UWA Farm Ridgefield Visitor Induction and Management System

Overview:

Project Objective: To create a digital visitor induction and management system for UWA Farm Ridgefield to ensure the safety of visitors on site, capture their arrival and departure time in real-time, and provide useful data for annual reporting.

The key features of the visitor management system are:

- A fully functional web application made using the React framework with easy navigation to all key pages.
- A fully functional backend made in Firebase written in JavaScript to provide functionality to the web app.
- The ability for visitors to the farm to register an account that is associated with important information for the farm manager such as name, email, emergency contact etc. This information is stored in a Firebase database.
- The ability for visitors to use their accounts to log in and check into specific locations on the farm and the length of time they intended to spend there.
- The ability for visitors to see their own visitor log and see when they have visited the farm.
- The ability for the farm manager to send out notifications to all visitors in case of an emergency as well as observe the visitor log to see who is currently at the site.
- The ability for admins to create notifications, creating the opportunity to inform users about changes or news.

The website is hosted at the link below:
https://csb-rdxfbp.netlify.app/

Project Deliverables:

1. A visitor induction module with the following features
- Online induction process accessible via a web-based interface
- Completion of induction is mandatory for all visitors
- Visitors must provide their name, contact details, purpose of visit, and emergency contact details
- Visitors must read and accept the site safety rules
- Once completed, visitors will receive a QR code

2. A visitor management module with the following features
- Visitors will scan their QR code at arrival and departure points located at entry and exit points to the farm.

- The system will capture the visitor's arrival and departure time in real-time and send a notification to the Farm Manager's mobile app.
- The system will maintain a log of all visitor movements on the farm, including their name, contact details, purpose of visit, and emergency contact details.

3. A reporting module with the following features
- A downloadable data report with the following details: visitor's name, contact details, purpose of visit, arrival, and departure time.
- A summary report of the total number of visitors on the farm per day, week, month, and year.

Project Setup

Installation

To install and run the project on your own local host, it is required to install react.js and node.js.

Node.js

To install the package node.js please follow instructions on the following link:

Download Node.js

React

The component can be installed on your machine after successfully installing node.js, and pasting the following into terminal:

```
sudo npm install -g create-react-app
```

After the installation of node.js and react.js we can start building the react program.

In the project directory, you can run:

```
npm start
```

Runs the app in the development mode.
Open http://localhost:3000 to view it in your browser.
The page will reload when you make changes.
You may also see any lint errors in the console.

npm test

Launches the test runner in the interactive watch mode.
See the section about [running tests](#) for more information.

npm run build

The application is constructed for production and saved in the designated build directory. React is bundled in the production mode, and the build is optimized to ensure optimal performance. Furthermore, the build is minimized, and the filenames are appended with hashes. As a result, the application is fully prepared for deployment.

See the section about [deployment](#) for more information.

npm run eject

Note: this is a one-way operation. Once you eject, you can't go back!

Firebase Cloud Firestore

The project's backend system was developed utilizing Firebase Cloud Firestore database, which serves as a Backend-as-a-Service (BaaS) provider, in combination with node.js. The database was constructed using Firebase/Firestore technology. As the project was built using React.js, it may be necessary to install React in some areas. Instructions for installing React can be found on the main project page.

[Get started with Cloud Firestore | Firebase](#)

Requires import of firebase.js which will contain the SDK (config file)
1. install node.js https://nodejs.dev/en/download/
2. Create a new project on firebase console
3. Obtain the firebase project config file from the console.
4. install Firebase on your project using npm:

```
npm install firebase
```

