESTING

This phase ensures that the code is free of errors and if potential bugs or flaws are found in the creation of a system. Necessary test cases and quality checks are determined and executed by both the team members in charge of quality assurance and development.

## DEPLOYMENT

The mobile application is accessible through hosting, clients can now access fully deployed application.

## REVIEW

Reviewing is vital for determining whether the results met the requirements and have satisfied the users. The deployed project will undergo maintenance to ensure process continuity.

## SYSTEM ARCHITECTURE

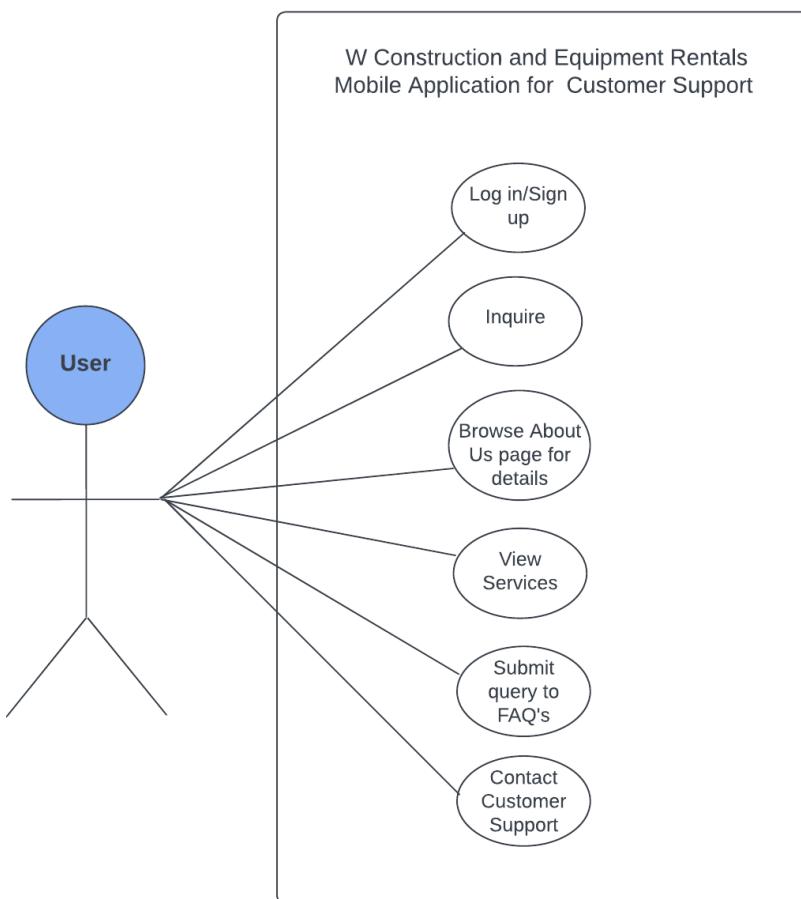
The following figures shown are used to visualize and demonstrate the application's functionalities, interactions between the key actors, use cases, and relationships, and the sequence of the application's operation.



Figure 2. Sequence Diagram

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Figure 2 shows how the system communicates in terms of running output. The diagram explained how it worked in a sequence or situation. The diagram shows the users as key characters. The user may browse the specific details such as services, inquiry and FAQ's then the system displays the information. Users can access the system via logging in or registering an account with the system.



**Figure 3. Use Case Diagram**

Figure 3 specifies the basic features and functionalities of the system. It provides a clear and concise overview of the system, making it easier to understand and optimize efficiency. It shows key actors that interact with the system, such as users. The users are the ones who will use the mobile application for services and inquiry purposes.

