

# Discipline of Information Technology, Media and Communication

College of Art, Business, Law and Social Sciences (ABLSS)

# PROJECT DECLARATION

Group Members (full name and student number):

Member 1: Marco Garzon-Lara

Member 2: Venkata Kota ( Tarun )

Tutor's Name: Hong Xie

The URL of our web application for large screen on eris server is:

https://eris.ad.murdoch.edu.au/~33970651/Assignment2/WebClient/index.html

Your assignment should meet the following requirements. Please confirm this (by ticking boxes) before submitting your assignment.

- [X] All details above are completed.
- [X] The archive file (a zip file) contains the file "Assignment2.pdf" and "Assignment2Plan.pdf".
- [X] The archive file contains sub-directory named "Server" which contains all files related to the server part of your application.
- [X] The archive file contains sub-directory named "WebClient" which contains all files for the web front end for large screen.
- [X] The archive file contains sub-directory named "Cordova" which contains the Cordova project directory of your Cordova app
- [X] The documentation was prepared in accordance with the Documentation and Submission Requirements specified in Assignment 2's question sheet.
- [X] This archive file will be submitted to ICT286 Unit LMS.
- [X] We have kept a copy of this assignment, including this archive file.
- [X] Our application is hosted on the server eris.ad.murdoch.edu.au.
- [X] We have signed the Group Declaration in the next page.

#### **Group Declaration**

As a group assignment, each member of the group is expected to make an equal contribution to the assignment and receives the same mark for the assignment.

However, we recognise that on some occasions and due to various reasons, the actual contributions to the assignment from the two members could be unequal despite the best efforts of each member. In this case, we can still accept your assignment provided that all members of the group reach an agreement on their percentages of contribution to the assignment, and the agreement accurately reflects the real contribution by each member. In such a case, a member's mark is linked to his or her agreed contribution to the assignment and is calculated using the following formula:

A member's mark = minimum ( group mark x the member's percentage of contribution x 2, group mark + 10, 100 )

On some rare occasions, the two members of the group fail to reach an agreement on their contributions to the assignment. In such a case, in order for your assignment to be marked, each member of the group must complete a detailed *Task Breakdown List* and state his or her own claim of the percentage of contribution to the assignment. Your tutor will then award each member a mark based on his assessment of the quality of the assignment as whole as well as his assessment of that member's contribution to the assignment.

Please complete and sign *one* of the three declarations below:

We have made <b>equal</b> contributions to this assignment same mark for this assignment.	,	
Signature (member 1):	Date: 22-09-2022	
Signature (member 2):	Date:	
We have made <b>unequal</b> contributions to this assign is given below (note the sum of the contributions by	nment. The percentage of contribution by each of us y the two members must be equal to 100%):	
Member's name:	Contribution (%):	
Member's name:	Contribution (%):	
We understand that each of us will receive a mark for this assignment that is linked to our contributions to the assignment. The mark will be calculated using the following formula:		
A member's mark = minimum ( group mark x the member's percentage of contribution x 2, group mark + 10, 100 )		
Signature (member 1):	ber 1):Date:	
Signature (member 2):	Date:	
We are unable to reach an agreement on the percentage of our contributions to this assignment. However, in order for our tutor to be able to properly assess the work completed by each of us, each of us has completed a detailed Task Breakdown List which is included in this submission. We will accept our tutor's determination of our contributions to this assignment.		
Signature (member 1):	Date:	
Signature (member 2):	Date:	



# ICT286 Assignment 2

Marco Garzon Lara (33970651) Venkata Kota (Tarun) (34378285)

#### **Assignment Description**

This assignment is the practical implementation of a web application. Our web application is a grocery store (Agrical Produce) that dynamically fetches item listings and allows users to order grocery products online and checkout through the use of a cart implementation. It also allows users to register an account which they can then use to log in on the website and be able to save their personal data for faster checkout. The application utilises database queries to fetch items from the back-end and display them in the front-end through the use of tools such as HTML, JavaScript, AJAX, PHP and CSS.

#### **Discussion of Solution:**

Our web application is implemented through Singe-Page Application design (SPA), which means that our entire web application consists of a single html page with different articles as 'views' which are all asynchronously loaded when the page is accessed. We have chosen to use SPA for our web application because it is fast and efficient, and the client does not need to waste time re-downloading the webpages every time they switch pages in our application.

All scripts and styling for the web application are written in separate files as opposed to being embedded into the HTML code to keep the codebase clean, legible and consistent.

The views in the HTML page are hidden or displayed according to which element of the page is being accessed. All the form validation and submission for the views is handled through either JavaScript or PHP. The JavaScript files in the application are mainly used to input handling into the html forms, and the PHP scripts handle all the database queries to retrieve data from the MySQL database.