5. Install Firebase CLI:

```
npm install -g firebase-tools
```

6. Create a firebase.js file for Create Read Update Delete operations and paste config in the file.
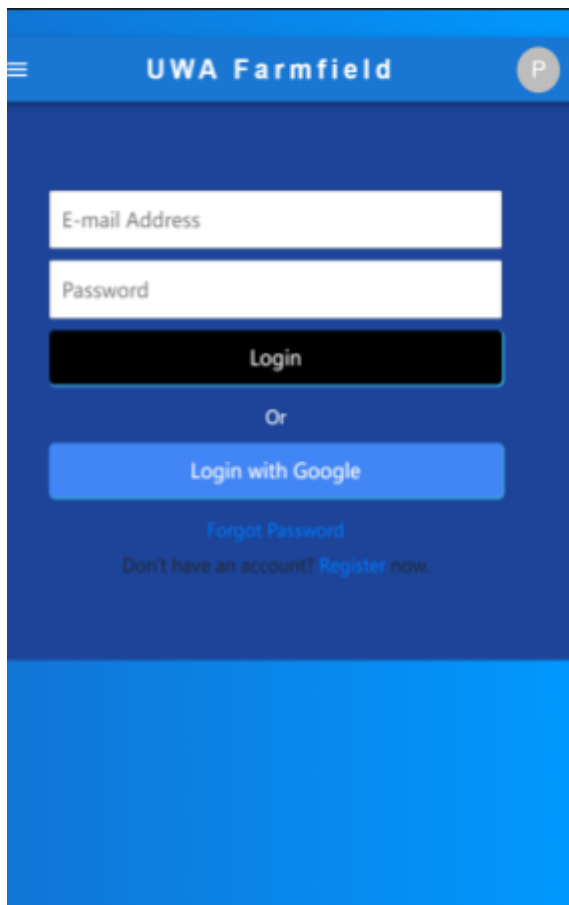
User Guide

Registration

1. To register for an account, navigate to the "Register" section of the login web page.
2. From there you will be forwarded to the registration page and be required to fill in details.
3. Fill in the required fields, such as your name, special identification number provided by the university (student, staff id etc.), email address, phone number, role, and a secure password.
4. To access Ridgefield farm, it is required that every visitor has read and accepted the terms of conditions to entry and farm induction.
5. Please read the farm induction and terms and conditions upon registration.
6. Read the privacy terms and policy carefully before accepting. Make sure you understand what information is being collected, how it will be used, and who it will be shared with.
7. If you have any questions or concerns about the privacy terms, contact the webpage's support team before accepting.
8. If you do not agree with the privacy terms, you may choose not to register for an account.
9. If you accept the privacy terms, you are giving the webpage permission to collect and use your personal information as outlined in the policy.
10. Be aware that you have the right to withdraw your consent at any time by contacting the webpage's support team.
11. If the privacy terms are updated, you will be notified and given the option to accept or decline the new terms.
12. Keep in mind that some features or services may be unavailable if you choose not to accept the privacy terms.
13. Once you have filled in all the required fields, click the "Register" or "Create Account" button.
14. If there are any errors or missing fields, the webpage will notify you. Review the information and try again.

Login and authentication

1. From this screen, you can login using the credentials you have used for the registration.
2. Enter the email address and password associated with your account.
3. If you have forgotten your password, click on "Forgot Password" and you will be redirected to a page where will you will be able to change your password after verification.
4. If hosted on an authorized domain in the future, it is possible to login using your google mail credentials.
5. Once you have entered your login information and any required verification steps, click the "Login" button.
6. If there are any errors or incorrect login information, the webpage will notify you. Review the information and try again.

Remember to keep your login information secure and never share it with others. If you suspect your account has been compromised, contact the webpage's support team immediately.

User Dashboard:

- Read the terms and conditions of using the user dashboard carefully before accepting. Make sure you understand what actions are allowed, what actions are prohibited, and what happens in case of violation.
- If you have any questions or concerns about the user dashboard terms and conditions, contact the webpage's support team before accepting.
- If you do not agree with the user dashboard terms and conditions, you may choose not to use the dashboard.
- If you accept the terms and conditions, you are acknowledging your responsibility to use the dashboard ethically and in compliance with the rules.
- Be aware that the webpage may monitor user activity on the dashboard to ensure compliance with the terms and conditions.
- If the user dashboard terms and conditions are updated, you will be notified and given the option to accept or decline the new terms.

