

CENG-322 Software Project

Deliverable 3

The Second Dawn

A.L.I.E

CENG-322

Haki Sharifi

Nov 14, 2022

Team Member Information

Team Member Names:	Student ID's:
Paramand Mohabir	N01421732
Paolo Brancato	N01434080
Dave Patel	N01465129
Vladislav Vassilyev	N01436627

Table of Contents

CENG-322 Software Project Deliverable 3	1
Team Member Information	2
Table of Contents	3
Project Description	4
Team Members Info & Participation	5
GitHub Repo Link	8
Sprint Goals	8
Sprint 3 Dashboard	9
Story #1 Improving UI Functionality:	9
Story #2 Configuration Settings Screen:	10
Story #3 Firebase DB Implementation:	10
Story #4 UI Design:	11
Story #5 Smart Speaker Functionality:	11
Sprint 4 Dashboard	12
Story #1 Firebase DB Google, Facebook Login:	12
Story #2 Speaker Screen UI Design:	12
Story #3 Customer Review Screen:	13
Story #4 Home Screen UI Design:	13
Story #5 LED Screen UI Design:	14
Story #6 Screen Orientation Layout:	14
Story #7 Smart Fan Screen UI Design and Function:	15
Gantt Chart	16
Daily Standup	17
Meeting #1 Nov 10th:	17
Meeting #2 Nov 11th:	18
Meeting #3 Nov 12th:	19
Meeting #4 Nov 13th:	20
Sprint Retrospective	21

C4 Model System Context Diagram	22
Design Principles	22
Design Principle 1:	22
Design Principle 2:	2
	22
Design Patterns	23
Design Pattern 1:	23
Design Pattern 2:	23
Mobile App Development Progress	24
Runtime Permissions	26
Customer Review Screen	27
Login Credentials	28

Project Description

In our project A.L.I.E, I and the team members of The Second Dawn plan to create a voice-controlled A. I named A.L.I.E, which will control different components on our PCB Board. The 4 main components that will be used are LED Strip Lights, Voice Recognition Device, a Speaker Amplifier and a Controllable Smart Fan. The courses that are related to this project are CENG 258, CENG 216 and CENG252. CENG 258 is a mobile programming course that is related to this project because, in that course, we developed the skills and knowledge of Android Studio and how to implement different functions and learn how to build a complete android app. CENG 216 is a useful class as well due to the software skills we develop by learning the methods and methodology of the Agile Manifesto and how to use it to our advantage in a group project. CENG 252 is an embedded system programming course that gives us the skills on how to code on a raspberry pi and will be very useful when we implement our PCB Board. Our real-world project will be useful in this society.

Team Members Info & Participation

Team Member Names:	Student ID:	Signatures	Effort
Paramand Mohabir	N01421732	P.M	100% The effort I've added to this project was substantially a lot. I was able to get most things working 100% and did a bunch of assigned work. Everything was completed during this project with a high degree of effectiveness & skill.

Paolo Brancato	N01434080	P.B	100% <p>I was able to implement the splash screen for the A.L.I.E application, I was responsible for most of the a.l.i.e art icons and backgrounds created in photoshop, led_gradient as well. I added multiple strings to .xml and converted English to french in .xml fr. I created a fragment named led frag. I added a handler for 3 seconds. I created a new drawable with 5 resolutions.</p>
Dave Patel	N01465129	D.P	100% <ul style="list-style-type: none"> ● 2 Sprint stories with 5 tasks in each ● Created and designed HelpActivity.java (created multiple .xml files to create aesthetic look) ● implemented onClickListener on the button which opens dialer (HelpActivity.java) ● Implemented seekBar to control volume on SpeakerFrag

			<ul style="list-style-type: none"> • Created new Resource Directory for media files • Added onClick listeners to buttons and created object mediaPlayer to play and pause music • Created landscape layout for SpeakerFrag and converted multiple screens from ConstraintLayout to Linear Layout • <i>Implemented design principles / design pattern</i> • added multiple strings to .xml and converted English to french in .xml fr • Documentation • Etc.
Vladislav Vassilyev	N01436627	V.V	<p>25%</p> <p>I was working on improving functionality for the smart fan fragment and updating the configuration screen. I reached the desired functionality except for</p>