To keep track of changes in the project code and to ensure version control of our project was consistent, we utilised Git to keep track of all changes to our code. We then submitted all the changes onto a GitHub repository where we could host the project online so anyone in the group could access the project files at any given time without having to rely on other group members to receive project files.

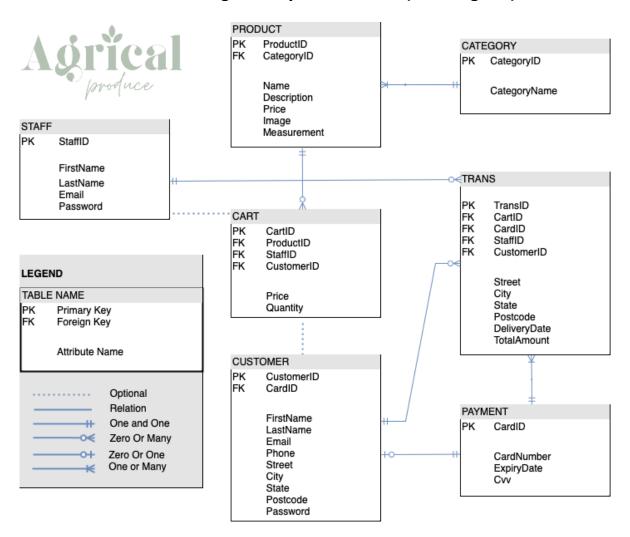
#### Backend:

For the backend aspect of the assignment we have utilised PHP and MySQL to compute all queries to the front-end of our applications. The PHP scripts connect to the database and send SQL queries to the database so entries can be retrieved from the chosen tables, and then the data is displayed through the use of various PHP functionality such as Prepared Statements (using data binding to increase datahandling security), POST statements, SESSIONS, etc.

Database Account: X34378285

Database Name: X34378285

#### The design for MySQL database (ERD diagram):



The database is designed in such a way that it provides flexibility for us to capture all the assignment requirements while also simultaneously allowing us to meet Agricals' requirements. The PRODUCT and the CATEGORY tables are the most used ones, and they are the only ones that are manually populated with the data, and they can be populated by Staff roles.

#### Files in the Backend of The Web Application

File Name	Location Folder	Description/Purpose
index.php	Server	To facilitate the shopping
		cart facility and enables user
		to save their cart in session.

cart_dbConn.php	Server	To establish a connection to the database
customerlogin.php	Server	Login as a registered customer.
stafflogin.php	Server	Login as Agrical staff member
registeraccount.php	Server	Register Customer account for website
search.php	Server	Gives response back to search.js, based on the search value sent.
session.php	Server	Redirects User after login success or failure.
gall.php	Server	Gives response back to gall.js (gall – gallery of products)
stafflogin.php	Server	Login as Agrical staff member

#### Frontend:

For the front-end of our web application we have utilised HTML, JavaScript (with AJAX functionality) and CSS to create a coherent and visually pleasing aesthetic to enhance user experience.

#### Design Specifications for CSS styling and visual design:

Green colour: #b4c2b4 White colour: #FFFFFF

- 'Agrical' Font in logo: Giaza (54.2 size used), ideally used for headings of pages.
- 'Produce' Font in logo: Moontime (35.9 size used), ideally used for subheadings.
- The colour green is used as it represents nature and symbolizes vibrant health, which matches to the goals of Agrical to build a healthy and immune community through organic and fresh produce. From a user experience perspective, green is a relaxing colour and enhances the experience of the user while using the app.
- White colour is used to bring and emit a sense of peace and calm, comfort and hope while using the app such that users can build their trust with Agrical produce.
- Together these colours combine together to help define and symbolise the values of Agrical in a psychological manner to the user. The combination of these colours also provide the luxury feel to the customers.

•Font-Family: 'Epliogue', 'Inter', 'Roboto' were the top three commonly used fonts in the CSS.

# Files in the Frontend of The Web Application

File Name	Location Folder	Description/Purpose
index.html	WebClient	The main web application
		page where all the SPA
		views are implemented
customerlogin.css	WebClient/css	The styling for the customer
		login page
registeraccount.css	WebClient/css	Styling for the customer
		registering page.
gall.js	WebClient/js	Requests server to provide
		product gallery.
index.js	WebClient/js	The view-switching handler
		for the index.html SPA
		design
search.js	WebClient/js	Requests server to provide a
		product gallery through live
		search.
registeraccount.js	WebClient/js	Allows Users to Register an
		account and stores data to
		CUSTOMER table.
Checkout.js	WebClient/js	Redirects user back to home
		page after checkout is
		successfully completed.