The user dashboard consists of 4 cards:

1. **Basic user information card**
   - The user's email address used to login
   - Their unique identifier
   - Their special identifier provided by the university
   - Their current check in status (True or False)
   - Their check-in or check-out time

2. **Previous visits card**
   - This card stores the previous check-ins made by the user
   - This card is also used to check-out a visit if not done.

3. **Announcements tab**
   - Users can see announcements made from the admin in this tab

4. **Contact tab**
   - Users can contact important personnel from this tab in case of an emergency

Check in

- In this page you can choose the locations that you want to visit in the first dropdown. In this dropdown you can scroll down or type the name of the location to find it.

- If you're not sure where you're going to visit just click on the "Unsure" checkbox below the dropdown.

- Next dropdowns are the reason for your visit and estimated duration of your visit. Please put your estimation duration of visit in hours.

- Last checkbox is for visitors who want to stay overnight. Please check this and make sure that you've booked your stay.

- At the end click on the check-in button to get directed to the next page. Upon checking the button the user will be able to preview possible accommodations arrangements at the farm

Check Out

Within the user dashboard, users have the ability to review previous visits by accessing the "previous visits" card. In order to view the details of a particular visit, users can simply press the "check-out" button associated with the visit in question. Once a successful check-out has been made, the corresponding date and time will be displayed in the check-out cell of the user dashboard.

It is important to note that if a user has not yet checked out from a visit, the check-out cell will only display the check-out button without any associated date or time information. However, once the user has successfully checked out, the check-out time will be automatically added to the cell above the check-out button for future reference.

By providing this functionality, users are able to easily keep track of their previous visits and ensure that all check-outs have been completed in a timely manner.

Previous visits

Locations	Check-In Time	Duration of Stay	Reason for visit	Check Out Time
Avery's Shearing ShedGeneral Purpose ShedFarm Manager's House	10-20-2022 06:33:35	2	Education	Check Out
Avery's Shearing ShedGeneral Purpose	10-19-2022 23:38:40	3	TESTING	10-20-2022 04:53:04 Check Out

Log out

- **Click the "Logout" button and you will be safely logged out of the account.**

Navigation

- **When the visitor has logged in successfully, click on the top left corner and the navigation will be displayed**
- **Users with admin role will be displayed an additional page called "Admin" where they can:**
    - **See the user database**
    - **See the visitor log**
    - **Make announcements**
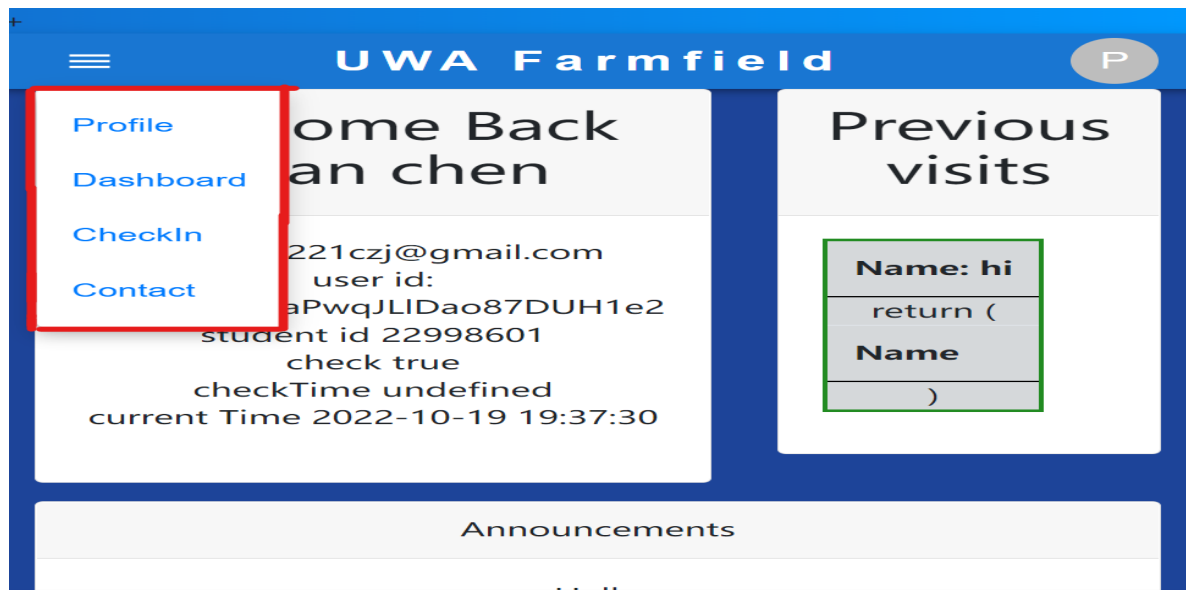
Floating announcement

