TeamSafeSmartHome_SafeSmartHome_Deliverable_4

Team Safe Smart Home

Safe Smart Home

Jacob Stephens_n01100888

Veera Gudla_n01218714

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Brief Project Description

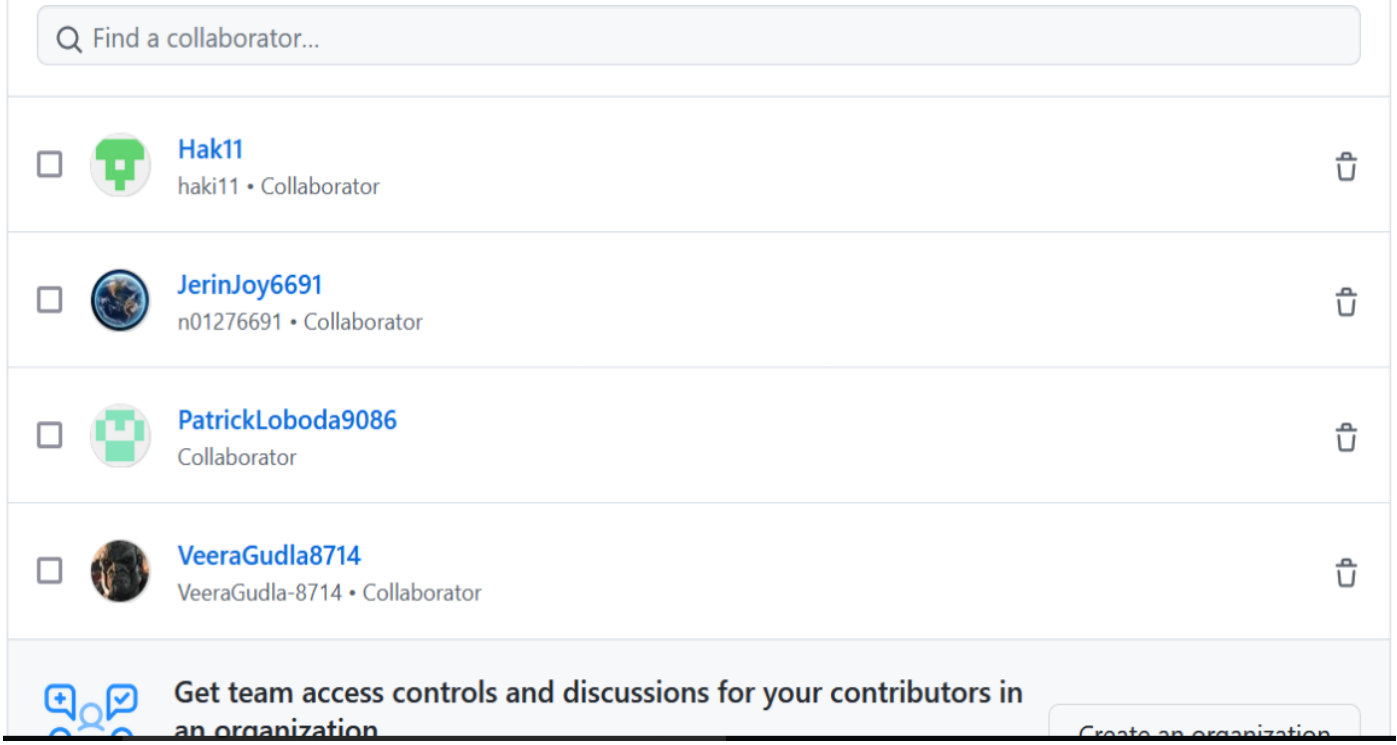
The application is an android Safe Smart Home app, that will be used to help people cohabitate and be safe to prevent any form of threats in a household. The project also aims to make life easier for those with disabilities, seniors, children and others. For this project, we will be building an app and hardware that is easy to use by everyone, and will allow many people to safely cohabitate; using smart home technologies such as automation, sensors and other means to prevent injuries and keep the home safe. The similar projects on the market are all smart home projects. We plan on doing a safe smart home project which is different from the other projects on the market, because our emphasis will be the safe element/component of the smart home.

Signatures/Effort Table

Name	ID	Signature	Effort
Jacob Stephens	n01100888	Jacob Stephens	100%
Veera Gudla	n01218714	Veera Gudla	100%

GitHub Repository Link

https://github.com/jacobStephens0088/SAFESMARTHOME



Sprint Goals

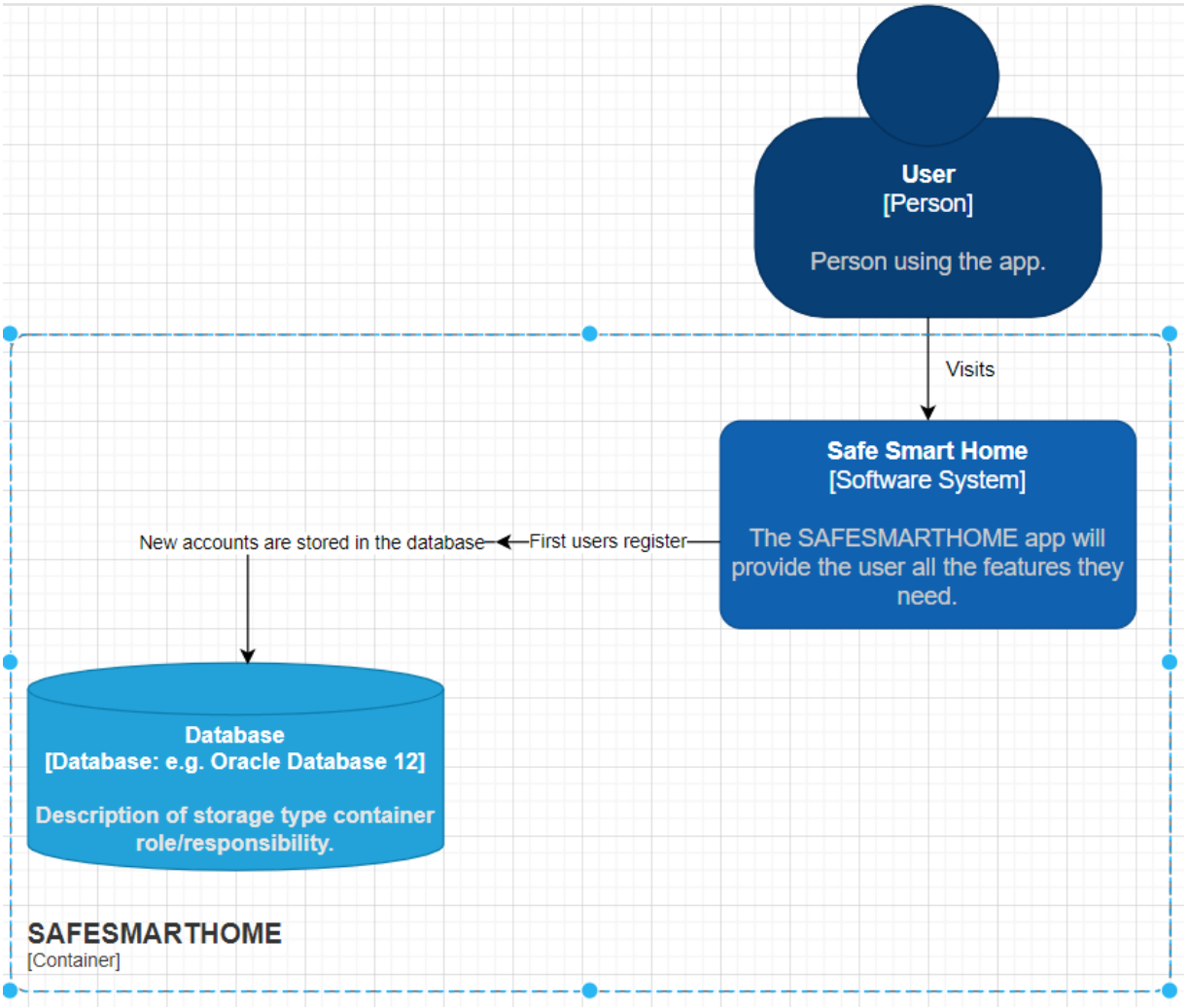
-Improve the login functionality.