# **Cordova Files**

File Name	<b>Location Folder</b>	Description/Purpose
search.js	cordova/www/js	Requests server to provide a
		product gallery through live
		search.
customerlogin.css	cordova/www/css	The styling for the customer
		login page
registeraccount.css	cordova/www/css	Styling for the customer
		registering page.
gall.js	cordova/www/js	Requests server to provide
		product gallery.
index.js	cordova/www/js	The view-switching handler
		for the index.html SPA
		design

search.js	cordova/www/js	Requests server to provide a product gallery through live search.
index.html	cordova/www	Serves as a generic style sheet template for Cordova pages.

#### 3.Self-Diagnosis and Evaluation

We had great co-ordination and planning. Initially we were on top of things and came up with a feasible solution throughout our meetings. The solution we drafted looked realistic and not too ambitious. We thought it would be easy to build and because of this we had somewhat of an arrogant attitude which led to bad time management. Neither of us have had prior coding experience with AJAX, PHP, jQuery and JavaScript. So, we aimed to develop those skills through studying the lecture slides and other useful content on the internet prior to building our solution to avoid facing many errors.

We were wrong in assuming the implementation would be easy. We kept on facing errors and spent too much time figuring out how to troubleshoot. And these delayed major parts of our assignment and put strict time constraints on us. Considering all the Assignment requirements and the time we had left to implement them, we started prioritising the requirements, and we prioritised our tasks based on this list:

- 1. Functional Requirements Basic
- 2. Documentation, Presentation
- 3. Description
- 4. Technical Requirements
- 5. Functional Requirements Advanced
- 6. Cordova

Though we struggled with a few of the basic functional requirements such as cart, search bar. We managed to implement it seamlessly into the SPA, with a couple of restrictions. We have enhanced the search bar to the next level by implementing a live search bar facility which provides the user's results while they are typing which we believe would enhance the users' experience and align with Agrical's values. We have also incorporated brief information in the home page which would meet the requirement of incorporating basic information and implemented Agrical's visual elements wherever possible to deliver a unique experience to the Customer. We were successful in delivering these requirements with the support of languages such as HTML/CSS, PHP, and AJAX, JavaScript. For majority of our assignment, we were successful in implementing the SPA by utilising only HTML and CSS for the front end and using AJAX/JS to communicate with the server side, which was developed in PHP

by communicating with SQL Database for data. However, in some parts of the assignment like the shopping cart, we couldn't fully meet the requirement of SPA as we weren't successful in completely embedding the PHP file into the 'index.html'. So, we made 'Shopping Cart' visible to only Users when they click 'Add to Cart'. However, we built the 'Shopping Cart' page such that it adheres to all SPA requirements. Though this was complicated to implement, we had to do it to enable Cart Saving to Session. We couldn't use the Table we have created for Cart, as we originally created it for our understanding on how an e-commerce app would work. And we later realised that it was not mandatory anyway and decided to scrap the use of the table to save time.

We also were particular about how our website was looking like and shaped it the best way to meet Agrical's values of providing their customers and users with a new and unique experience. We followed the style theme of Agrical and we did our best to implement it to all our pages. We have also added all requirements related to Customers including their account registration, logon and logout and able to order products through a series of steps. We were able to partially implement the login and logout part for customers and even registering new customers. All the account functionality works as intended but completing login or registration forms do not redirect user back to the page. We didn't feel like modification was necessary in our case, as the Customer can be ordering products for their family members who may not be living in the same address as them, and to meet the users' constantly dynamic requirements such as card details we always ask them to enter their address details and card details while they are checking out their cart. This may be inefficient; however, we were looking at improving this process by trying to save their data to their account and let them be able to use the saved data to fill up the checkout if they wish to. Unfortunately, we couldn't implement this, and we believed that it would have become greatly improved the user experience on out web application.

We have done something like Staff as well and were successfully able to implement staff user accounts and their logon, however due to time restriction we weren't able to implement the other requirements of Staff, but the Staff IDs we have created according to the assignment outline, will seamlessly function with the dedicated SQL table.

We have also managed to design, build, and run for Cordova iOS version and made sure it was functional and responsive. We were able to successfully showcase all screens and pages in Cordova. We have tested the code and ensured that it was working locally but haven't tested it with an emulator on 'Eris' server.

Overall, we found this assignment was quite challenging and felt that we could have done much better if we had added more depth to our web application features, but due to time constraints we weren't able to fully flesh them out. However, keeping in

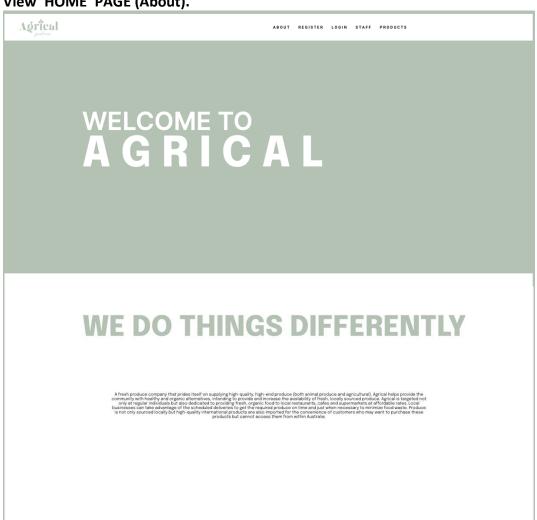
mind the limited amount of time and prior experience with the technical requirements for the assignment, we were able to produce a decent-quality application, though it may not completely meet some of the requirements.