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## GITHUB REPOSITORY

Link to GitHub Repository:

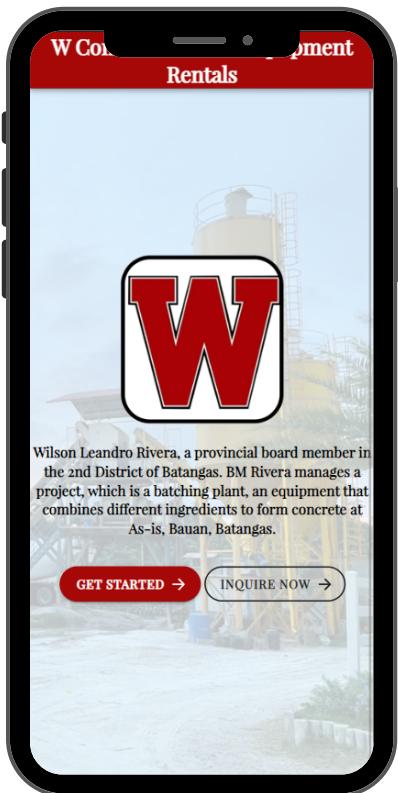
<https://github.com/chelseaclairegd/w-construction-midterms>

The screenshot shows the GitHub repository page for 'w-construction-midterms'. The repository is public and contains one branch ('main') and one commit ('d00016a'). The commit was made 14 minutes ago by 'chelseaclairegd' and is labeled 'W-Const Commit'. The commit message is 'W-Const Commit'. The repository structure includes files like .browserslistrc, .editorconfig, .eslintrc.json, .gitignore, angular.json, capacitor.config.ts, ionic.config.json, karma.conf.js, package-lock.json, and package.json. The right sidebar provides information about the repository, including activity (0 stars, 1 watching), releases (none), packages (none), and languages (JavaScript, CSS, and others).

The screenshot shows the GitHub repository page for 'w-construction-midterms' with the URL 'https://github.com/chelseaclairegd/w-construction-midterms/tree/main/src/app'. The left sidebar shows the repository structure with 'Code' selected, showing the 'src/app' directory. The main content area displays the commit history for the 'src/app' directory. It shows 11 commits from 'chelseaclairegd' labeled 'W-Const Commit', all made 7 minutes ago. The commits are listed with their names: .., aboutus, account, contact, faq, forgot, home, inquiry, landing, login, register, and services.

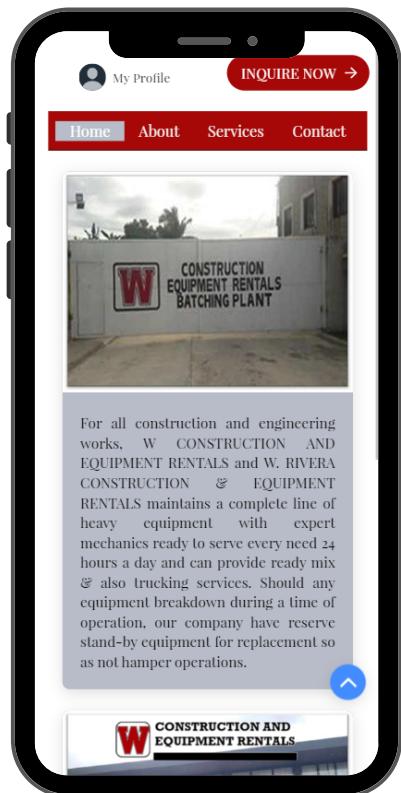


## APPLICATION SCREENSHOTS

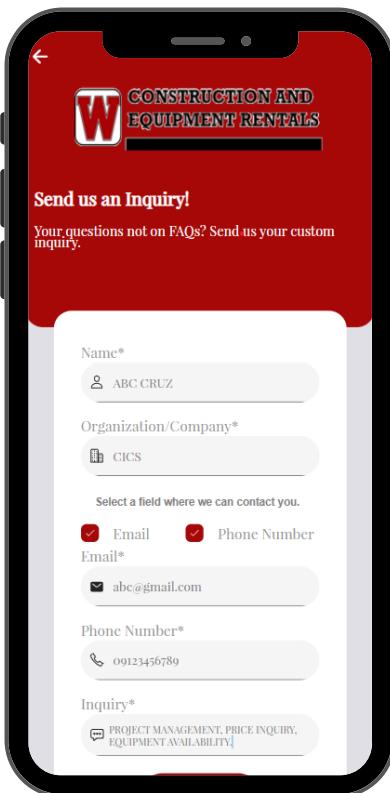


### Landing Page

The page shows the company logo, a brief description of the business, and buttons that redirect to login and to the home page itself.



