

**Deliverable 3**

**GreenOps**

**Smart Building**

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Fraser(N01309442)**

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## **Project Description:**

Smart Building app is an integrated cloud based residential and commercial property management software system. It uses IoT sensors, raised floors and building automation to give users access to control: heating and air conditioning, lighting, and security. Our software is designed aiming to increase building efficiency and reduce operating expenses by saving time and money.

**Test Login username:** test@test.com

**Test Login password:** test111




**Professor Login username:** profhaki@ceng322.com

**Professor Login password:** ceng 322

## **Git Link**

<https://github.com/MofifoluwaLekeAkinrowo3651/SmartBuilding>

## **Members Info and Participation:**

| Name                        | Id        | Signature  | Effort |
|-----------------------------|-----------|--|--------|
| Mofifoluwa<br>Leke-Akinrowo | N01343651 |  | 100%   |
| Bibek Dhakal                | N01419953 |  | 100%   |
| Andrew Fraser               | N01309442 |  | 100%   |

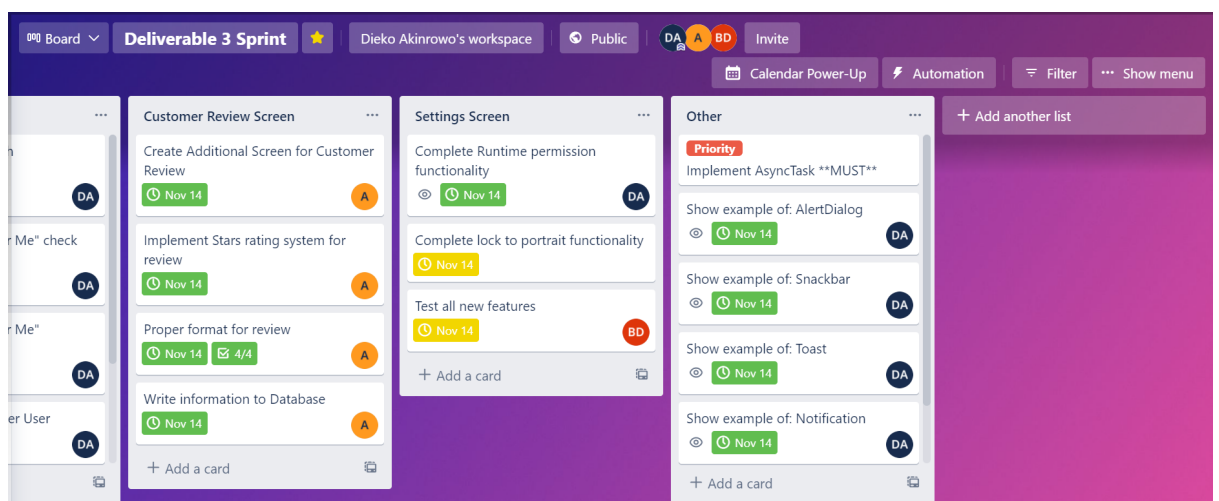
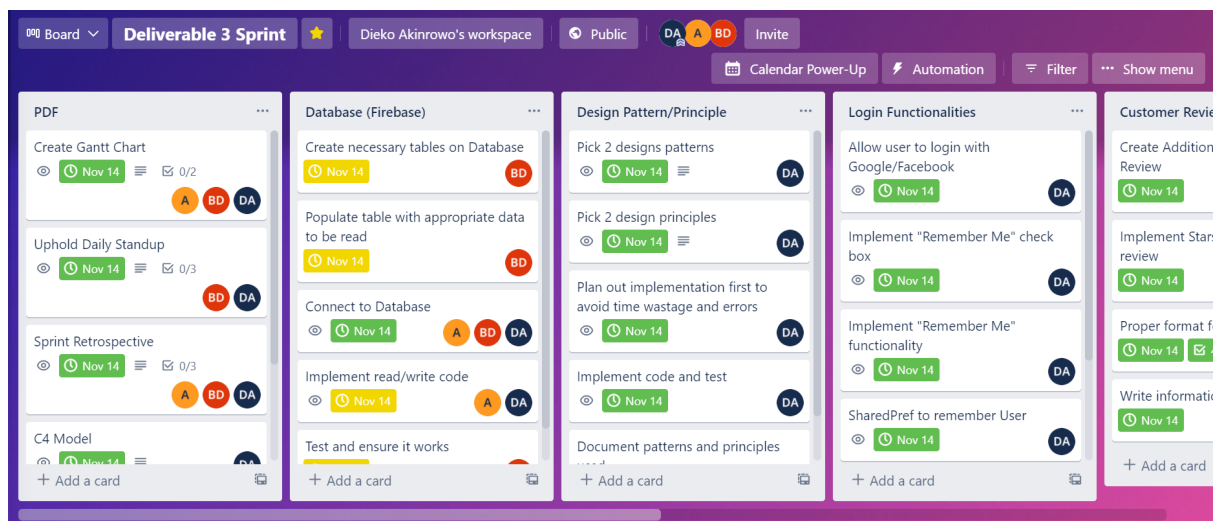
## Sprint Goal

The goal of this third sprint is to complete all UI/UX designs and functionalities, while closely following provided guidelines. We will implement new features that include;

1. Login Authentication on the Login Screen
2. Additional screens for customer reviews
3. Establish a connection to our database to ensure smooth usability for clients.

Once completed testing will be carried out to ensure, at worst case, all priority functionalities are tested and successful and minimal bugs and errors that will not cause the app to crash.

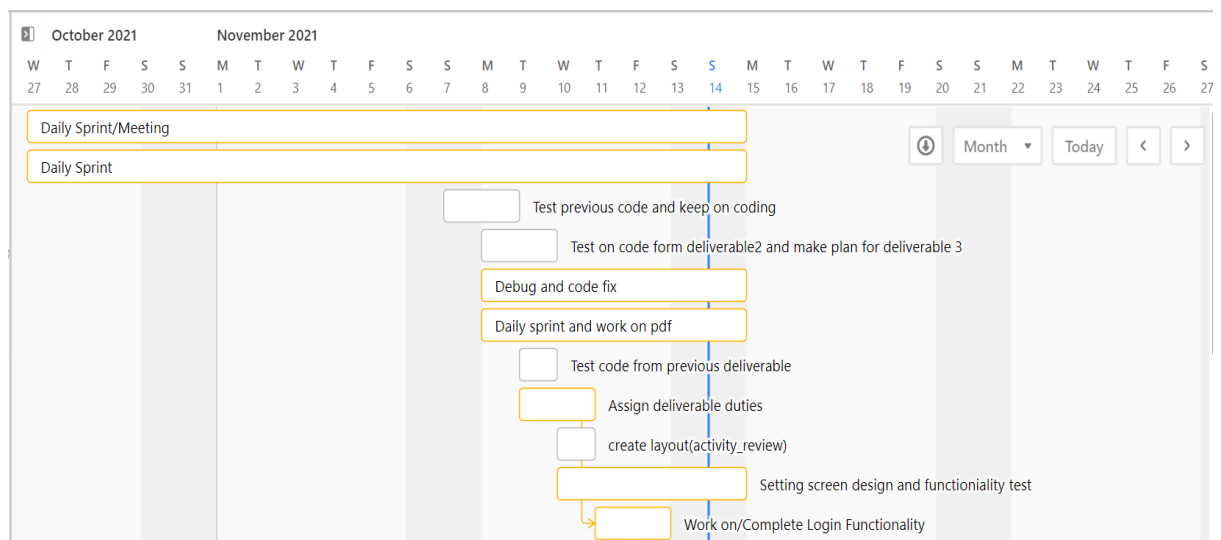
## SCRUM BOARD

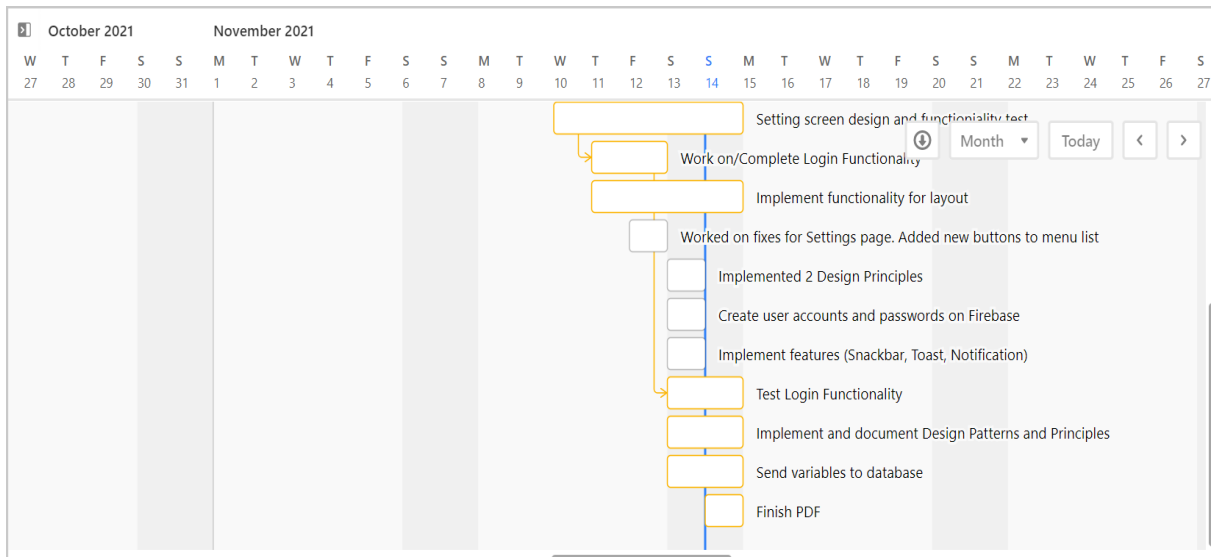


# GANTT CHART

| <input type="checkbox"/> | A Feature   | ▼ | ▼ Effort | ▼ | 📅 Started  | ▼ | 📅 Completed | ▼ | 👤 Assigned               | ▼ |
|--------------------------|---|---|----------|---|------------|---|-------------|---|--------------------------|---|
| 1                        | Test Login Functionality  |   | High     |   | 11/13/2021 |   | 11/14/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 2                        | Test on code form deliverable2 and make plan for deliverable 3    |   | Medium   |   | 11/8/2021  |   | 11/9/2021   |   | Andrew Fraser            |   |
| 3                        | Implemented 2 Design Principles                                   |   | Low      |   | 11/13/2021 |   | 11/13/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 4                        | Assign deliverable duties   |   | Medium   |   | 11/9/2021  |   | 11/10/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 5                        | Daily Sprint/Meeting  |   | Medium   |   | 10/27/2021 |   | 11/14/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 6                        | Test code from previous deliverable                               |   | Low      |   | 11/9/2021  |   | 11/9/2021   |   | Mofifoluwa Leke-Akinrowo |   |
| 7                        | Create user accounts and passwords on Firebase                    |   | Low      |   | 11/13/2021 |   | 11/13/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 8                        | Work on/Complete Login Functionality                              |   | High     |   | 11/11/2021 |   | 11/12/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 9                        | Worked on fixes for Settings page. Added new buttons to menu list |   | High     |   | 11/12/2021 |   | 11/12/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 10                       | Setting screen design and functionality test                      |   | High     |   | 11/10/2021 |   | 11/14/2021  |   | Bibek Dhakal             |   |
| 11                       | Implement features (Snackbar, Toast, Notification)                |   | Medium   |   | 11/13/2021 |   | 11/13/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 12                       | Test previous code and keep on coding                             |   | Medium   |   | 11/7/2021  |   | 11/8/2021   |   | Bibek Dhakal             |   |

| <input type="checkbox"/> | A Feature   | ▼ | ▼ Effort | ▼ | 📅 Started  | ▼ | 📅 Completed | ▼ | 👤 Assigned               | ▼ |
|--------------------------|---|---|----------|---|------------|---|-------------|---|--------------------------|---|
| 12                       | Test previous code and keep on coding                 |   | Medium   |   | 11/7/2021  |   | 11/8/2021   |   | Bibek Dhakal             |   |
| 13                       | Debug and code fix                                    |   | Medium   |   | 11/8/2021  |   | 11/14/2021  |   | Bibek Dhakal             |   |
| 14                       | Daily sprint and work on pdf                          |   | Medium   |   | 11/8/2021  |   | 11/14/2021  |   | Bibek Dhakal             |   |
| 15                       | Implement and document Design Patterns and Principles |   | Medium   |   | 11/13/2021 |   | 11/14/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| 16                       | create layout(activity_review)                        |   | Medium   |   | 11/10/2021 |   | 11/10/2021  |   | Andrew Fraser            |   |
| 17                       | Implement functionality for layout                    |   | High     |   | 11/11/2021 |   | 11/14/2021  |   | Andrew Fraser            |   |
| 18                       | Daily Sprint  |   | Medium   |   | 10/27/2021 |   | 11/14/2021  |   | Andrew Fraser            |   |
| 19                       | Send variables to database                            |   | High     |   | 11/13/2021 |   | 11/14/2021  |   | Andrew Fraser            |   |
| 20                       | Finish PDF  |   | Medium   |   | 11/14/2021 |   | 11/14/2021  |   | Mofifoluwa Leke-Akinrowo |   |
| +                        |   |   |          |   |            |   |             |   |                          |   |





# DAILY STANDUPS

10th Nov -

## Daily Standup Sprint 3

Wednesday Nov 10th 2021

| Andrew  | Mofifoluwa   | Bibek  |
|---|--|--|
| <p>What did you work on yesterday?</p> <p>-plan tasks and functions</p> | <p>What did you work on yesterday?</p> <p>- Wrote and planned out all tasks for project</p>                              | <p>What did you work on yesterday?</p> <p>Discussed with group members</p> |
| <p>What will you work on today?</p> <p>-discuss tasks with group</p>    | <p>What will you work on today?</p> <p>- Start assigning tasks through scrum board.<br/>- Discuss with group members</p> | <p>What will you work on today?</p> <p>work on code</p>                    |
| <p>Any blockers?</p> <p>No</p>  | <p>Any blockers?</p> <p>No</p>   | <p>Any blockers?</p> <p>No</p>   |

11th Nov -

## Daily Standup Sprint 3

Wednesday Nov 11th 2021

| Andrew   | Mofifoluwa   | Bibek  |
|--|--|--|
| <p>What did you work on yesterday?</p> <p>-Planning with group members</p> | <p>What did you work on yesterday?</p> <p>- General Planning</p>   | <p>What did you work on yesterday?</p> <p>-Write some code of setting screen</p> |
| <p>What will you work on today?</p> <p>-implement database into code</p>   | <p>What will you work on today?</p> <p>- Implement google sign in</p>  | <p>What will you work on today?</p> <p>- Work on database</p>                    |
| <p>Any blockers?</p> <p>No</p>   | <p>Any blockers?</p> <p>- Wifi was down most of day, library computers didn't allow smooth coding but a bit of the job</p> | <p>Any blockers?</p> <p>No</p>   |

12th Nov -

### Daily Standup Sprint 3

Wednesday Nov 12th 2021

| Andrew   | Mofifoluwa  | Bibek   |
|--|---|---|
| <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>-implemented database within code</li></ul> | <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>- Start up google sign in implementation</li></ul> | <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>- Worked on database implementation and design</li></ul> |
| <p>What will you work on today?</p> <ul style="list-style-type: none"><li>-fix bugs</li></ul>                            | <p>What will you work on today?</p> <ul style="list-style-type: none"><li>- continue working on google sign in</li></ul>        | <p>What will you work on today?</p> <ul style="list-style-type: none"><li>- Continue</li></ul>  |
| <p>Any blockers?</p> <ul style="list-style-type: none"><li>-No</li></ul>   | <p>Any blockers?</p> <ul style="list-style-type: none"><li>- no</li></ul>   | <p>Any blockers?</p> <ul style="list-style-type: none"><li>No</li></ul>   |

13th Nov -

### Daily Standup Sprint 3

Wednesday Nov 13th 2021

| Andrew  | Mofifoluwa  | Bibek   |
|---|---|---|
| <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>-Fix bugs</li></ul>                    | <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>- Finished google sign in authentication</li></ul>   | <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>- Work on Database</li></ul>                             |
| <p>What will you work on today?</p> <ul style="list-style-type: none"><li>-make layouts for review screen</li></ul> | <p>What will you work on today?</p> <ul style="list-style-type: none"><li>- implement email/password login authentication</li><li>- create users and passwords for login function</li><li>- implemented design principles</li></ul> | <p>What will you work on today?</p> <ul style="list-style-type: none"><li>- Continue on database and work on setting screen</li></ul> |
| <p>Any blockers?</p> <ul style="list-style-type: none"><li>no</li></ul>   | <p>Any blockers?</p> <ul style="list-style-type: none"><li>- NO</li></ul>   | <p>Any blockers?</p> <ul style="list-style-type: none"><li>No issue at the moment</li></ul>   |



14th Nov -

## Daily Standup Sprint 3

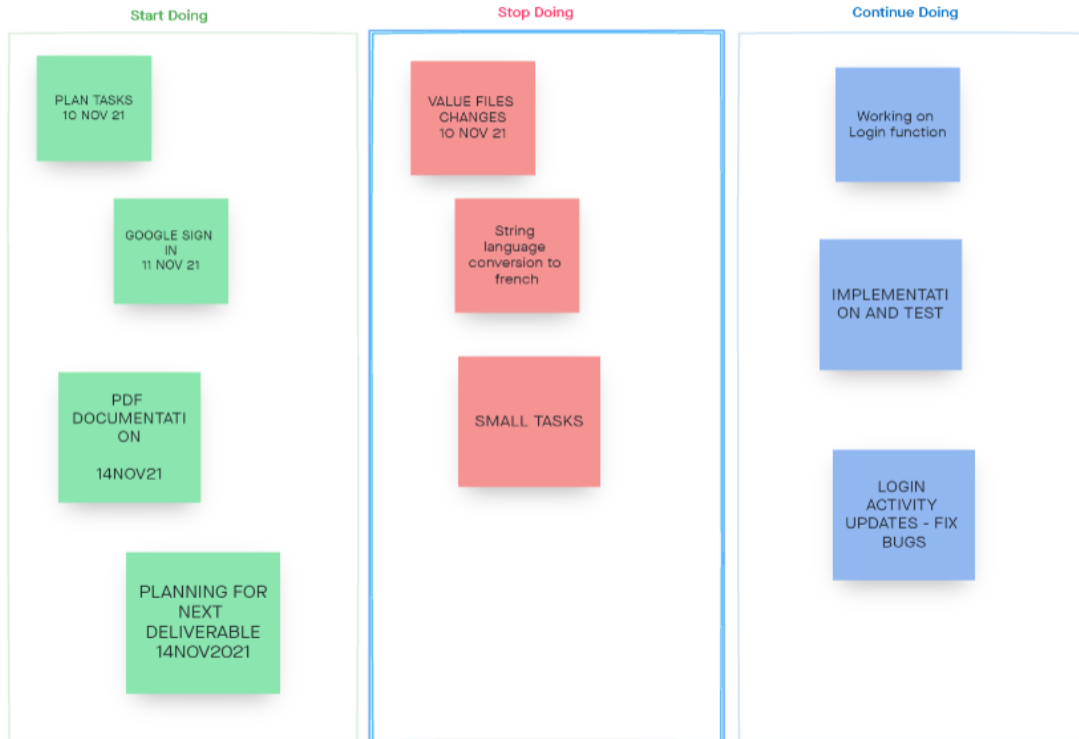
Wednesday Nov 14th 2021

| Andrew  | Moffoluwa  | Bibek   |
|---|--|---|
| <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>-Debug and review code</li><li>-setting up review_activity layout</li></ul>                            | <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>- Login and authentication functionality, notification functionality, runtime permission</li><li>- Create accounts for members and professor</li><li>- Design principles and patterns</li></ul> | <p>What did you work on yesterday?</p> <ul style="list-style-type: none"><li>-Setting screen design</li></ul>   |
| <p>What will you work on today?</p> <ul style="list-style-type: none"><li>-add functionality to code</li><li>-customize layout activity</li><li>-test code</li><li>-debug</li></ul> | <p>What will you work on today?</p> <ul style="list-style-type: none"><li>- Complete PDF</li></ul>   | <p>What will you work on today?</p> <ul style="list-style-type: none"><li>- Continue on setting screen</li><li>- Code review and test</li><li>- Debug</li></ul> |
| <p>Any blockers?</p> <p>No</p>  | <p>Any blockers?</p> <p>No</p>   | <p>Any blockers?</p> <p>No problem at the moment</p>  |

# SPRINT RETROSPECTIVE

greenOps\_SmartBuilding\_Sprint3Retrospective

24 OCT 2021 - 14 NOV 2021



## DESIGN PATTERNS

### 1. Creational Pattern - Builder

GoogleSignInOption -

```
//Builder
gso = new
GoogleSignInOptions.Builder(GoogleSignInOptions.DEFAULT_SIGN_IN)
.requestEmail()
.build();
```

### 2. Structural Pattern - Adapter

RoomAdapter -

```
public class RoomAdapter extends
RecyclerView.Adapter<RoomAdapter.MyViewHolder> {
...
}
```

## DESIGN PRINCIPLES

### 1. Liskov Substitution

Room.java -

```
public Room(String id, String name) {
    this.id = id;
    this.name = name;
}
```

### 2. Interface Segregation Principle (ISP)

MainActivity.java -

```
public class MainActivity extends AppCompatActivity
implements GoogleApiClient.OnConnectionFailedListener {
```

## **ADDITIONAL FEATURES**

We've implemented new features that include easy login and authentication, database records and customer/client feedback. On the login screen, email/password authentication and Google Sign-in have been implemented. "Remember Me" checkbox, when checked, will not require the user to login on re-opening the app unless the user has logged out. Upon clicking the logged out button, notification is generated in the Notification Center. Once login is authenticated, their login username (email) and password is written to the database. Snackbar and Toast is shown if Google login is unsuccessful.

In the drop down menu, when the "User Review" menu item is clicked, it leads to a customer review page. Customer review screen has been added to the project and includes a star rating system implemented with a comment box added for users. When the submit button is clicked, star rating and user comment is written to the database.

We also implemented the camera runtime permission function.

## C4 MODEL