#### **Page URL**

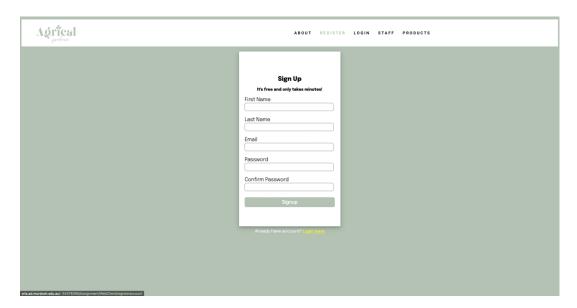
http://eris.ad.murdoch.edu.au/~33970651/Assignment2/WebClient/index.html

### <u>Test Documentation: (WEB – APPLICATION)</u>

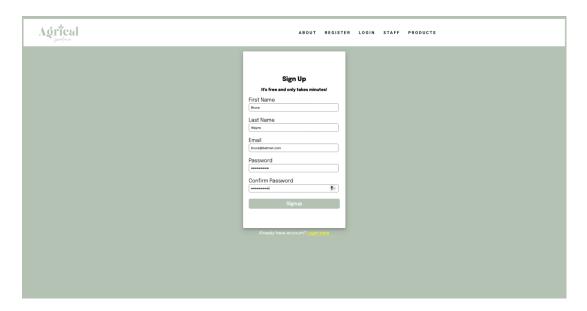
1. View 'HOME' PAGE (About).



#### 2. Registering an Account As Customer.



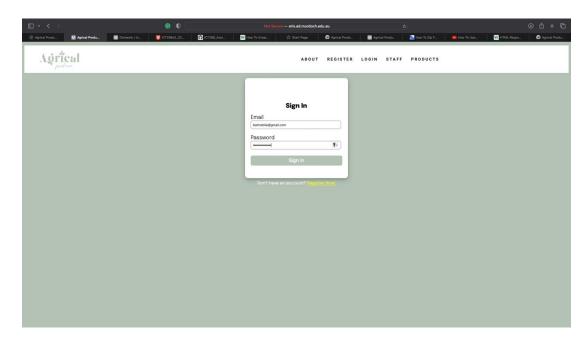
#### **Preview of Sample Data:**



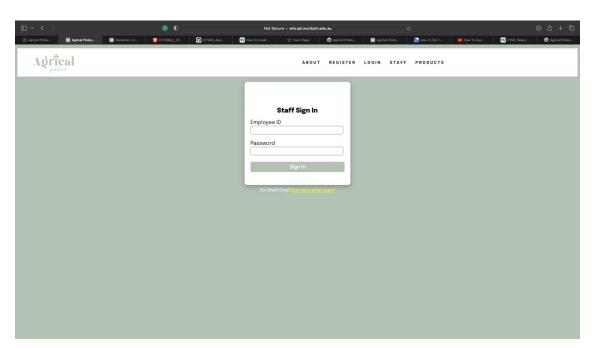
#### **CUSTOMER TABLE Preview:**



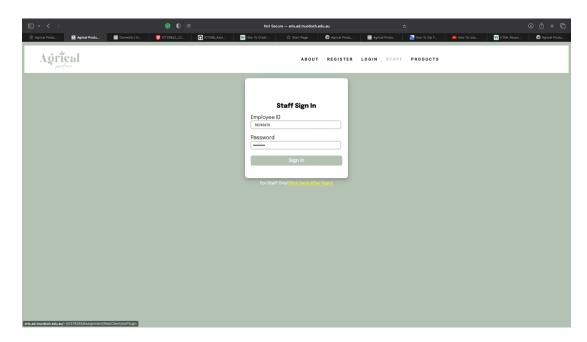
### 3. Logging in As a Customer.



# 4. Staff Sign-IN.



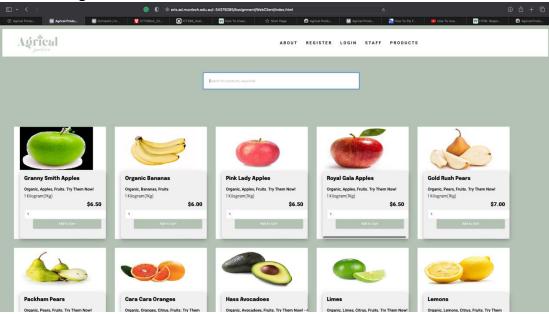
#### **Preview of Sample Data:**



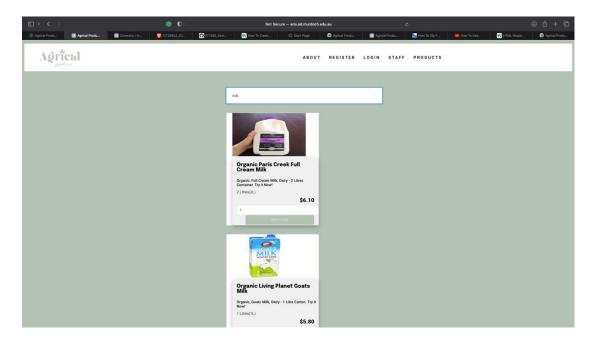
#### **Database Preview:**



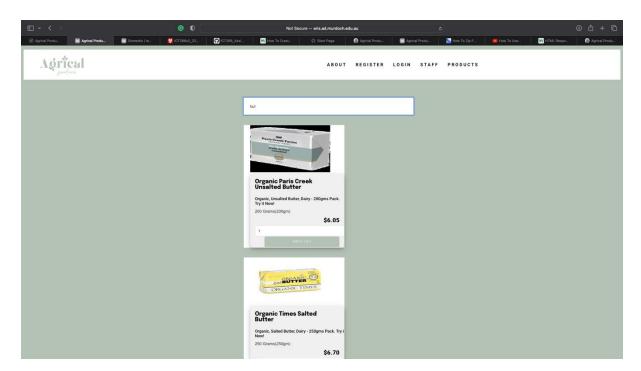
#### 5. Products Page.



#### Search Within products Page: (Complete Word: "milk")



Search Within Products Page: (Partial word: 'but') can work for even one letter phrases as well. (search only works against anything part of or equal to PRODUCT. Name)

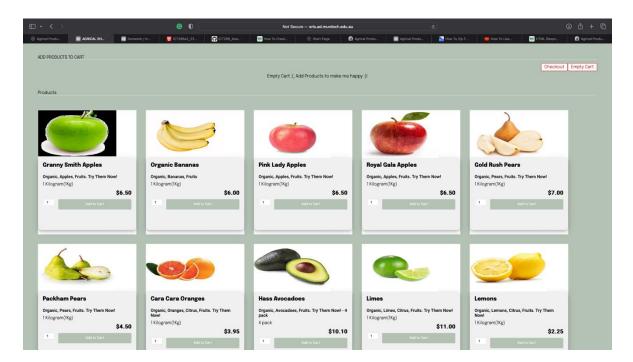


#### **Database Preview:**

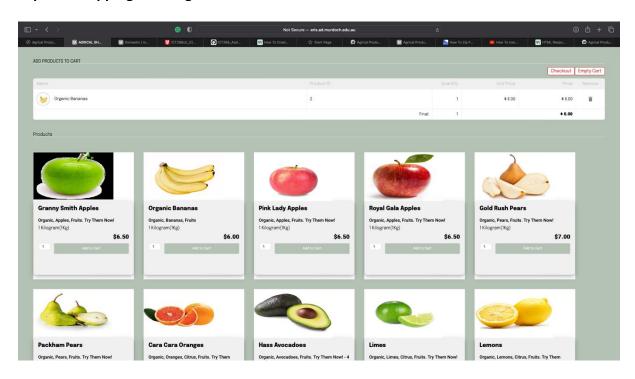


#### 6. Click 'Add to Cart' on Product.

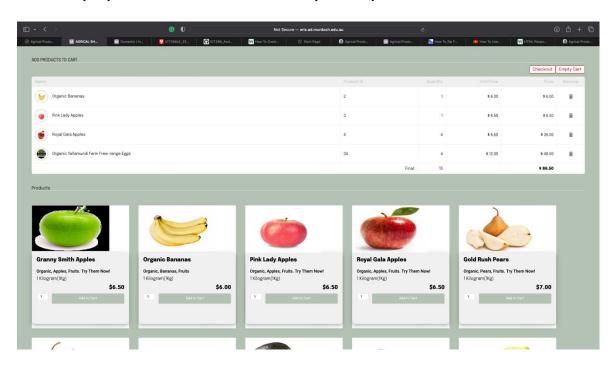
Once clicked on 'Add to Cart' Button in previous page, it will take you to this current page:



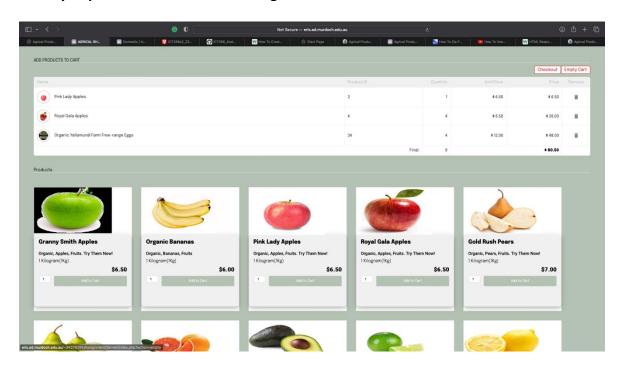
7. Explore Shopping Cart Page.