-Make authentication secure by using a complex password.

-Add Customer Registration to the app.

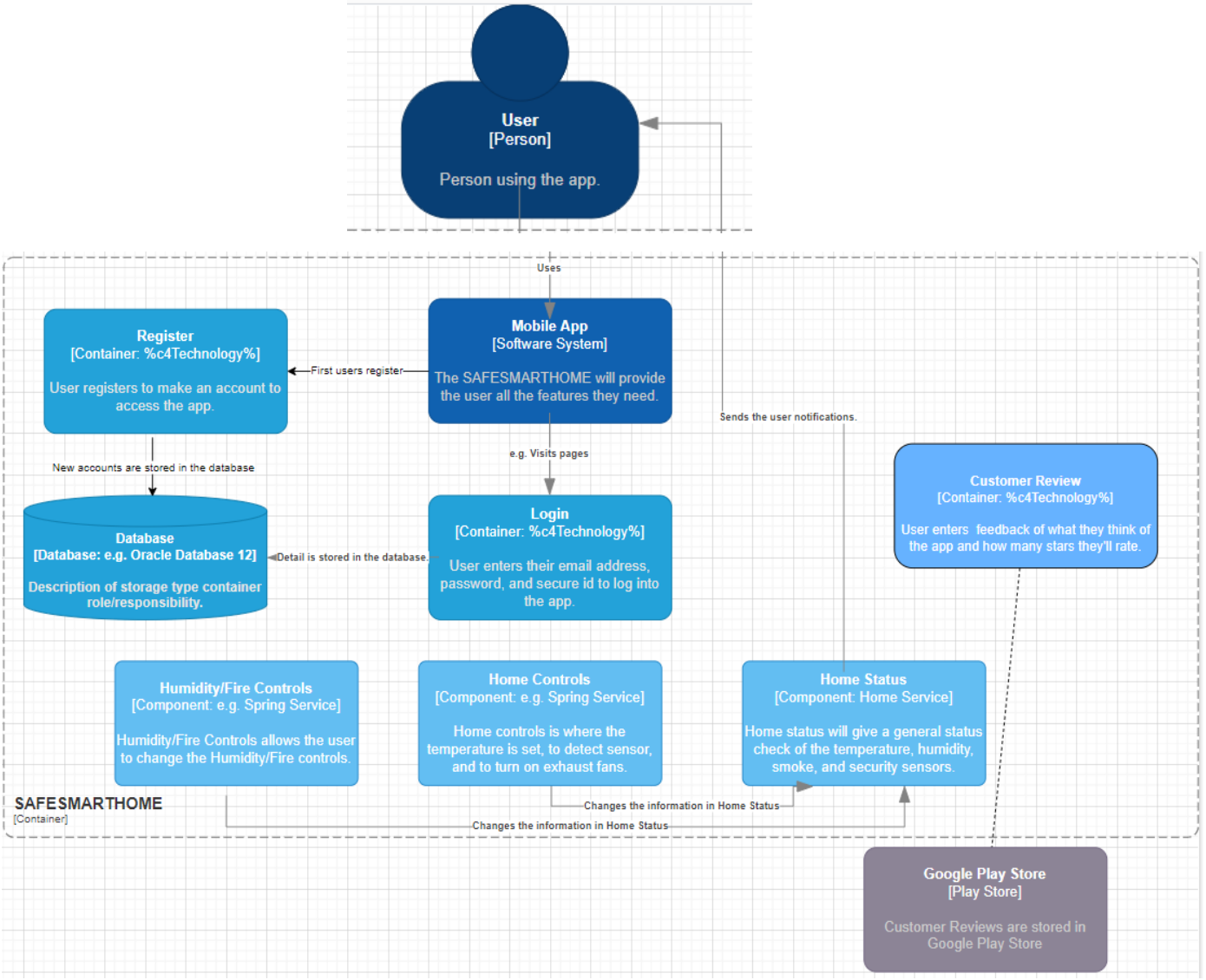
C4 Model

Container Diagram



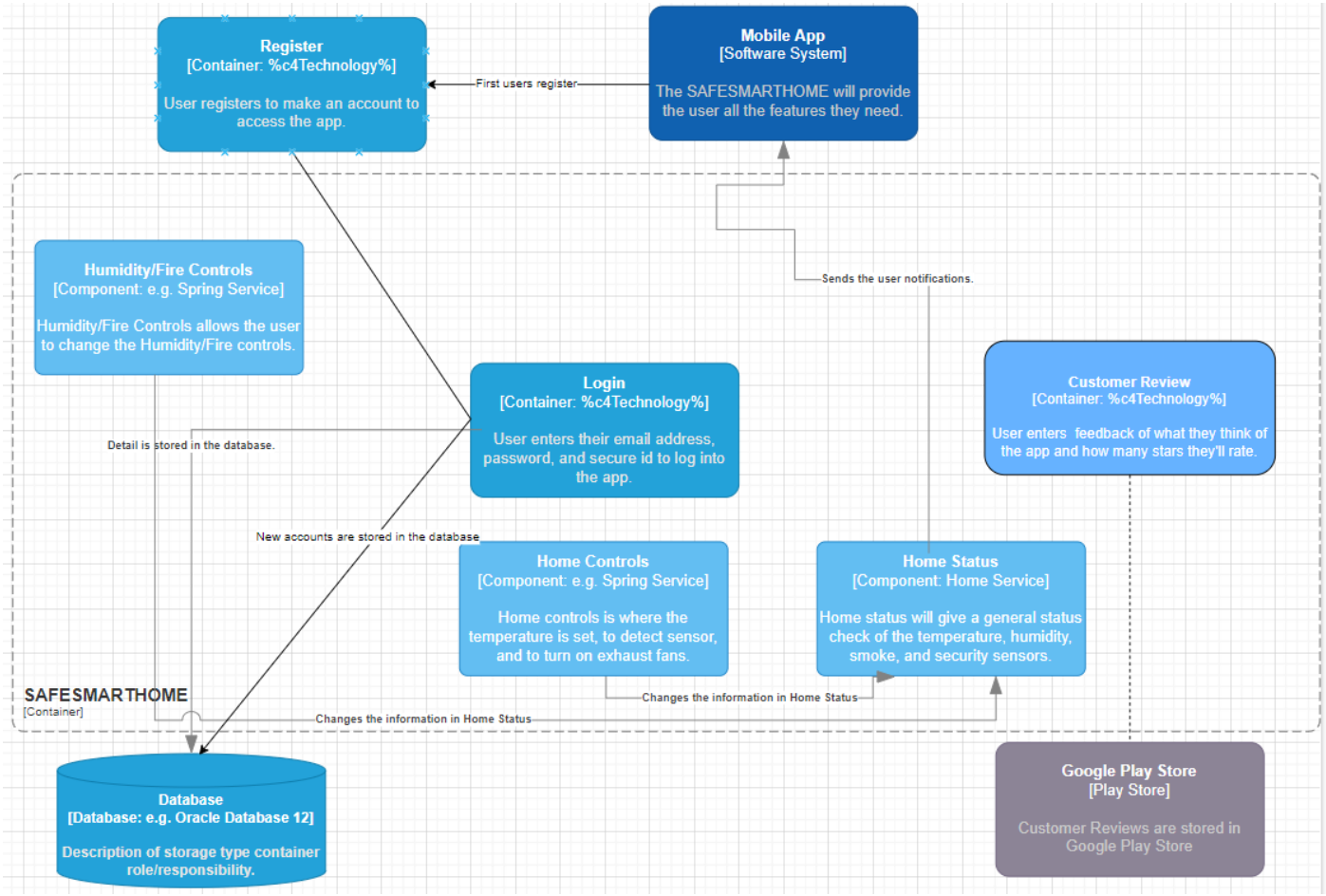
SAFESMARTHOMEC4ModelContainerDiagram.drawio - diagrams.net

Component Diagram Level 2



[SAFESMARTHOMEC4ModelComponentDiagramlevel2.drawio - diagrams.net]

Component Diagram Level 3



SAFESMARTHOMEC4ModelComponentDiagramlevel3.drawio - diagrams.net

Off-line Feature

The home status page shows the last available features of the home, such as Temperature, Humidity, Smoke, and Security.

Stories/Tasks

Safe Smart Home

The stories/tasks for the Safe Smart Home App.

Main Table | + Add View

Sprint 1: Make sure user registration to the app saved in Firebase DB.	Tasks	Assignee	Status	Start Date	End Date
Story1: Story 1: Give provision on register page for the user to register.	5		Done	Nov 25	Nov 26

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Make separate register page.		Done	Nov 25	Nov 26	Small
Task2: Add Gmail address login on register page.		Done	Nov 25	Nov 26	Medium
Task3: Add password complexity on register page.		Done	Nov 25	Nov 26	Large
Task4: Add provision to enter a 9 digit on the register page.		Done	Nov 25	Nov 26	Small
Task5: Save SecureID entered on register page on Firebase DB.		Done	Nov 25	Nov 26	Medium

Sprint2: Provide secure login functionality to Safe Smart Home app	Tasks	Assignee	Status	Start Date	End Date
Story1: Make login to Safe Smart Home app secured	5		Done	Oct 11	Oct 31

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Make provision to enter secure ID on login page.		Done	Oct 5	Oct 12	Medium
Task2: Make provision to enter gmail address as login to the app.		Done	Oct 6	Oct 12	Small
Task3: Make sure only when userID, password and secure ID are entered, user navigates to customer address page to enter his/her home address.		Done	Oct 9	Oct 12	Large
Task4: Make provision to hide password in login functionality.		Done	Oct 7	Oct 7	Medium
Task5: Make secure ID to enter is 9 digit number.		Done	Oct 9	Oct 12	Medium

Story2: Make user navigation flexible in the app.	5		Done	Nov 25	Nov 26

Subitems	Owner	Status	Start Date	End Date	Size
Task 1: Make separate login screen.		Done	Nov ...	Nov 25	Large
Task2: Do not make login screen as the tab page.		Done	Nov ...	Nov 25	Medium
Task3: Allow navigation to app pages after login to the app from login screen.		Done	Nov ...	Nov 25	Large
Task4: Restrict access to login screen after login to the app.		Done	Nov ...	Nov 25	Medium
Task5: Add password complexity to the login screen.		Done	Nov ...	Nov 26	Medium

Sprint3: Make customer address more feasible in Safe Smart home app

	Tasks	Assignee	Status	Start Date	End Date
Story1: Give user provision for home address on Safe Smart Home app.	5		Done	Nov 1	Nov 9

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Give provision on customer address page for the user to provide complete home address.		Done	Nov 1	Nov 3	Large
Task2: Provide provinces list for the user to choose on customer address page.		Done	Nov 4	Nov 6	Medium
Task3: Provide safety feeling to user by an image on the customer address page.		Done	Nov 9	Nov 9	Small
Task4: Giving notifications and alerts.		Done	Nov 9	Nov 9	Medium
Task5: Availability Status.		Done	Nov 9	Nov 9	Small

Story2: Share Customer experience with safe smart home app.	5		Done	Nov 8	Nov 13

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Design customer review page.		Done	Nov 8	Nov 9	Medium
Task2: Add ratings in the form of stars.		Done	Nov 9	Nov 9	Small
Task3: Give provision for customer details.		Done	Nov 9	Nov 9	Small
Task4: Complete GUI(Graphical User Interface).		Done	Nov 1	Nov 13	Large
Task5: Quick glance view for the Home status and Home control pages.		Done	Nov 9	Nov 10	Small

Story3: Give status of users's home from Home status page having user's home address	5		Done	Oct 7	Oct 22

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Set Home Temperature.		Done	Oct 7	Oct 9	Small
Task2: Set Smoke Detection.		Done	Oct 7	Oct 9	Small
Task3: When motion detector detects intruder Make sure to make the button is on to close all d...		Done	Oct 7	Oct 9	Large
Task4: Set humidity (optional)		Done	Oct 21	Oct 22	Large
Task5: When fire breaks turn on fire alarm and auto dial 9-1-1 (optional)					

Story4: Set custom user profile.	5		Done	Nov 6	Nov 10

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Set custom profile based on time.		Done	Nov 6	Nov 7	Small
Task2: Allow multiuser support.		Done	Nov 6	Nov 7	Small
Task3: Give temporary access to guests.(Optional)					
Task4: Allow custom minor changes to settings.		Done	Nov 6	Nov 7	Small
Task5: Display recommendations based on the user.		Done	Nov 9	Nov 10	Small

Sprint4: Make all required features available for the user for home safety.	Tasks	Assignee	Status	Start Date	End Date
Story 1: Make SecureID as the unique ID to identify users home address	5		Done	Nov 24	Dec 6

Subitems	Owner	Status	Start Date	End Date	Size
Task 1: When new secureID entered as login attempt by user, home address to be written to firebase db.		Done	Dec 5	Dec 6	Large
Task2: When secureID already written to firebase db is entered by user, home address should be read from firebase db onto customer address page.		Done	Dec 4	Dec 5	Large
Task3: When user logs in from login page and navigates to customer address page, user should not be allowed back to login page.		Done	Dec 2	Dec 3	Large
Task 4: Username and password on login page to be made as Gmail address.		Done	Nov 24	Nov 25	Medium
Task5: When click on login button on login page user with right credentials should be able to navigate to customer address page.		Done	Dec 1	Dec 2	Large

Story2: Make sure minimum features available for user's home safety on Home Control page.	5		Done	Nov 29	Dec 2

Subitems	Owner	Status	Start Date	End Date	Size
Task1: When temperature is above 20degrees Celsius, turn on AC and below 20degrees turn on heat.		Done	Nov 29	Nov 30	Medium
Task2: When smoke detected turn on exhaust fan.		Done	Nov 30	Dec 1	Medium
Task3: When someone tries to break into home detected using motion detector, turn on button to close all doors and windows of the home.		Done	Dec 1	Dec 2	Medium
Task4: Turn off humidity control as this is optional.					
Task5: When fire breaks auto dial 9-1-1 is tuned off as this is optional.					

Story3: Make sure Humidity/Fire page of App has provision for additional features for user's home safety.	5		Done	Oct 13	Nov 30

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Set Humidity control.		Done	Nov 29	Nov 30	Small
Task2: Set Fire alarm.					
Task3: Adding 2 images on Humidity/Fire app page to provide better feeling on home safety for the user by taking additional features.		Done	Oct 13	Oct 13	Small
Task4: When fire breaks into the home, turn on auto dial 9-1-1.					
Task5: When humidity is high, turn on AC.					

Story4: Allow different users	5		Done	Nov 8	Nov 8

Subitems	Owner	Status	Start Date	End Date	Size
Task1: Change password		Done	Nov 8	Nov 8	Small
Task2: Change username		Done	Nov 8	Nov 8	Small
Task3: Change email address		Done	Nov 8	Nov 8	Small
Task4: Set a profile picture.					
Task5: Renaming profile.					

[Safe Smart Home (monday.com)]

Project Technical Debt

Initial implementation of Login functionality to the Safe Smart Home app was an outdated design for speedy delivery of the app which later resulted in refactoring to improve login functionality.

2 areas of Refactoring

Refactoring was done to improve login functionality from hardcoded username/password to use Gmail account on login page.

Refactoring was done by adding a register page for customer registration to the app instead of a register button on the login page to register the customer.

Reason: To improve upon the app functionality.

Work on feedback

-Made separate login screen not part of the tabs.

-Made a register tab page.

-Added password complexity on the login page and register page.

-Added a Customer Review tab page for customer feedback.

-Added a setting tab page as the last tab page of the app.

-Procedure to test the app:

- From the login screen, click on the register button to navigate to the register page.

- Enter gmail address (ex: vrkgudla@gmail.com), password as (ex: Smarthome123#), and secureID as (ex: 555666100), and click on the register button. Then, the secureID: 555666100, will be written to the FirebaseDB. You will get a Snackbar message: “SecureID added to the Firebase DB”. Then, click on the login button, it will navigate to the login screen. On the Register page, you can check the password complexity by trying different passwords.

- Enter email address (ex: vrkgudla@gmail.com), password as (ex: Smarthome123#), and secureID as (ex: 555666100). Then, click on the login button on the login screen. It navigates to the Customer Address page, showing the default Customer Address reading from the Firebase DB. Change Customer Address and click on the insert button, it inserts a new customer address in the Firebase DB and navigates to the home status page. On the login screen, you can check the password complexity by trying different passwords.

- On the Home status page, click on the temperature image button, it displays the “Heat On” message, click on the humidity image button, it display the message “No Humidity”, click on smoke image button and displays the “No Smoke Detected” message, click on the security image button and displays the message “No Intruder”.

- With the help of tabs go to the register page and click on the login button. It navigates to the login screen, then enter email address (ex: vrkgudla@gmail.com), password as (ex: Smarthome123#), SecureID as (ex: 555666100), and click on the login button. It navigates to the Customer

Address page displaying the Customer Address, which was entered in the previous step.

- Using the tab, go to the Customer Review page and enter your Full name(ex: Veera Gudla), Phone Number(ex: 9052344460), email address (ex: vrkgudla@gmail.com). Then, write your comments and rating, click on submit button.

Note: When running the app, in case the SDK_location not found error comes, clone the app again from GitHub and run the app.

Test Cases

JUnit4

JUnit4 Test cases to validate the login credentials on the login page.

-JUnit4 Test Case for email address validation.
-JUnit4 Test Case for password validation.
-JUnit4 Test Case for SecureID validation.

LoginSepTest.java

JUnit4 Test Case to validate the login credentials on the register page.

-JUnit4 Test Case for email address validation.
-JUnit4 Test Case for password validation.
-JUnit4 Test Case for SecureID validation.

RegisterFragmentTest.java

Espresso

-Espresso Test Case for the login button on the login page.

-Espresso Test Case for the register button on the login page.

LoginScreenTest.java

Post Mortem/Project-Review Meeting

[Safe Smart Home, Online Whiteboard for Visual Collaboration (miro.com)]

Suggestions

The things that I liked in the course were learning about the agile and waterfall methodologies, the different design patterns and principles, and the creation of the Business Model Canvas and the Gantt Chart.

A two-week time period may not be sufficient for the project deliverable as group members either have dropped out of the course or are taking a semester maintaining full course loads, thus becoming busy with other assignments. Additionally, extend the due date for such projects.