			<p>the whole app screen rotation lock. That I could not do.</p> <p>Additionally, I've made 1 story and documented 1 design pattern and principle.</p>
--	--	--	---

GitHub Repo Link

<https://github.com/ParamandMohabir1732/A.L.I.E/>

Sprint Goals

The sprint goals in our Project A.L.I.E that us, The Second Dawn, will plan to lead to our success are, focusing and completing daily scrums, establish a scrum dashboard to assess progress, value and deadlines, implement a customer review screen to receive feedback and improve functionality and improve UI design of the app for all devices giving wide accessibility. Firstly, completing daily scrums will help us increase productivity, improve our collaboration and keep track of three questions which are, what we did yesterday, what will we do today and any blockers preventing progress towards your tasks/goals. Secondly, establishing a scrum dashboard is an excellent way to visualize and keep track of all sprint tasks. The scrum dashboard can have many benefits such as setting priorities, status checks and keeping track of time accumulated in tasks and to who they belong. Thirdly, implementing a customer review screen can be very beneficial for us, as customers can provide feedback about our app and what can be improved to achieve more sales and have a better reputation for new customers. Lastly, having an outstanding design is essential for our project as we can attract new customers, increase our boost in customer retention and receive higher customer satisfaction. Thus, these sprint goals we have in our project A.L.I.E that we, The Second Dawn, planned will lead to the success of our project.

Sprint 3 Dashboard

A.L.I.E By: The Second Dawn ⓘ ☆						
Main Table Timeline +						
New Item ▾ 🔍 Search 👤 Person ⚙ Filter ▾ ↕ Sort 🗑 Hide ...						
▼ Sprint 3 (Oct. 22 - Nov. 5)						
<input type="checkbox"/>	Item		Assigned Person	Status	Start Date	End Date
<input type="checkbox"/>	> Improving UI Functionality	5 ⓘ	VV	Partially Done	Oct 22	Oct 24
<input type="checkbox"/>	> Configuration Settings Screen	5 ⓘ	VV	Not Completed		
<input type="checkbox"/>	> Firebase DB Implementation	5 ⓘ		Partially Done	Oct 24	Nov 5
<input type="checkbox"/>	> UI Design	5 ⓘ	DP PB	Partially Done	Oct 24	Oct 29
<input type="checkbox"/>	> Smart Speaker Functionality	5 ⓘ	VV	Not Completed		
<input type="checkbox"/>	+ Add Item					

Story #1 Improving UI Functionality:

▼ Sprint 3 (Oct. 22 - Nov. 5)									
<input type="checkbox"/>	Item		Assigned Person	Status	Start Date	End Date	+		
<input type="checkbox"/>	▼ Improving UI Functionality	5 ⓘ	VV	Partially Done	Oct 22	Oct 24			
<input type="checkbox"/>	SubItem		Owner	Priority	Status	Start Date	End Date	Size	+
<input type="checkbox"/>	Turning the Fan ON/OFF		VV		Incomplete			Small	
<input type="checkbox"/>	Controlling Speed of the Fan		VV		Incomplete			Medium	
<input type="checkbox"/>	Implementing Runtime Permission for Data storage		VV		Done	Oct 23	Oct 24	Large	
<input type="checkbox"/>	Implementing Voice Control to Control Fan		VV		Incomplete			X-Large	
<input type="checkbox"/>	Implementing Snackbar to Show if Fan is ON/OFF		VV		Done	Oct 22	Oct 24	Small	
<input type="checkbox"/>	+ Add SubItem								

Story #2 Configuration Settings Screen:

Sprint 3 (Oct. 22 – Nov. 5)

Item

Assigned Person

Status

Start Date

End Date

+

>

Improving UI Functionality

5

>

Configuration Settings Screen

5

Subitem

Owner

Priority

Status

Start Date

End Date

Size

Screen Orientation Control

Volume Control of the Smart Speaker

LED Panel Color Control

Fan Control






Configuration Control Functionality

+ Add Subitem


Story #3 Firebase DB Implementation:

Sprint 4 Dashboard

Story #1 Firebase DB Google, Facebook Login:

Sprint 4 (Nov. 5 - Nov. 14)									
<input type="checkbox"/>	Item		Assigned Person	Status	Start Date	End Date	+		
<input type="checkbox"/>	▼	Firebase DB Google, Facebook Login 5		Working on it	Oct 28				
<input type="checkbox"/>	Subitem			Owner	Priority	Status	Start Date	End Date	Size
<input type="checkbox"/>	Implement UI Element for Google Login				Critical ⚠	Done	Oct 28	Oct 29	Small
<input type="checkbox"/>	Send User Data From Google to Firebase DB				High	Done	Nov 5	Nov 10	Large
<input type="checkbox"/>	Implement UI Element for Facebook Login				Low	Done	Oct 28	Oct 30	Small
<input type="checkbox"/>	Send User Data From Facebook to Firebase DB				Medium	Blocked	Nov 5		Large
<input type="checkbox"/>	Translate Text from Toasts To French				Low	Done	Oct 28	Nov 12	Small
<input type="checkbox"/>	+ Add Subitem								

Story #2 Speaker Screen UI Design:

Sprint 4 (Nov. 5 - Nov. 14)									
<input type="checkbox"/>	Item		Assigned Person	Status	Start Date	End Date	+		
<input type="checkbox"/>	>	Firebase DB Google, Facebook Login 5		Working on it	Oct 28				
<input type="checkbox"/>	▼	Speaker Screen UI Design 6	DP	Working on it	Nov 9				
<input type="checkbox"/>	Subitem			Owner	Priority	Status	Start Date	End Date	Size
<input type="checkbox"/>	Implement seekbar to adjust volume			DP	High	Done	Nov 9	Nov 11	Small
<input type="checkbox"/>	Implement switch for turning speaker On/Off			DP	Medium	Done	Nov 10	Nov 12	Small
<input type="checkbox"/>	Create pause and play buttons for media files			DP	Medium	Done	Nov 11	Nov 12	Medium
<input type="checkbox"/>	Store data into sharedPref and upload to Database			DP	Critical ⚠	Blocked			Large
<input type="checkbox"/>	Add animation to make screen visually appealing			DP	Low	Done	Nov 11	Nov 13	Large
<input type="checkbox"/>	Add appropriate images for Speaker UI			DP	Critical ⚠	Done	Nov 10	Nov 12	Small

Story #3 Customer Review Screen:

Sprint 4 (Nov. 5 - Nov. 14)									
<input type="checkbox"/>	Item			Assigned Person	Status	Start Date	End Date	+	
<input type="checkbox"/>	>	Firebase DB Google, Facebook Login	5		Working on it	Oct 28			
<input type="checkbox"/>	>	Speaker Screen UI Design	6	DP	Working on it	Nov 9			
<input type="checkbox"/>	✓	Customer Review Screen	5	DP PB	Done	Nov 9	Nov 14		
<input type="checkbox"/>	Subitem			Owner	Priority	Status	Start Date	End Date	Size
<input type="checkbox"/>		Use emoji or stars for the review		PB	Medium	Done	Nov 10	Nov 11	Small
<input type="checkbox"/>		Include info, name, phone number, email and comment		PB	High	Done	Nov 10	Nov 11	Small
<input type="checkbox"/>		UI and Layout of Review Screen		PB	Critical ⚠	Done	Nov 10	Nov 12	Medium
<input type="checkbox"/>		Implement 1 runtime permission functionality		PB	Critical ⚠	Done	Nov 11	Nov 12	Large
<input type="checkbox"/>		Store data into firebase DB			Critical ⚠	Done	Nov 14	Nov 14	Large

Story #4 Home Screen UI Design:

Sprint 4 (Nov. 5 - Nov. 14)									
<input type="checkbox"/>	Item			Assigned Person	Status	Start Date	End Date	+	
<input type="checkbox"/>	>	Firebase DB Google, Facebook Login	5		Working on it	Oct 28			
<input type="checkbox"/>	>	Speaker Screen UI Design	6	DP	Working on it	Nov 9			
<input type="checkbox"/>	>	Customer Review Screen	5	DP PB	Done	Nov 9	Nov 14		
<input type="checkbox"/>	✓	Home Screen UI Design	5		Working on it	Nov 9			
<input type="checkbox"/>	Subitem			Owner	Priority	Status	Start Date	End Date	Size
<input type="checkbox"/>		Implement Image Button Runtime Permission to Allow Microphone Access			Medium	Done	Nov 10	Nov 12	Medium
<input type="checkbox"/>		Create Landscape Version of Home Screen			Medium	Done	Nov 12	Nov 14	Medium
<input type="checkbox"/>		Implement Image Buttons to turn on certain Functions quickly like LED Lights...			Medium	Done	Nov 11	Nov 13	Large
<input type="checkbox"/>		Implement Notifications for Runtime Permissions			Medium	Blocked	Nov 11		Large
<input type="checkbox"/>		Implement Snackbars for Runtime Permissions whether its already given per...			High	Done	Nov 11		Small

Story #5 LED Screen UI Design:

Sprint 4 (Nov. 5 - Nov. 14)

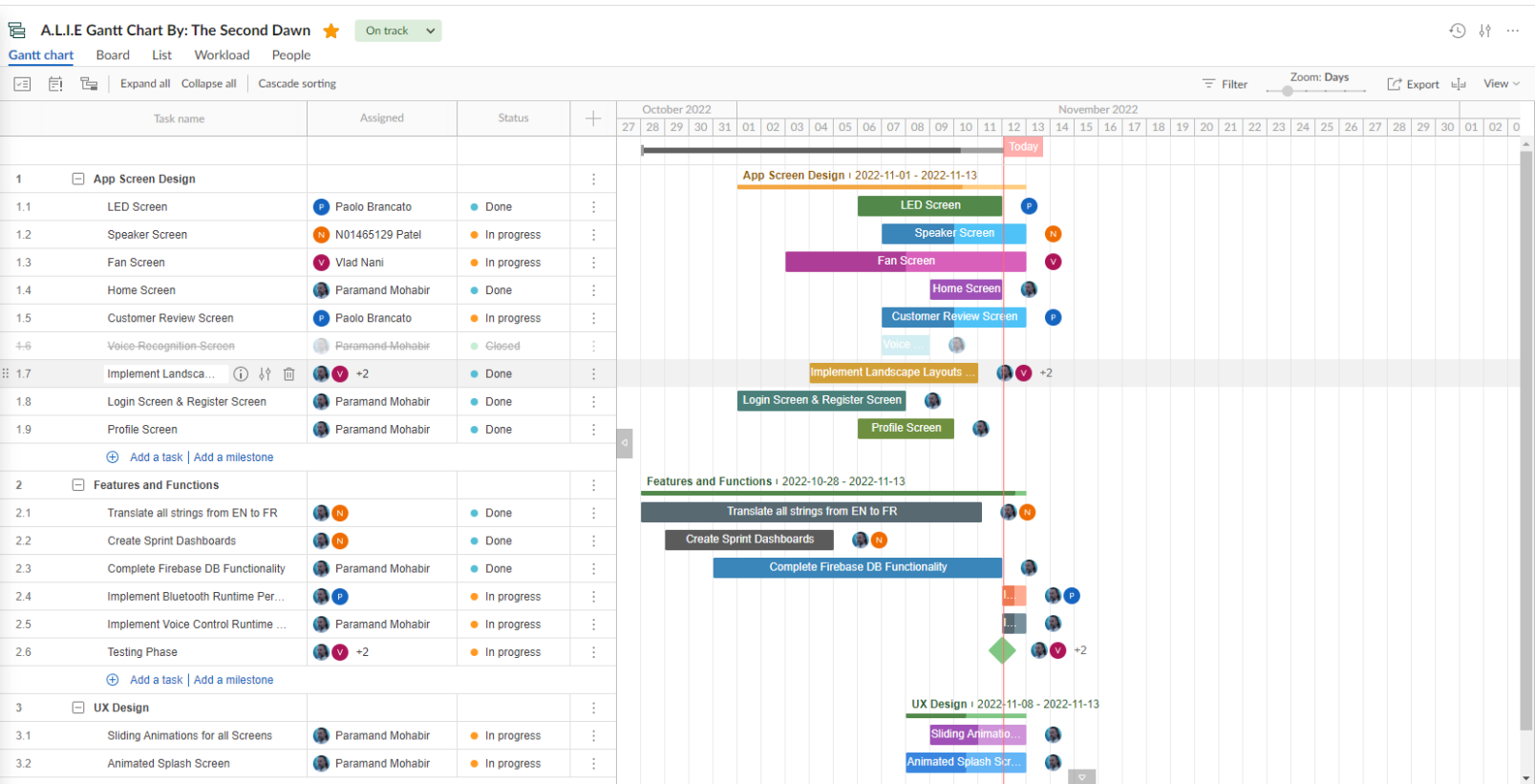
Story #6 Screen Orientation Layout:

Sprint 4 (Nov. 5 - Nov. 14)

Story #7 Smart Fan Screen UI Design and Function:

▼ Sprint 4 (Nov. 5 - Nov. 14)									
<input type="checkbox"/>	Item		Assigned Person	Status	Start Date	End Date	+		
<input type="checkbox"/>	>	Speaker Screen UI Design 6		Working on it	Nov 9				
<input type="checkbox"/>	>	Customer Review Screen 5		Done	Nov 9	Nov 14			
<input type="checkbox"/>	>	Home Screen UI Design 5		Working on it	Nov 9				
<input type="checkbox"/>	>	LED Screen UI Design 5		Done	Nov 11	Nov 14			
<input type="checkbox"/>	>	Screen Orientation Layout 5		Working on it	Nov 11				
<input type="checkbox"/>	▼	Smart Fan Screen UI Design and Function 5		Done	Nov 14	Nov 14			
<input type="checkbox"/>	Subitem			Owner	Priority	Status	Start Date	End Date	Size
<input type="checkbox"/>	ON/OFF button				Low	Done	Nov 14	Nov 14	Small
<input type="checkbox"/>	Fan Speed slider				Low	Done	Nov 14	Nov 14	Small
<input type="checkbox"/>	Fan Speed presets				Low	Done	Nov 14	Nov 14	Small
<input type="checkbox"/>	Store usage data				Medium	Done	Nov 14	Nov 14	Medium
<input type="checkbox"/>	Analyze usage data of the fan				Low	Done	Nov 14	Nov 14	Medium

Gantt Chart



Daily Standup

Meeting #1 Nov 10th:

Daily Standup

Sprint 3

November 10th, 2022

Paramand Mohabir

What did you work on yesterday?

Yesterday, I implemented the Remember Me Function in my Login Activity so the user can login automatically.

What will you work on today?

Today, I plan on working on my Login Screen to implement the Google Login to connect to Firebase DB and login.

Any blockers?

No blockers at the moment.

Vladislav Vassilyev

What did you work on yesterday?

Updated stories and Gantt chart

What will you work on today?

Design landscape layout for the Smart Fan Frag

Any blockers?

No

Paolo Brancato

What did you work on yesterday?

planning of the document for my Monday, gant chart.

What will you work on today?

working on implementing customer review screen and completing documentation.

Any blockers?

No

Dave Patel

What did you work on yesterday?

Updated sprint dashboard with two stories
Updated gantt chart

What will you work on today?

Documentation

Any blockers?

No

Meeting #2 Nov 11th:

Daily Standup

Sprint 4

November 11th, 2022

Paramand Mohabir

What did you work on yesterday?

Yesterday, I fixed the Google login functionality so the user can login to our app using Google.

What will you work on today?

Today, I plan on working on the home screen and implementing the runtime permission for Voice Control and Bluetooth.

Any blockers?

No blockers at the moment.

Vladislav Vassilyev

What did you work on yesterday?

Absent

What will you work on today?

Absent

Any blockers?

Absent

Paolo Brancato

What did you work on yesterday?

Nothing N/A

What will you work on today?

finishing customer review screen and starting, led screen.

Any blockers?

No

Dave Patel

What did you work on yesterday?

added switch with OnCheckedChangeListener to SpeakerFrag. Created new Resource Directory for media files and added a sample file. Created two buttons to play and pause media. Added onClick listeners to buttons and created object mediaPlayer. Created seekBar to control volume in SpeakerFrag.java

What will you work on today?

I will create the help page and link it to the menu

Any blockers?

No

Meeting #3 Nov 12th:

Daily Standup

Sprint 4

November 12th, 2022

Paramand Mohabir

What did you work on yesterday?

I've implemented a Microphone Runtime Permission and a Microphone Image Button so the user can say words and the app can recognize the words and place it in a textview.

What will you work on today?

Today, I plan on finishing the Home Screen by implementing Image Buttons for quick Access to main components of our App.

Any blockers?

No blockers at the moment.

Vladislav Vassilyev

What did you work on yesterday?

Absent

What will you work on today?

Absent

Any blockers?

Absent

Paolo Brancato

What did you work on yesterday?

worked on LED screen and implemented a RGB picker.

What will you work on today?

finishing LED screen and implementing more buttons for later functionality. along with adding a permission request for internet.

Any blockers?

No

Dave Patel

What did you work on yesterday?

Designed and created the help page

What will you work on today?

I will be making my final changes to HelpActivity and SpeakerFrag and I will work on 2 design principles

Any blockers?

No

Meeting #4 Nov 13th:

Daily Standup

Sprint 4

November 13th, 2022

Paramand Mohabir

What did you work on yesterday?

I implemented Landscape Layouts for Bluetooth Activity and Customer Review Screen

What will you work on today?

Today, I plan on finishing the UI of the Customer Screen and uploading the Customer Review Information to Firebase DB.

Any blockers?

No blockers at the moment.

Vladislav Vassilyev

What did you work on yesterday?

I implemented radio buttons for the fan speed control

What will you work on today?

I will link the functionality of the radio buttons to the slider

Any blockers?

No

Paolo Brancato

What did you work on yesterday?

I worked on LED screen and finished customer review screen.

What will you work on today?

I will work on the final implementations of Bluetooth permissions screen and functionality

Any blockers?

No

Dave Patel

What did you work on yesterday?

Added Linear Layout to Speaker Frag, created Landscape view for Speaker Frag, simplified SpeakerFrag by removing unnecessary pictures and fixed HelpActivity.java

What will you work on today?

I will work on 2 design principles and help with the documentation

Any blockers?

No

Sprint Retrospective

Sprint Retrospective

Sprint 3 & 4

November 14th, 2022

Paramand Mohabir

Start Doing.

We will start doing code inspections to make sure there are no bugs/glitches in our code.

Stop Doing.

I will stop taking 15 minutes for doing the daily standup and save the time to complete the tasks.

Continue Doing.

Continue using the Gantt Chart to follow progress in our project.

Vladislav Vassilyev

Start Doing.

Communicate more with the teammates to improve my productivity with the next deliverable

Stop Doing.

Stop making silly mistakes in my code

Continue Doing.

I will continue to hopefully improve my time managing skills.

Paolo Brancato

Start Doing.

To improve my efforts in the project I should commit earlier and consult with teammates on weekly schedule.

Stop Doing.

I should stop procrastinating big projects and have them be the first thing I do.

Continue Doing.

I should continue to communicate with my teammates and maintain a consistent schedule.

Dave Patel

Start Doing.

I should start working on my tasks as soon as they are assigned so I don't have to stay up late night working last minute to submit on time. It's always good to have some extra time for unseen circumstances.

Stop Doing.

I should stop procrastinating and I should stop letting my code pile up endlessly without checking if it's compiling without any errors.

Continue Doing.

I should continue to have a to do list to maintain im getting all my work done within the required time frame.

C4 Model System Context Diagram

Design Principles

Design Principle 1:

Main design principle that was used in the development of the configuration screen is “Encapsulate what varies”. This approach advises that for better performance, the app should keep the components that don't change (remain constant, static) apart or enclosed (change). This division is based on the assumption that the app's various sections' content will evolve over time and may be expanded or modified. By separating the variable portion of the application, you can alter the code more easily, save a lot of time, and avoid breaking the static portion of the application.

Design Principle 2:

The design principle we implemented was rhythm. The pictures used and the controls to play and pause media files give the speaker interface a rhythmic mood that reflects the speaker's operation.

Design Patterns

Design Pattern 1:

For the development of the Configuration Screen I used the “Composite pattern”. The user's ability to modify the items on the fly is this pattern's key feature. I am aware that dealing with the whole or partial hierarchy of the objects is one of the duties of the Composite pattern. Since hierarchy is not as significant in this particular situation, it is not taken into account.

Making objects and functions that can be easily added over time requires a composite pattern. The primary goal of adopting the Composite pattern for the configuration screen is to achieve this. With each additional smart home device a user adds, the app's capability must increase and broaden.

Design Pattern 2:

Mobile App Development Progress

- Completed the implementation of the Registration and login screens
- Implemented settings screen
- Implemented remember me function
- Implemented a GoogleLoginActivity class for Google Login
- Implemented Functionality For Microphone Button
- created HelpActivity.java and linked it to toolbar menu
- Added landscape layout to HelpActivity
- implemented various .xml files to Help screen
- implemented onClickListener on the button which opens dialer (HelpActivity.java)
- Completed UI for Customer Review Screen
- Created Landscape for Customer Review Screen.
- Created Landscape for Reset Password Screen.
- added a rating bar, added a text view and polished the presentation of the customer review screen.
- Completed the UI for Reset Password Activity.
- Created a new Fragment Screen called ProfileFrag that will be used for changing user settings.
- Implemented functionality to let user change profile
- Added switch with OnCheckedChangeListener to SpeakerFrag.java
- Implemented seek bar to control the volume on SpeakerFrag.java

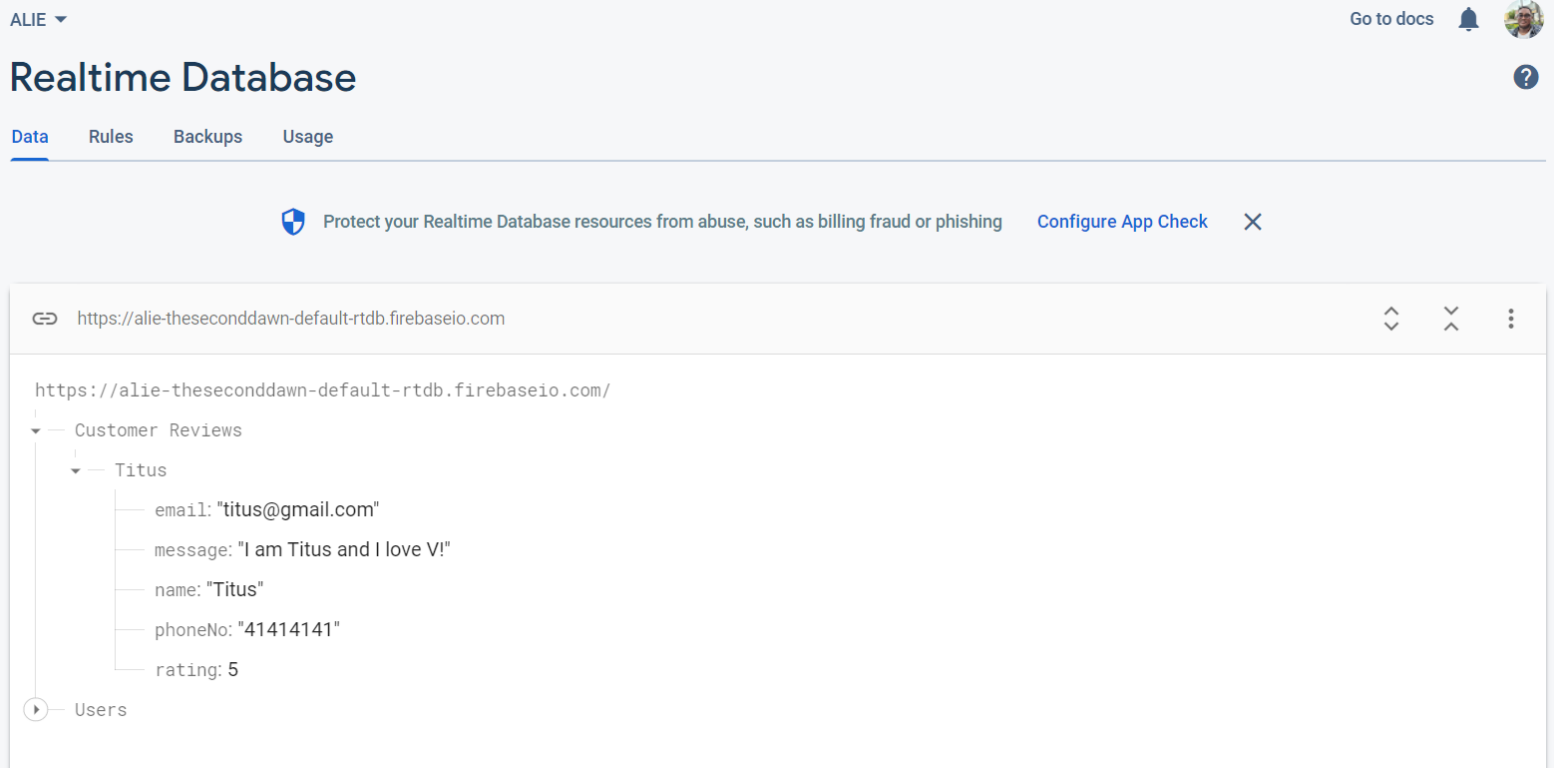
- Added a colour picker button with changing background functionality, also added to Gradle Ambilwarna
- Adjusted fragment Speaker landscape, LED landscape, and Home landscape.
- Added Forgot Password Icon in 4 Different Resolutions
- Created a new Left Arrow IC image. Created a Left Arrow Image Button Design in Register Screen
- Implemented the Functionality to Go Back to the Previous Page Using the Left Arrow in RegisterActivity.java.
- implemented the screen for Bluetooth and added multiple buttons and TextViews as well as Image Views. Started some of the code. added some vector assets
- implemented Bluetooth functionality
- Created a new User Review Java class that will have objects to store the user information that is provided in the CustomerReviewActivity.
- Implemented Functionality so users can Review our App and their info will be sent to the Database
- implemented Set Errors for the EditText Fields.
- Completed Project