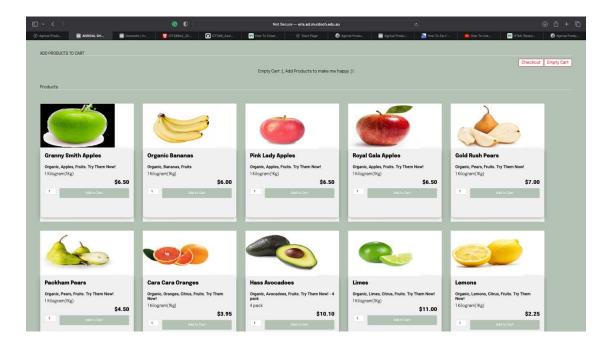
8. Add multiple products in order with their respective quantities.



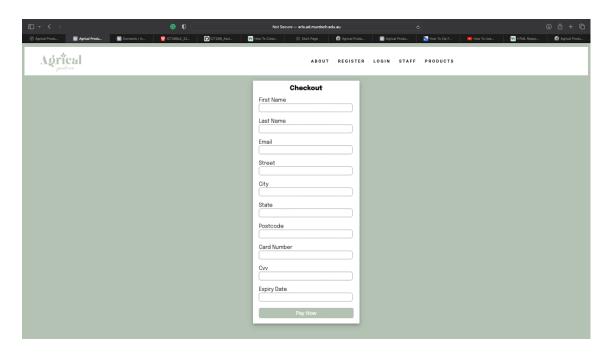
9. Remove Item ( Works for only one Item per session due to Unidentified error) when you press 'Delete' icon on the right.



10. Empty Cart by clicking on 'Empty Cart' Button.

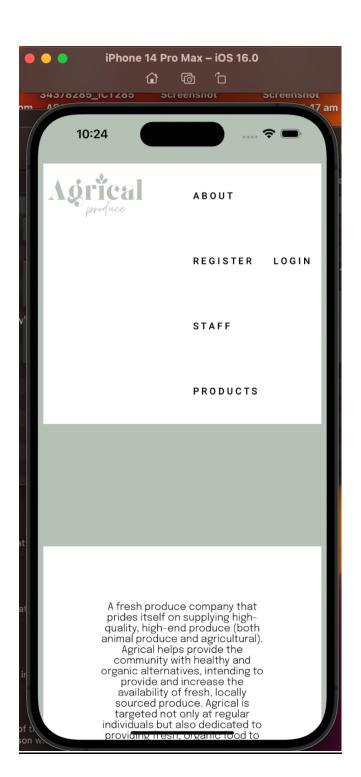


11. Checkout page by clicking on 'Checkout' Button. (Form will validate and work, but details aren't being transferred to TRANSACTION TABLE due to lack of time for us to work on.)