An additional feature we have implemented is the floating announcements which pops up after a certain period of time passes reminding the user of important information. When clicked it will redirect you to the UWA Farm Ridgefield website.

Check-In

Destination

Select

Unsure ☐

Reason for visit

Reason for visit

Estimated duration of visit

Put your number in hou

Please note mobile service can be intermittent and unreliable at the farm ✕

If you do not have service, move to another area to be in range. You must have access to a Telstra m...

≡ **U W A   F a r m f i e l d** Ⓟ

Welcome Back Logan C

logan@ok.com
user id: xESHRQdkmfRXBk65V1M80nSH45E2
student id 224555444
check false
checkTime undefined
current Time 10-20-2022 07:24:57

Previous visits

Please follow the guidelines by UWA ✕

All users and visitors must read and understand the information below before visiting UWA Farm Ridge...

eck O

In Time | of Stay | for Visit | Time

Admin Panel/Backend

Making announcements:

Another additional feature we implemented would be the announcement board system. Admins can make announcements for users to see on the admin page. The announcements being made will be displayed in the user dashboard.

User/Admin privileges:

In the user database displayed in the admin page, it is possible to grant users admin privileges. In addition it is also possible to change their roles by editing the field in the role cell.

User Database

| Name	Student ID	E-mail	Phone Number	Role	Provider	Make Admin	Delete User
Logan C	224555444	logan@ok.com	041109367	Admin	local	Grant	Delete
Matin Nourdel	22844196	matinnourdel98@gmail.com	045555555	Student	local	Grant	Delete
zijian chen	22998601	2546549221czj@gmail.com	123456		local	Grant	Delete
Logan C				Admin		Grant	Delete
Tuguldur Gantumur		gtrtuugii@kindle.com			local	Grant	Delete

Deleting accounts:

An additional feature we have included is the deletion of users which can be activated from the user database table in the admin page.
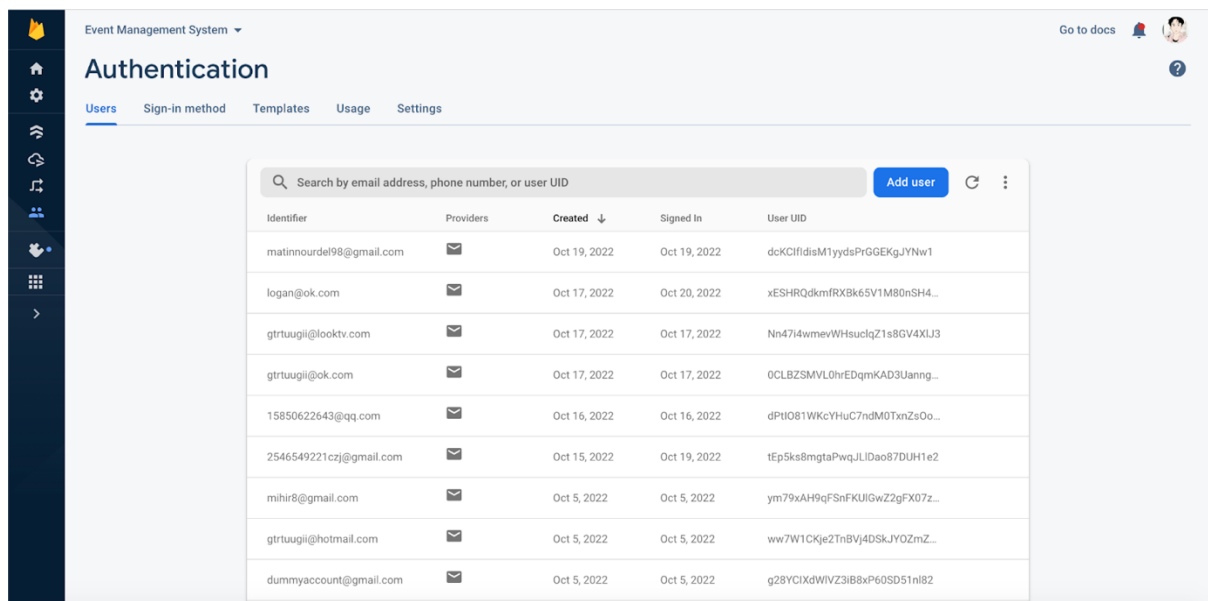
User Database

Name	Student ID	E-mail	Phone Number	Role	Provider	Make Admin	Delete User
Logan C	224555444	logan@ok.com	041109367	Admin	local	Grant	Delete
Matin Nourdel	22844196	matinnourdel98@gmail.com	045555555	Student	local	Grant	Delete
zijian chen	22998601	2546549221czj@gmail.com	123456		local	Grant	Delete
Logan C				Admin		Grant	Delete
Tuguldur Gantumur		gtrtuugii@kindle.com			local	Grant	Delete

Overview of user database in FireStore:
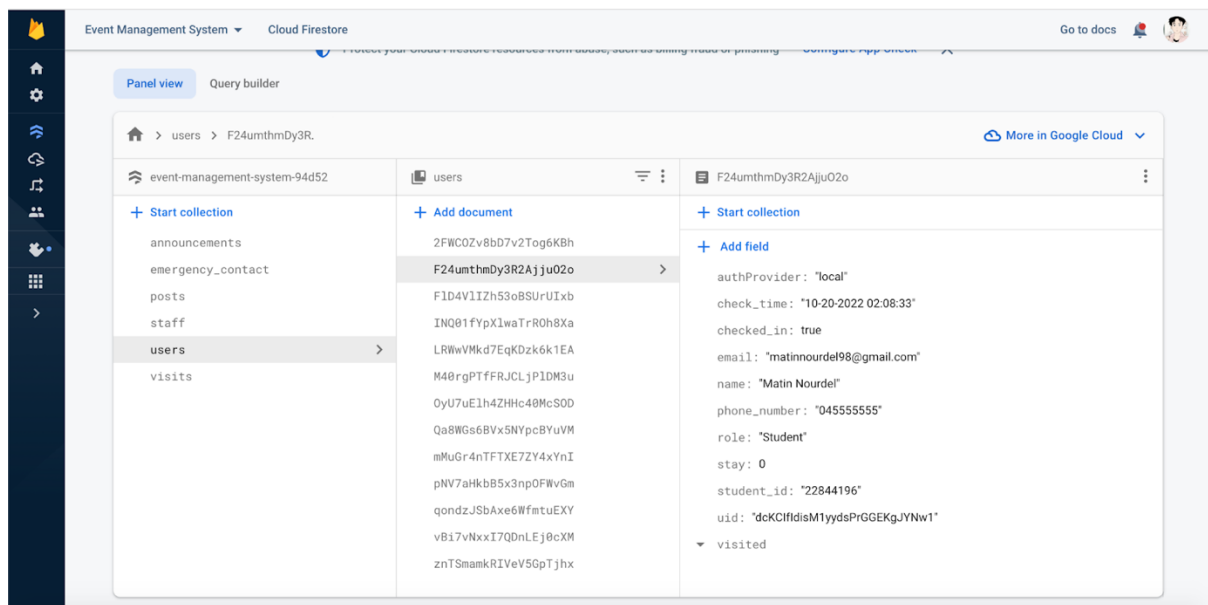
Upon user registration, the information visible is added to the collection 'users' and a uid is generated for the users which we have used to join queries. The user email and user UID is also stored in authentication and user for login purposes.

This database is mainly used to store user, visit, announcement, emergency contact information.

Sending Notifications

- The manager can use the firebase cloud messaging function to send the message that you want to the students who have successfully logged in.
- First,click on "Send your first message" to send notifications.
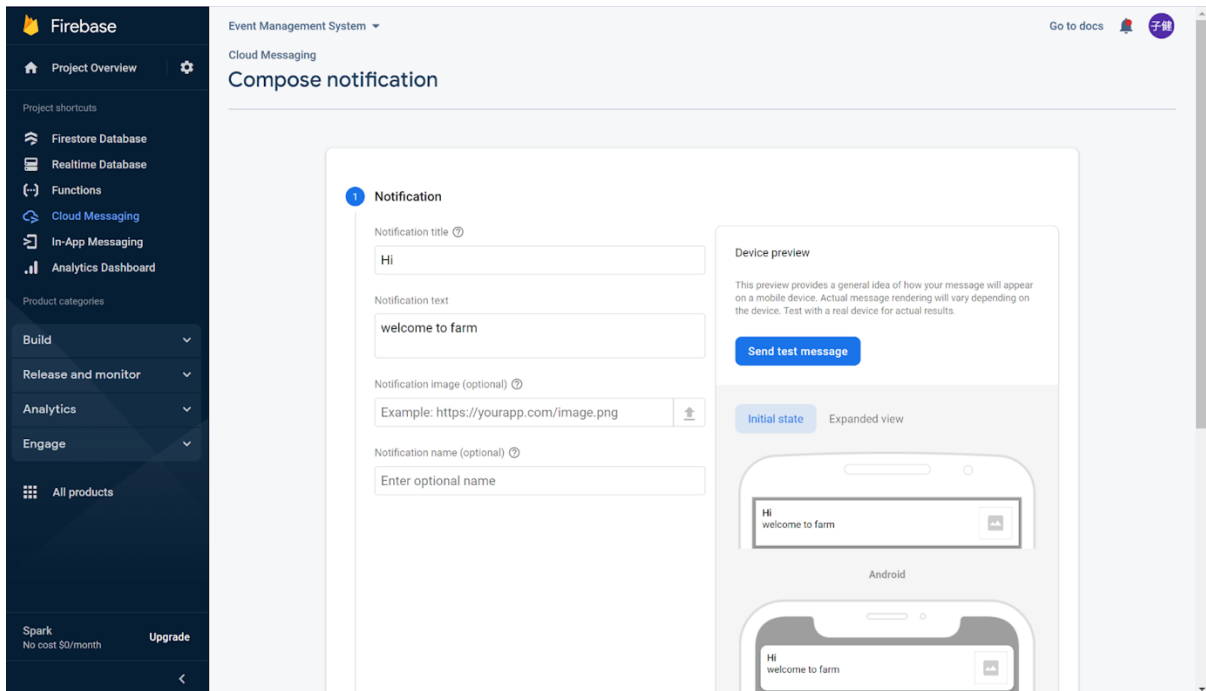
- Here, the manager can set the title and content of the message she/he wants to send.

- Choose the device and send.

- The visitor will receive the notification.

Project Resources:

- Project Manager
- Business Analyst
- UX/UI Designer
- Software Developer
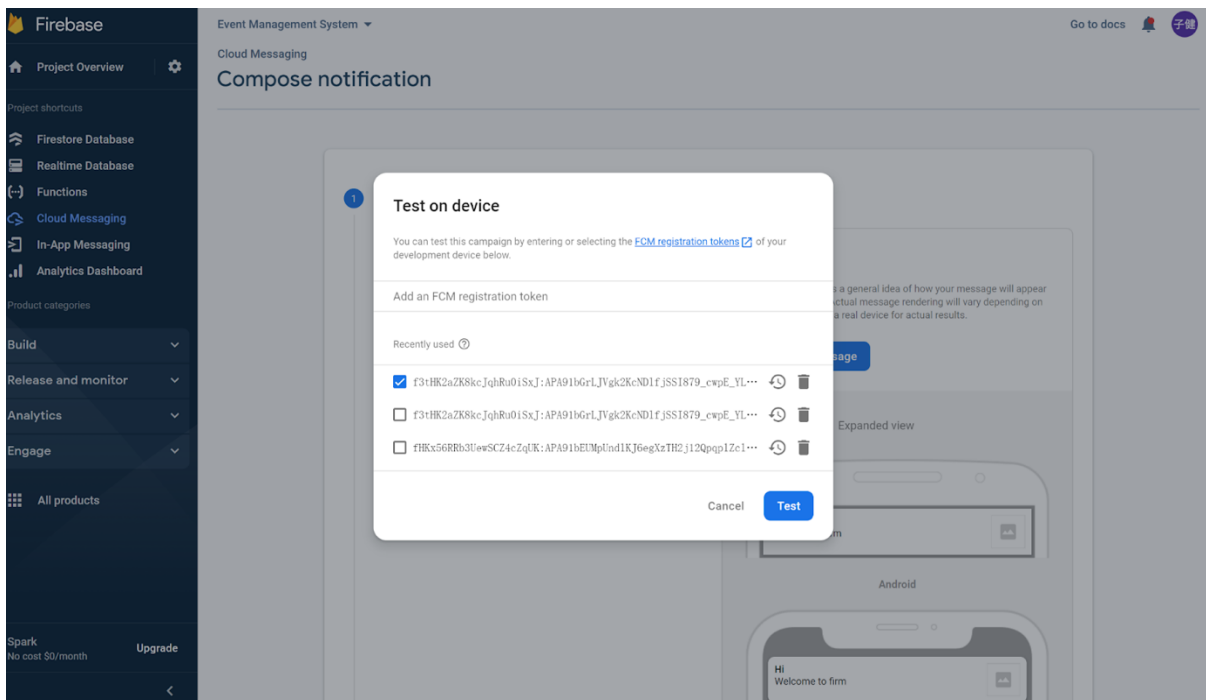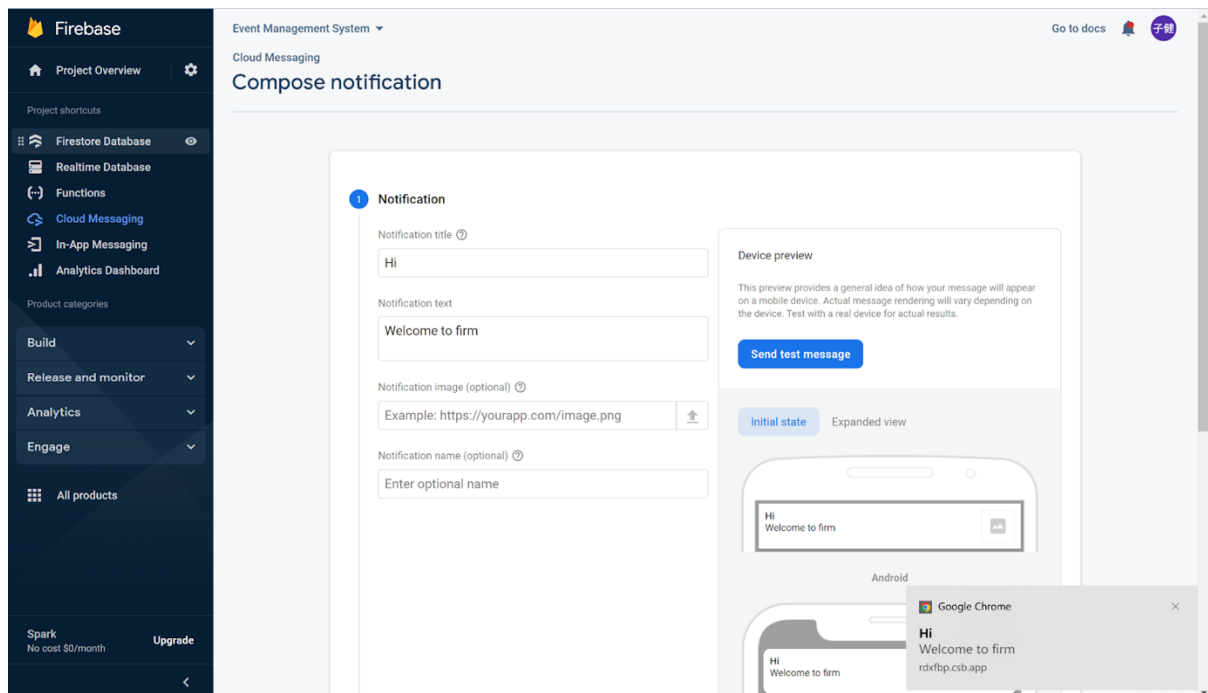- Quality Assurance Specialist
- Farm Manager (for testing and user acceptance)
- Project Mentor (assigned by the university)

Project Conclusion

Expected Outcome of the unit CITS3200 Professional Computing:

Expected Outcomes:
The project is expected to achieve several outcomes that are critical for the development of computing professionals. These outcomes include:

1. Developing awareness of the ethical and social responsibilities of computing professionals.
2. Providing experience in using professional practices in a teamwork setting.
3. Offering a "programming in the large" experience as far as practical.
4. Allowing for the integration of and reflection on previous computer science knowledge.
5. Developing student capability, confidence, and maturity.
6. Modeling industrial practice regarding commercial software development and effective client relationships.

The expected outcomes of the project are aligned with the goals of developing well-rounded computing professionals. Through the project, students will gain valuable experience in working collaboratively on complex tasks, utilizing professional practices and developing a strong sense of responsibility towards ethical and social issues.

Furthermore, students will have an opportunity to integrate and reflect on their previous computer science knowledge, which will enhance their skills and knowledge in the field. This project will provide students with practical experience in "programming in the large," which will further prepare them for real-world scenarios.

The project will also enable students to develop important soft skills such as effective communication, problem-solving, and teamwork, which are highly valued in the industry. Finally, the project will model industrial practice regarding commercial software development and effective client relationships, which will provide students with a valuable insight into the expectations of the computing profession.

Overall, the expected outcomes of the project are highly relevant and important for the development of future computing professionals. The project team is committed to ensuring that these outcomes are achieved to the highest standard.

Conclusion

In conclusion, the project has been a success and has met its objectives. The project team has worked diligently to achieve the desired outcomes within the given time frame and budget. The project has been completed to a high standard and has met the client's expectations.

Throughout the project, the team has encountered challenges and obstacles, but they have worked collaboratively to overcome these issues and find appropriate solutions. Effective communication, planning, and teamwork have been critical to the success of this project.

The project has provided valuable insights and learning opportunities for the team, enabling them to further develop their skills and expertise. It has also provided a significant benefit to the client, meeting their business objectives and delivering tangible results.

Overall, the project has been a positive experience for all stakeholders involved, and the team is proud of the outcome. They look forward to building on this success in future projects and continuing to deliver high-quality results.