Get Started

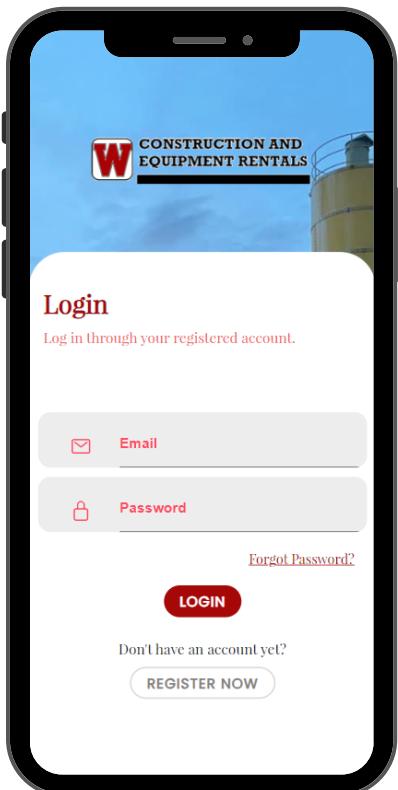


Inquire Now

### Redirect Pages

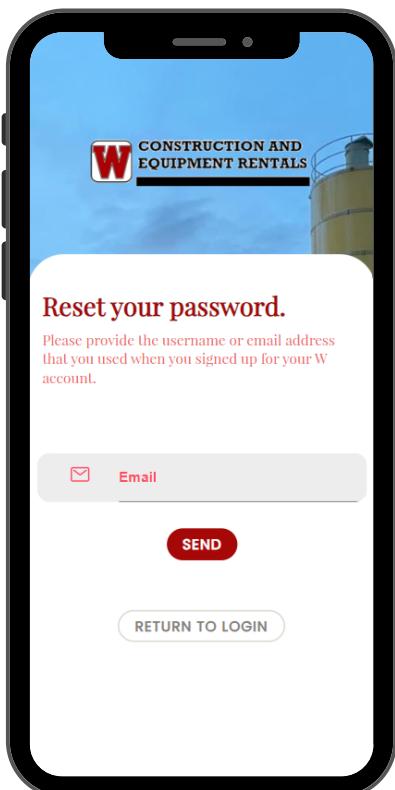


## APPLICATION SCREENSHOTS

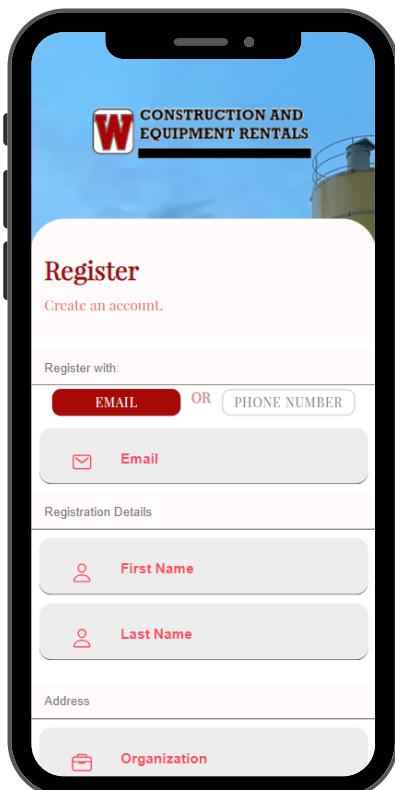


### Login Page

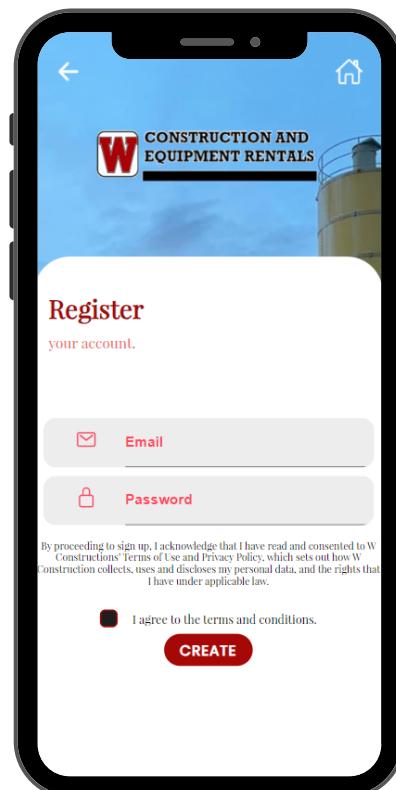
The page prompts the user to login in order to access the application fully. Otherwise, the application asks the user to register an account.



**Forgot Password**



**Sign Up  
Redirect Pages**

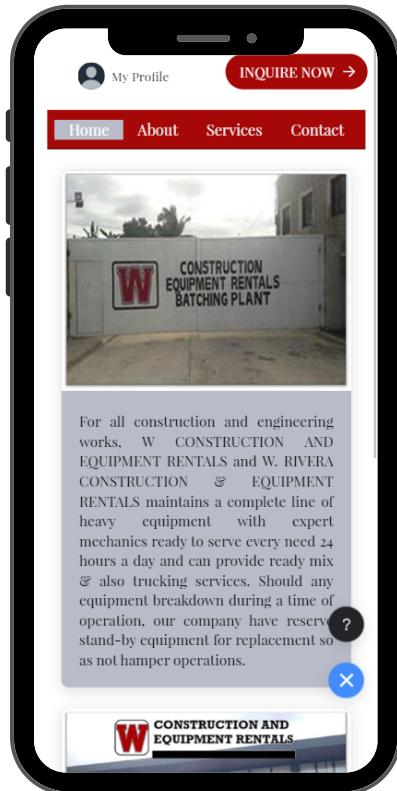


**Register**

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## APPLICATION SCREENSHOTS

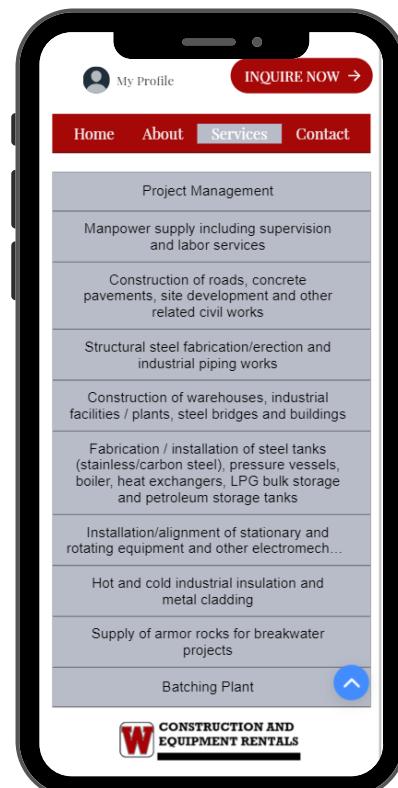


### Home Page

The Homepage includes navigation toolbar for easy access of information ABOUT the company, their SERVICES, and allows users to CONTACT them through the displayed details.

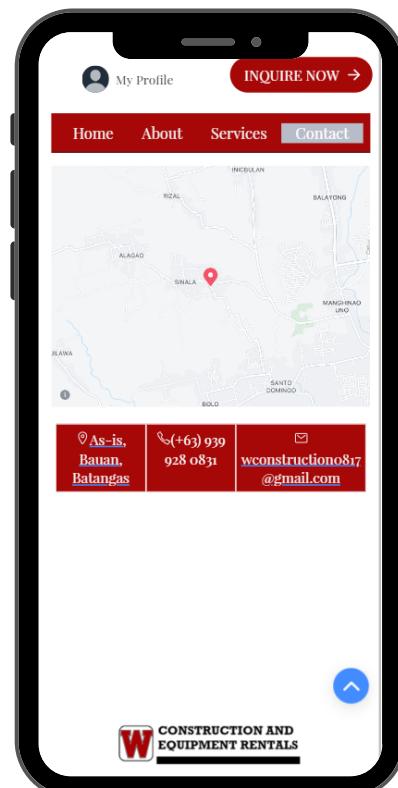


### About Us



### Services

### Redirect Pages



### Contact Us

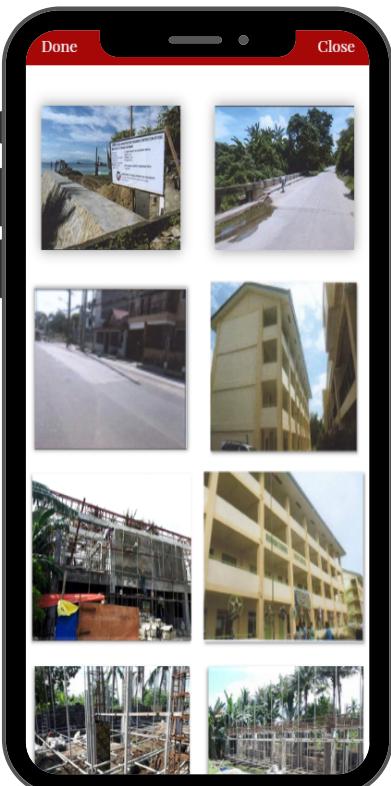


## APPLICATION SCREENSHOTS

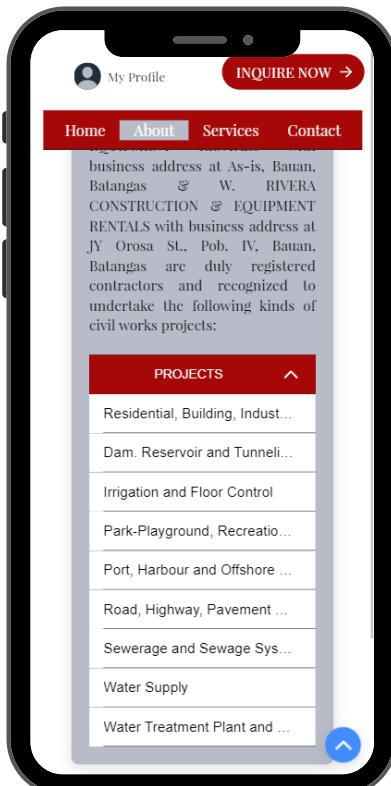


### Home Page - GALLERY

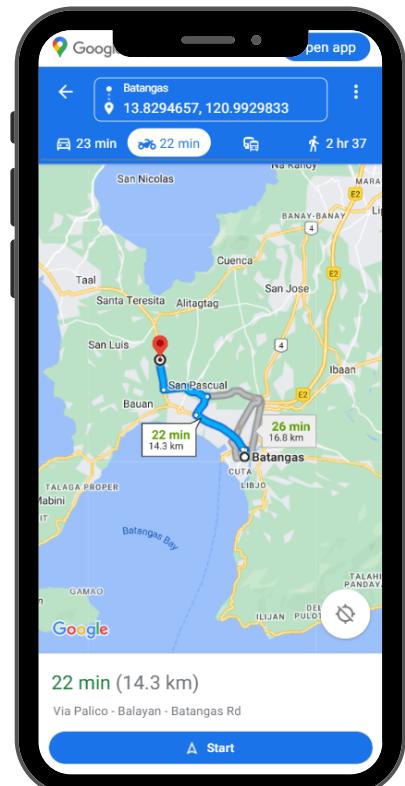
All of the services available for reservation are displayed in a gallery located in the Home Page.