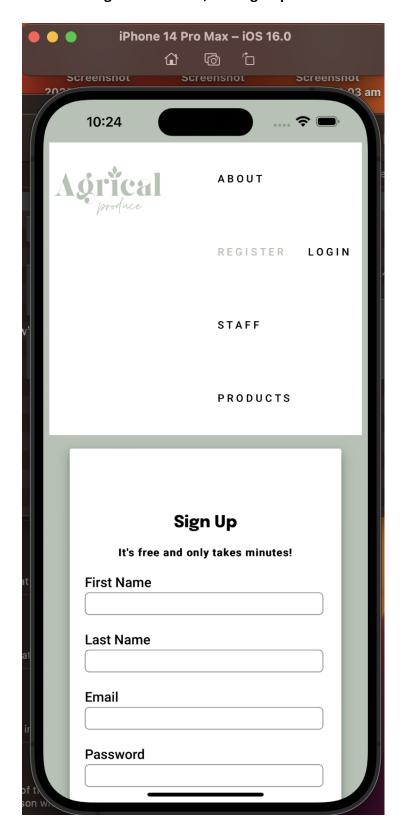


#### <u>Test Documentation: (CORDOVA – APPLICATION) Tested on IOS</u>

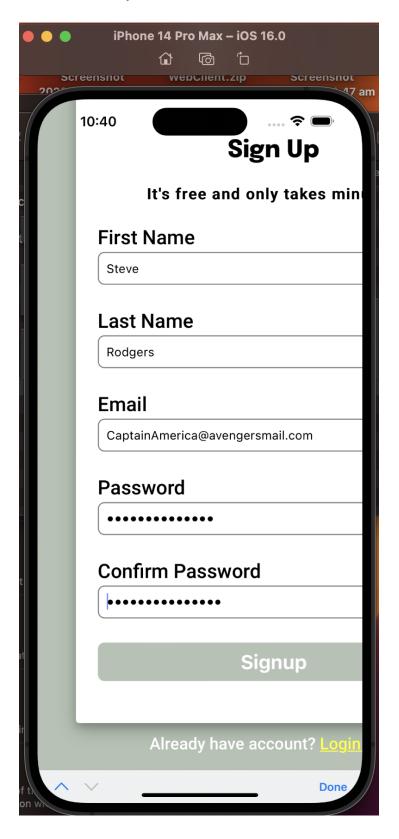
1. View 'HOME' PAGE (About).



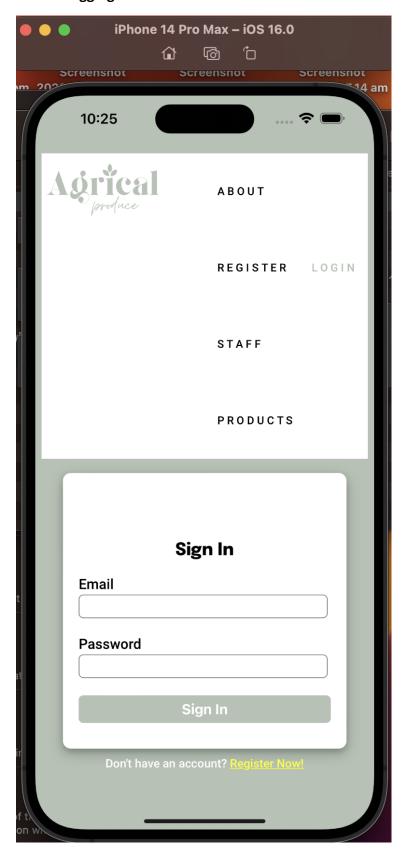
2. View 'Register' Account, and sign-up as customer.