Runtime Permissions

The runtime permissions we, The Second Dawn have implemented on our app A.L.I.E, are Voice Runtime Permission, Access to Storage Runtime Permission, Access to Location Runtime Permission and Bluetooth Runtime Permission. The Voice Runtime Permission will be used on the home screen and will be requested once the user presses the microphone image button. The Access to Storage Runtime Permission will be used on the Smart Fan screen and will be requested once the user pressed the button. The Access to Location Runtime Permission will be used on the LED Screen and will be requested once the user pressed the button. The Bluetooth Runtime Permission will be located in the Bluetooth Activity under the menu options Bluetooth and will be requested once the user clicks on the turn-on button.

Customer Review Screen

The data from the Customer Review screen will be stored in my Realtime Database through the objects declared in my UserReview.class. User information will be stored in the database reference name of the user. The screenshot located down below is an example of a user entering the info on the Review Screen.



The screenshot displays the Firebase Realtime Database interface. At the top, the user 'ALIE' is logged in, with links for 'Go to docs', a notification bell, and a profile icon. The main heading is 'Realtime Database', with tabs for 'Data', 'Rules', 'Backups', and 'Usage'. A security warning banner states: 'Protect your Realtime Database resources from abuse, such as billing fraud or phishing' with a 'Configure App Check' link. The address bar shows the URL: 'https://alie-theseconddawn-default-rtdb.firebaseio.com'. The database structure is visible as a tree:

- Customer Reviews
 - Titus
 - email: "titus@gmail.com"
 - message: "I am Titus and I love V!"
 - name: "Titus"
 - phoneNo: "41414141"
 - rating: 5
- Users

Login Credentials

The Login Credentials are located down below for your Reference to logging in.

Email: TheSecondDawnALIEAPP@gmail.com

Password: TheSecondDawn