Deliverable #2
CENG-322

Secure Home Automation (Software)
By *Future Home* *(Team)

Development Team:

Zachary Learoyd (LRDZ0002)

Akash Muhundhan (N01420118)

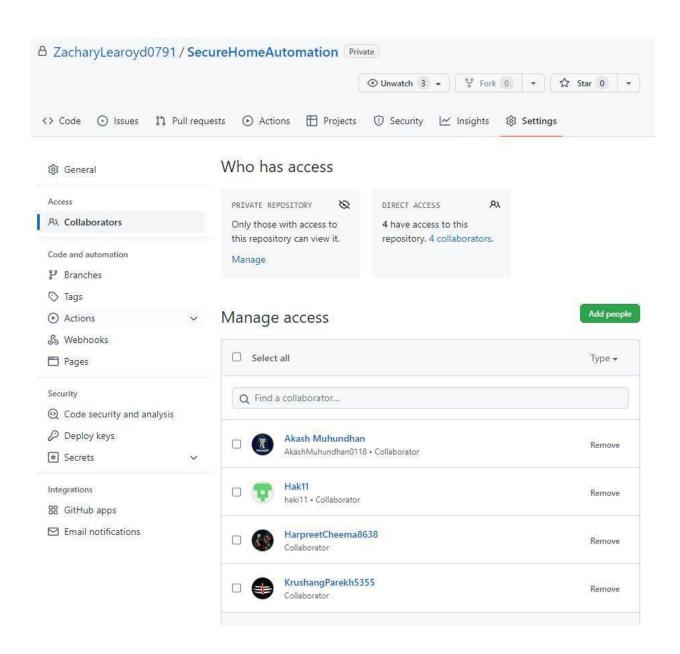Harpreet Cheema (N01438638)

Krushang Parekh (N01415355)

Table of Contents

Peer Review

Name	ID	Signature	Effort
Zachary Learoyd	LRDZ0002	ZL	Akash Muhundhan=100% Harpreet Cheema=100% Krushang Parekh=100%
Akash Muhundhan	N01420118	AM	Zachary Learoyd=100% Harpreet Cheema=100% Krushang Parekh=100%
Harpreet Cheema	N01438638	HC	Krushang Parekh=100% Zachary Learoyd=100% Akash Muhundhan=100%
Krushang Parekh	N01415355	KP	Zachary Learoyd=100% Harpreet Cheema = 100% Askash Muhundhan=100%

GitHub Invite

Project Scope & Goals

Project Scope & Goal:

This project aims to develop a system with various functions pertaining to the remote control of home automotive functions. The goal of developing such a system will be achieved by developing an app that allows the user to connect to and monitor these sensor controls from remote areas. Users will benefit from being granted access to all of these controls important in managing the functions and security of your home from a single app.

Project Deliverables:

- Develop an android based app to read from and control sensors (RFID, temperature, ultrasonic and accelerometer sensor)
- Create an easy to read and use UI for controlling/automating sensors
- Controls should include scheduling tasks/routines, turning systems or devices on/off, registering RFID enabled keys, adjusting min/max temps for in-home temperature control
- Setup a cloud based server for storing user data and preferences; including creating a way for users to sign up with their email and a password to save information on the cloud server
- Develop In-app account management
- Create user-personalized in-app options for changing the app to "dark mode," as well as changing the font for easier readability for those with slightly impared vision
- Create custom image assets for various parts of the app, including the app icon, splash screen, sensor controls and more

Project Governance:

Project deliverables will be brought to the group and project manager first for approval. Project owner has final say on what additional app requirements are needed for each bi-weekly deliverable submission. Any feedback will be taken note, discussed during daily briefings and upon consideration/approval, the task (depending on the size) will be added to the backlog with a planned implementation on the critical path.
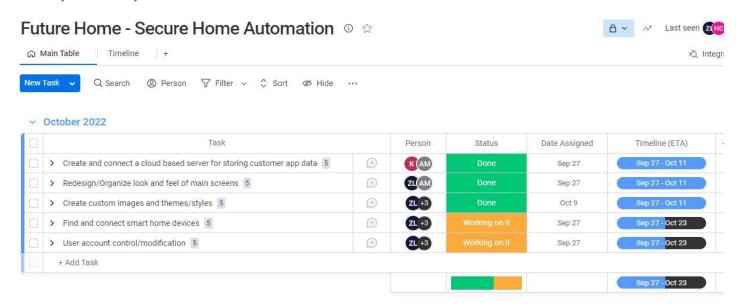
Project Constraints:

- Budget, stock and delivery times
- Scheduling and potential lack of development time for students enrolled full-time
- Potential personal limitations, such as poor physical or mental health arising unexpectedly
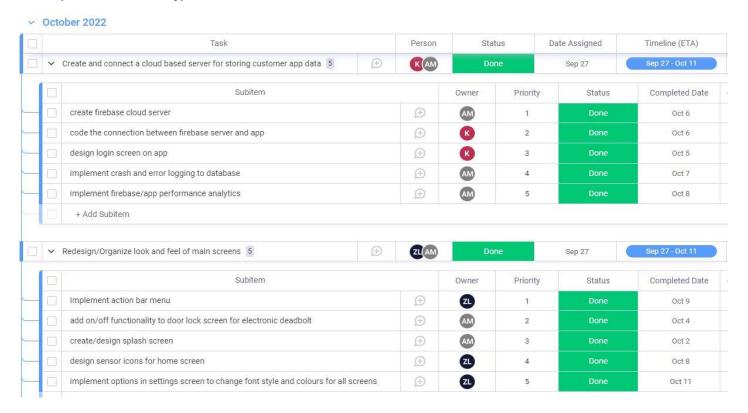
Project Stories & Tasks

DoD: completed functionality, tested and works without errors/crashes. Feedback considered and any changes implemented. Approved by other members that nothing more is to be completed for said task (other than UI design).

Stories (Overview):

Future Home - Secure Home Automation

Main Table | Timeline | +

New Task | Search | Person | Filter | Sort | Hide | ...

October 2022

	Task		Person	Status	Date Assigned	Timeline (ETA)
	> Create and connect a cloud based server for storing customer app data 5		K AM	Done	Sep 27	Sep 27 - Oct 11
	> Redesign/Organize look and feel of main screens 5		ZL AM	Done	Sep 27	Sep 27 - Oct 11
	> Create custom images and themes/styles 5		ZL +3	Done	Oct 9	Sep 27 - Oct 11
	> Find and connect smart home devices 5		ZL +3	Working on it	Sep 27	Sep 27 - Oct 23
	> User account control/modification 5		ZL +3	Working on it	Sep 27	Sep 27 - Oct 23
	+ Add Task					
						Sep 27 - Oct 23

Tasks (1-5 for each story):

October 2022

	Task		Person	Status	Date Assigned	Timeline (ETA)
	⌄ Create and connect a cloud based server for storing customer app data 5		K AM	Done	Sep 27	Sep 27 - Oct 11

	Subitem		Owner	Priority	Status	Completed Date
	create firebase cloud server		AM	1	Done	Oct 6
	code the connection between firebase server and app		K	2	Done	Oct 6
	design login screen on app		K	3	Done	Oct 5
	implement crash and error logging to database		AM	4	Done	Oct 7
	implement firebase/app performance analytics		AM	5	Done	Oct 8
	+ Add Subitem					

	Task		Person	Status	Date Assigned	Timeline (ETA)
	⌄ Redesign/Organize look and feel of main screens 5		ZL AM	Done	Sep 27	Sep 27 - Oct 11

	Subitem		Owner	Priority	Status	Completed Date
	Implement action bar menu		ZL	1	Done	Oct 9
	add on/off functionality to door lock screen for electronic deadbolt		AM	2	Done	Oct 4
	create/design splash screen		AM	3	Done	Oct 2
	design sensor icons for home screen		ZL	4	Done	Oct 8
	implement options in settings screen to change font style and colours for all screens		ZL	5	Done	Oct 11

Project Stories & Tasks...cont'd

October 2022

Task		Person	Status	Date Assigned	Timeline (ETA)
Create custom images and themes/styles 5	⊕	ZL +3	Done	Oct 9	Sep 27 - Oct 11

Subitem		Owner	Priority	Status	Completed Date
Create custom app icon and splash screen photo	⊕	ZL	1	Done	Oct 9
Create custom gradient styles to be used with login and various other objects	⊕	AM	2	Done	Oct 9
Create custom style sheet for displaying text on home screen	⊕	AM	3	Done	Oct 9
Create custom dark mode theme for screens	⊕	ZL	4	Done	Oct 9
Create custom icons for home screen sensor buttons	⊕	ZL	5	Done	Oct 9
+ Add Subitem					

Task		Person	Status	Date Assigned	Timeline (ETA)
Find and connect smart home devices 5	💬	ZL +3	Working on it	Sep 27	Sep 27 - Oct 23

Subitem		Owner	Priority	Status	Completed Date
code functionality request for user permissions (bluetooth, wifi)	⊕	HC	1	Done	Oct 11
display snackbar for successful/unsuccessful permissions request	⊕	HC	2	Done	Oct 11
refresh home screen (update connected sensors)	⊕	ZL	3	Working on it	
add/remove connected devices	⊕	ZL +3	4	Working on it	
display connected devices	⊕	ZL +3	5	Working on it	

Task		Person	Status	Date Assigned	Timeline (ETA)
User account control/modification 5	⊕	ZL +3	Working on it	Sep 27	Sep 27 - Oct 23

Subitem		Owner	Priority	Status	Completed Date
option to log out of the account	⊕	K	1	Done	Oct 6
view created user account (email and name)	⊕	K +3	2	Working on it	
change email/password for account	⊕	K +3	3	Working on it	
save account specific settings for app (font choice, colours)	⊕	ZL +3	4	Working on it	
delete account from server	⊕	K +3	5	Working on it	

Business Model Canvas

Cost centers	Value propositions	Profit centers

Value propositions
What problems do you have and how do you solve them?