Gallery



Services > Projects



Contact Us > Map

### Additional Pages

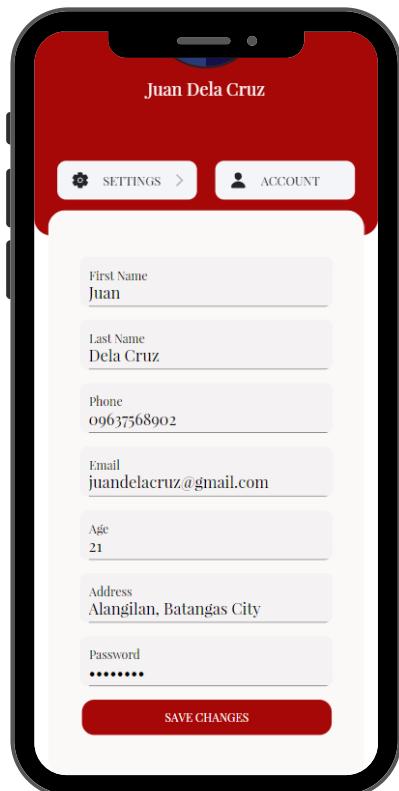
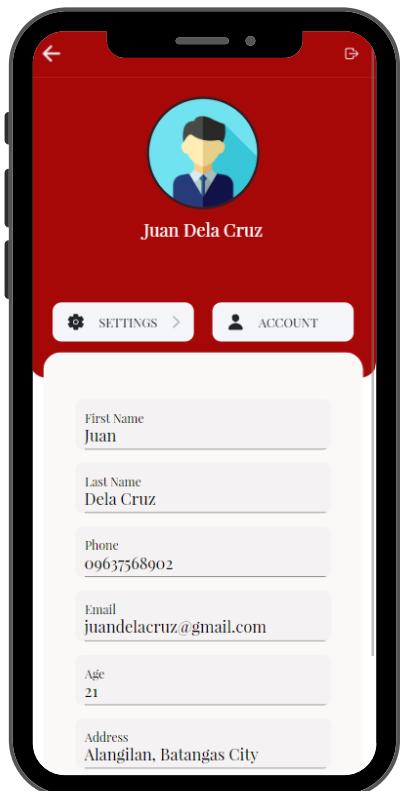


## APPLICATION SCREENSHOTS



### Profile Page

The information of the user, which are registered upon sign-up are displayed and allowed for modifications.



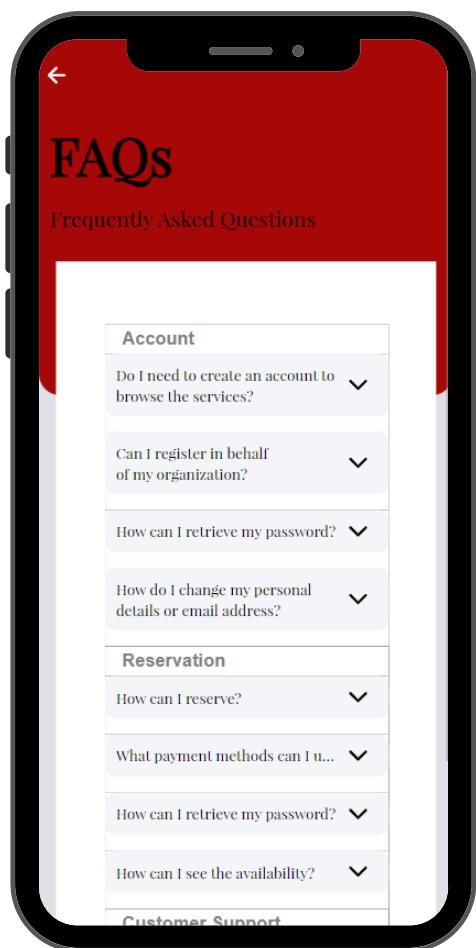
### Account Settings



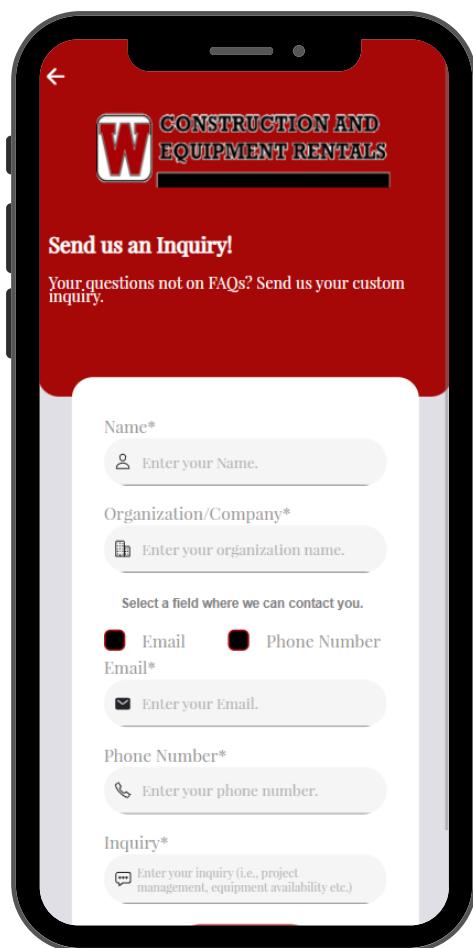
## APPLICATION SCREENSHOTS

### Customer Support Pages

With the main objective of this project, dedicated pages for customer support are provided. Users can access the Frequently Asked Questions (FAQs) page, and if customizing their inquiry or request, they can direct to Inquiry Page, which is located both on the Home and Contact Us pages. Moreover, they can fill up the Inquiry Form without having to register their account, since it also asks for inputs for personal details.



FAQs Page

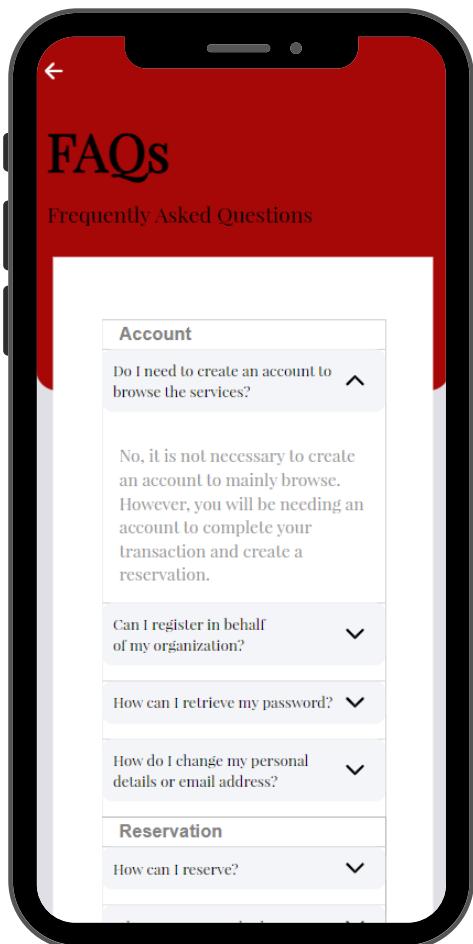


Inquiry Page

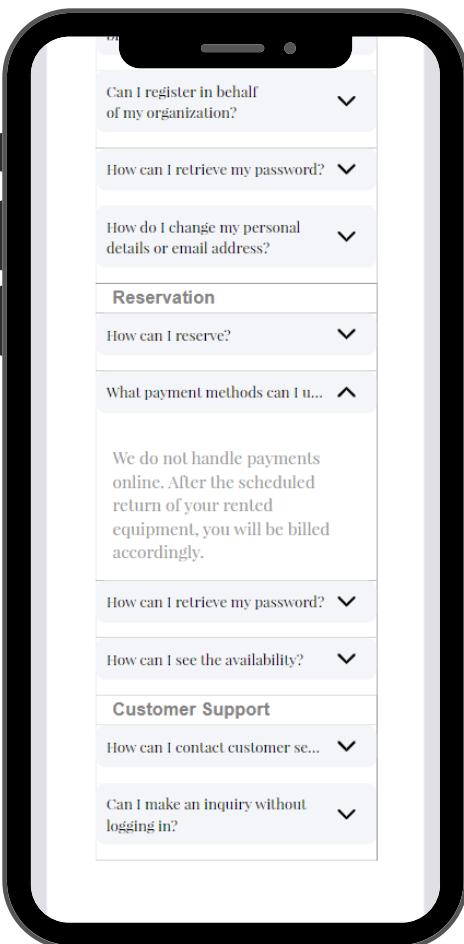


## APPLICATION SCREENSHOTS

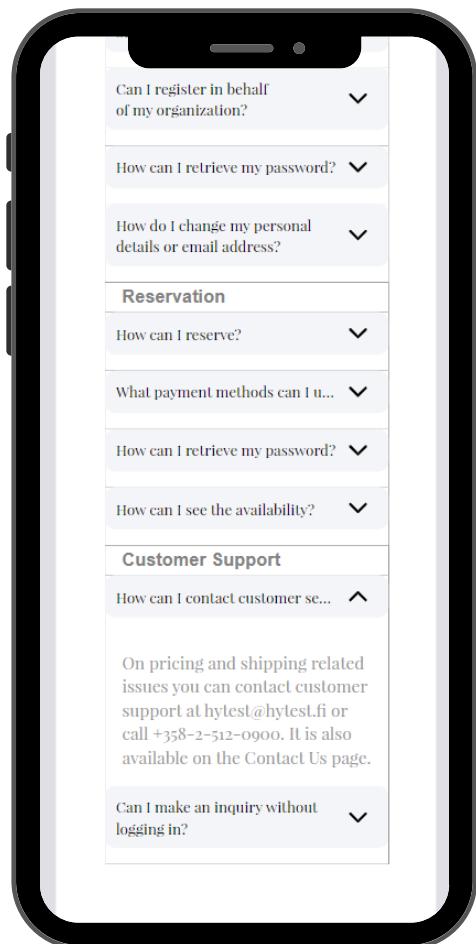
### Customer Support Pages (FAQs)



**Account**



**Reservation**



**Customer Support**



## **APPLICATION SCREENSHOTS**

### **Customer Support Pages (Inquiry)**

The image displays two side-by-side screenshots of a mobile application interface for customer support inquiries. Both screens feature a red header bar with the company logo 'CONSTRUCTION AND EQUIPMENT RENTALS' and a back arrow icon.

**Left Screen (Initial Inquiry Form):**

- Title:** Send us an Inquiry!
- Text:** Your questions not on FAQs? Send us your custom inquiry.
- Form Fields:**
  - Name\*: Text input field with placeholder "Enter your Name."
  - Organization/Company\*: Text input field with placeholder "Enter your organization name."
  - Select a field where we can contact you:
    - Email (radio button)
    - Phone Number (radio button)
  - Email\*: Text input field with placeholder "Enter your Email."
  - Phone Number\*: Text input field with placeholder "Enter your phone number."
  - Inquiry\*: Text input field with placeholder "Enter your inquiry (i.e., project management, equipment availability etc.)"

**Right Screen (Completed Inquiry Form):**

- Title:** Send us an Inquiry!
- Text:** Your questions not on FAQs? Send us your custom inquiry.
- Form Fields:**
  - Name\* (with placeholder "Enter your Name.")
  - Organization/Company\* (with placeholder "Enter your organization name.")
  - Select a field where we can contact you:
    - Email (radio button)
    - Phone Number (radio button)
  - Email\* (with placeholder "Enter your Email.")
  - Phone Number\* (with placeholder "Enter your phone number.")
  - Inquiry\* (with placeholder "Enter your inquiry (i.e., project management, equipment availability etc.)")
- Send Button:** A large red button labeled "SEND".



## TEAM MEMBERS



### DAQUIS, CHELSEA CLAIRE G.

Main Role: Documenter

- Responsible for documenting the whole development process
- Handles copies of final source codes and relevant files for repository
- Participated in programming, designing pages that requires input
  - Login
  - Inquiry
  - Forgot Password
  - FAQs
  - Register/Sign Up
- Assisted in applying uniform CSS to certain pages (Profile)



### MACUHA, KEITH LESLIE H.

Main Role: Design the structure of the system

- Coordinate with the programmer with the assign code
- Provide additional information in the documentation
- Create the system architecture in the documentation that includes:
  - Sequence Diagram
  - Use Case Diagram
- Participated in programming that requires input:
  - Contact
  - Profile
  - Account Settings



### RIVERA, KAREN JUSTIN ELAINE O.

Main Role: Lead Programmer

- Keep the original copies of the source codes and images used in the application
- Collect and connect all the codes of the application that was assigned and sent by the team.
- Take part in programming, designing pages, and finalizing of the whole mobile application that includes:
  - Landing Page
  - Home Page
  - Login & Register Page
  - Profile Page
  - Inquiry Page
  - FAQs Page
- Capture all the pages of the mobile application for the documentation