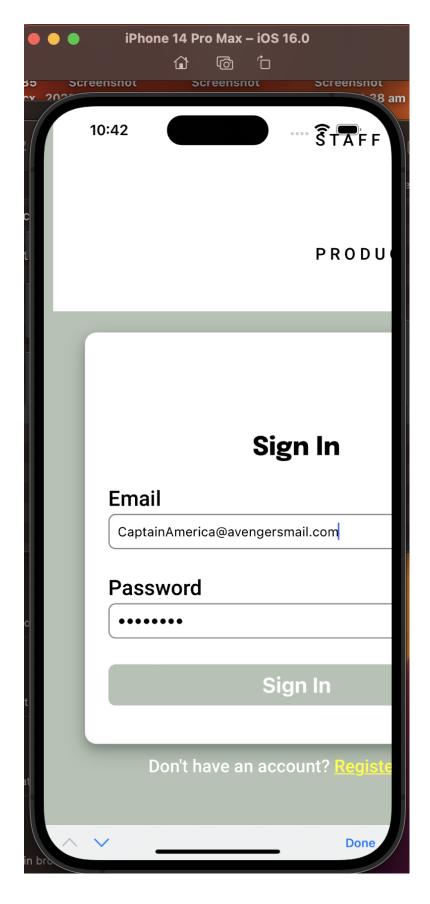
#### 3. Preview of Sample Data



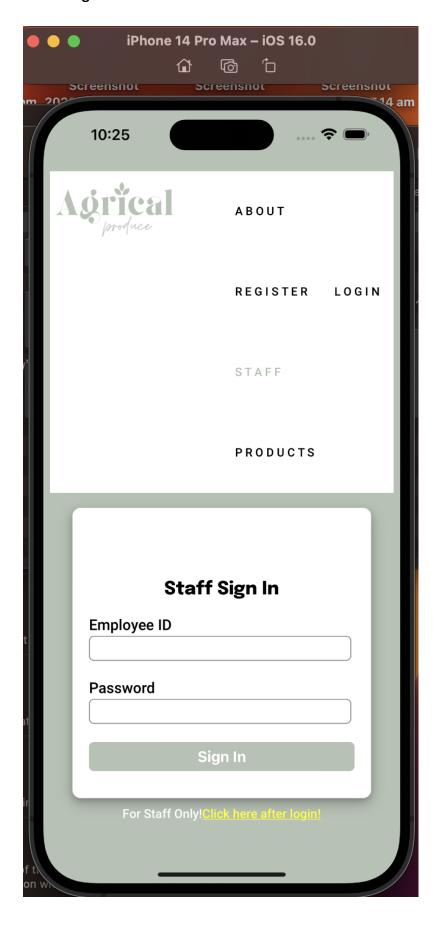
#### 4. Logging in As Customer



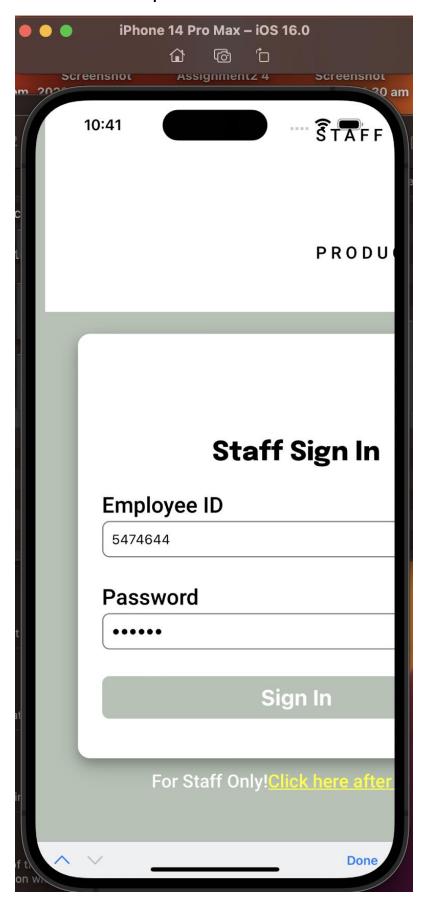
5. Preview of Sample LOGIN Customer Data.



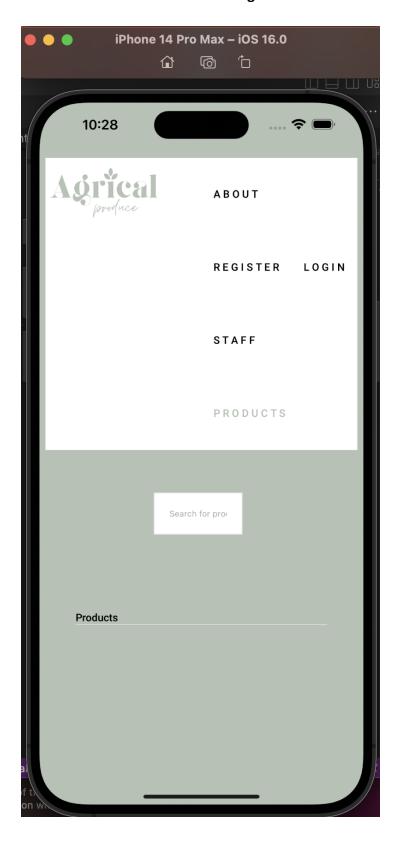
#### 6. STAFF Login screen.



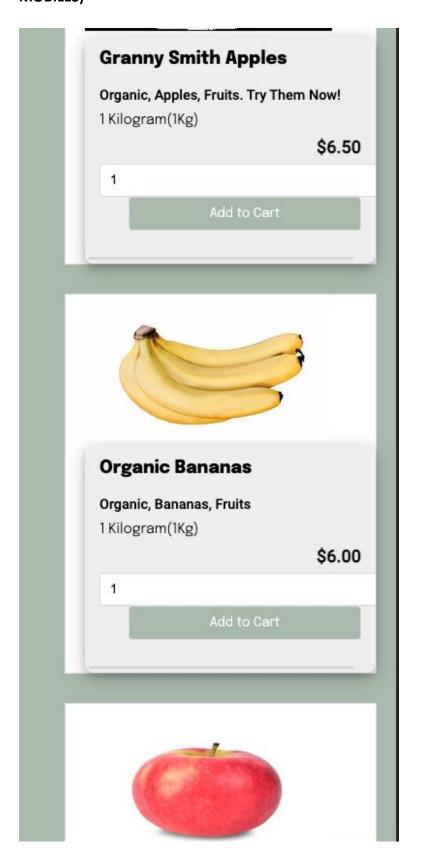
7. Preview of Staff Sample Data.



#### 8. Search Bar Preview in Products Page:



9. Browsing Products within Products Page. (NOT FROM CORDOVA IOS, FROM CHROME INSPECT JUST TO DISPLAY A PREVIEW OF THE CODE TAILORED TO SUIT MOBILES)



10. Browsing Products within Shopping Cart Page. (NOT FROM CORDOVA IOS, FROM CHROME INSPECT JUST TO DISPLAY PREVIEW OF THE CODE THAT IT IS TAILORED TO SUIT MOBILES)