A

Key partners
Who should be involved as you produce and deliver your solution?

1. Technician
2. Financial Partners
3. Software dev
4. Payment providers
5. Insurances companies

Key activities
What do you need to do to produce, market, and deliver your solution?

Keep prices forMaintain a platform
Expand the products (like more automation devices)
collect and analyze data
Provide customer support

Key resources
What do you need to have in order to produce, market, and deliver your solution?

Developers and staff for apps and maintance

Lower Price
Simple to use
Secure
Customizeable to user liking
Cashless Payements

Customer relationships
How do you talk to your market about your solution? How do you acquire customers?

Customer Support
Customer Protection
Customer Trust

Customer segments
Who needs your solution? How many people need your solution right now or will eventually need it?

People Looking for safety and protection
People that wants to make life more convenient and secure
People that likes to spend less on household bills.

Channels
How do you deliver your solution to customers and where can they find it?

Word of mouth
Adverts
Social Media

Cost structures

Marketing
Advertisement
Maintances
Platform developement and maintance

Revenue streams

Product
Monthly Payment

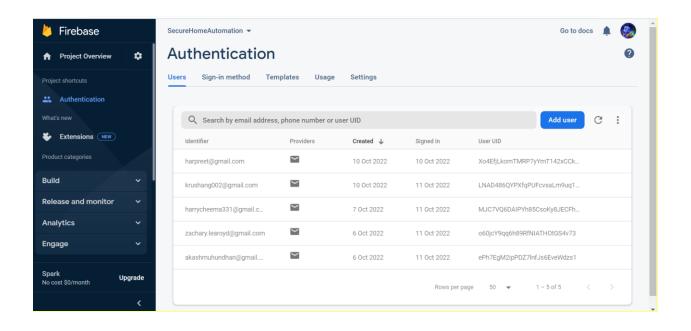# Cloud Database

Database used:

Firebase

Details:

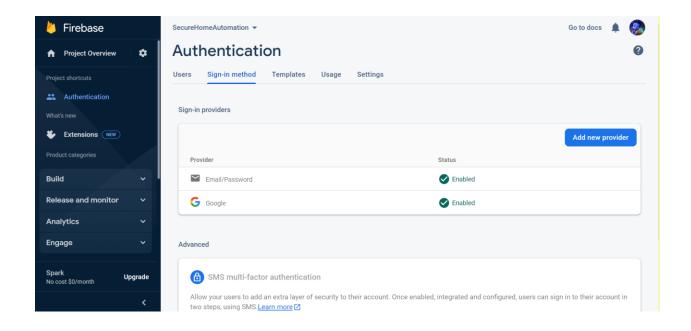Our four group members are the owners of the database.

We are using Firebase Authentication Database for login process, email verification, google login (will implement on future deliverables).
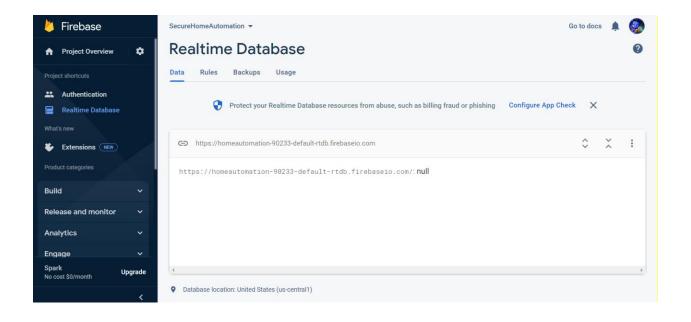
Cloud Database…cont'd

We are using Firebase Authentication Database for login process, email verification (for this deliverable), and for future deliverable we will continue with firebase Authentication to sign in with google, facebook and tweeter login.

We will also be using firebase real-time database for account Settings like Profile image,share data, change - name, email, password and more…

Weekly/Daily Progress

Features added since first deliverable:

- Settings screen with 4 options currently to choose from (2 are functional), bold app text, dark mode, lock portrait, enable fingerprint login
- Splash screen with custom image
- Sign-up/login screen when first opening the app
- Custom images for sensor icons and app icon
- Menu (action bar) with options to add new devices, modify account, refresh the sensor readings and access app settings
- Runtime permissions for bluetooth access
- Added an additional screen (WindowFragment) to the bottom navigation menu
- Cloud database (firebase) added to store login information, user preferences, track app analytics (any crashes and performance info)
- Miscellaneous tasks completed include new UI design for home screen, placeholder UI designs for all other screens (to be completed in future updates)
- Font, colour and image formatting across all screens
- Sensors on the home screen (quick access) are clickable, taking the user to the respective configuration page. Turning on/off toggle switch changes colour around sensor buttons to show active status

Daily stand-ups: