Deliverable 4
GreenOps
Smart Building
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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.

Git Link: https://github.com/MofifoluwaLekeAkinrowo3651/SmartBuilding

Name	ID	Signature	Effort
Mofifoluwa Leke-Akinrowo	**N01343651**		**100%**
Bibek Dhakal	**N01419953**		**100%**
Andrew Fraser	**N01309442**		**100%**

Sprint Goal

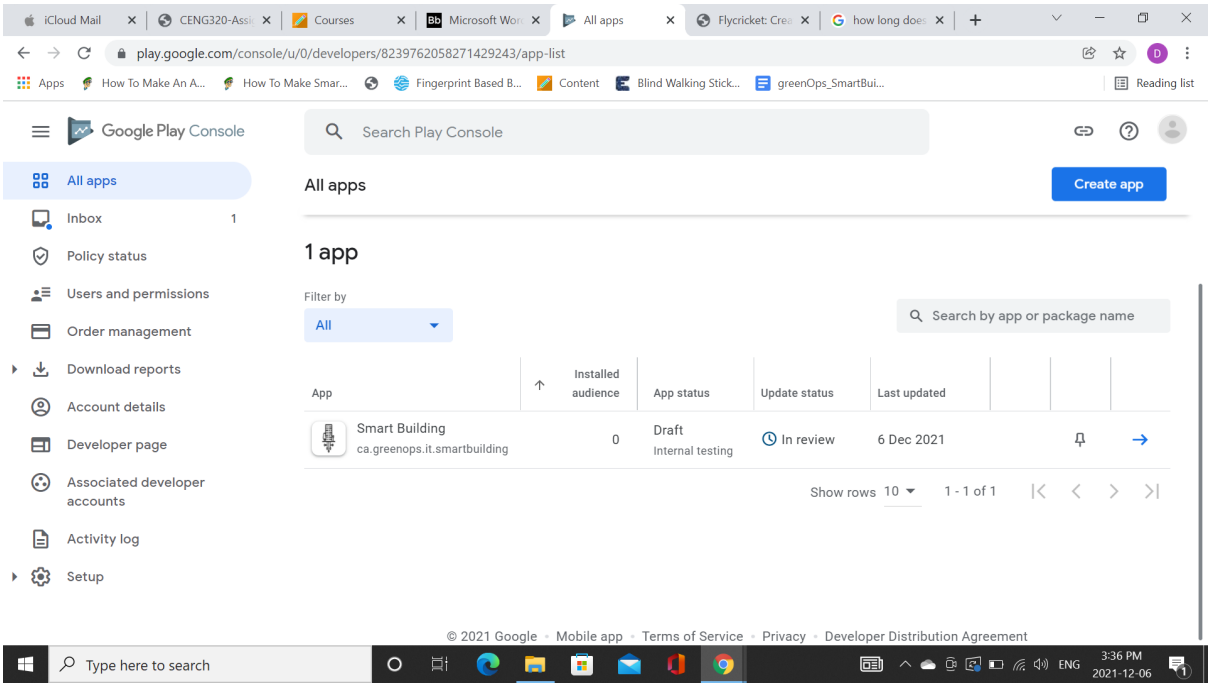
The goal of this sprint is to complete the development of the app. This includes addition of new features and the removal of non-functional items, moving the customer review tab to the navigation tab layout and adding a registration screen. Once these features are complete, test cases are written in order to test the app and ensure smooth running and complete functionality.

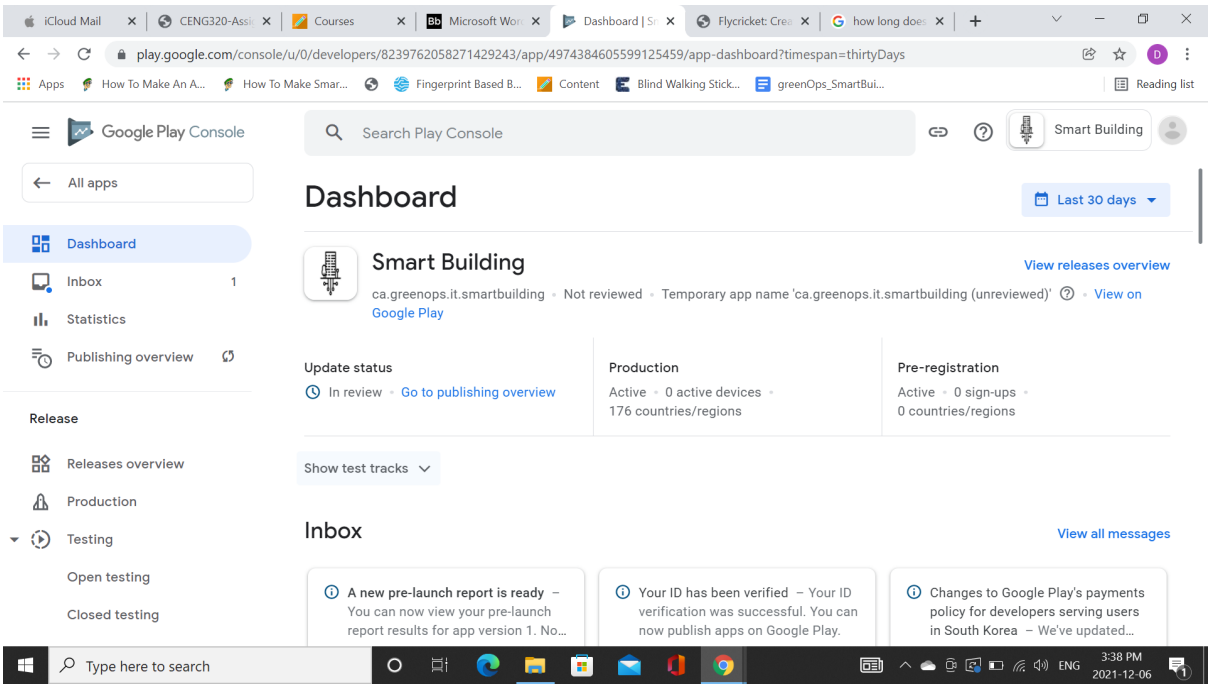
Credentials

Test Login username: test@test.com
Test Login password: test111

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

Google Play:



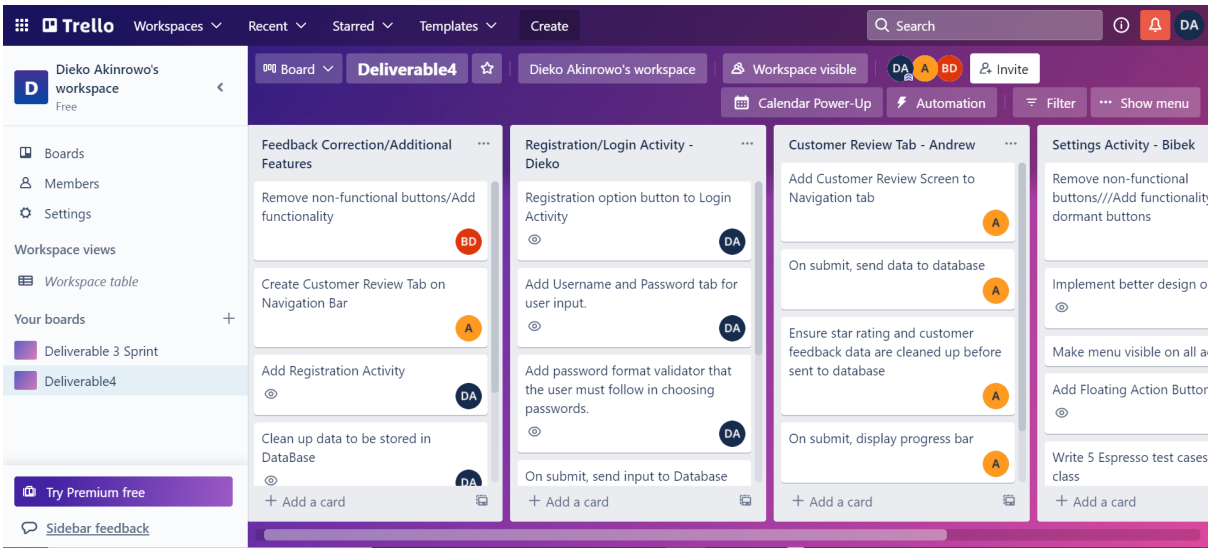


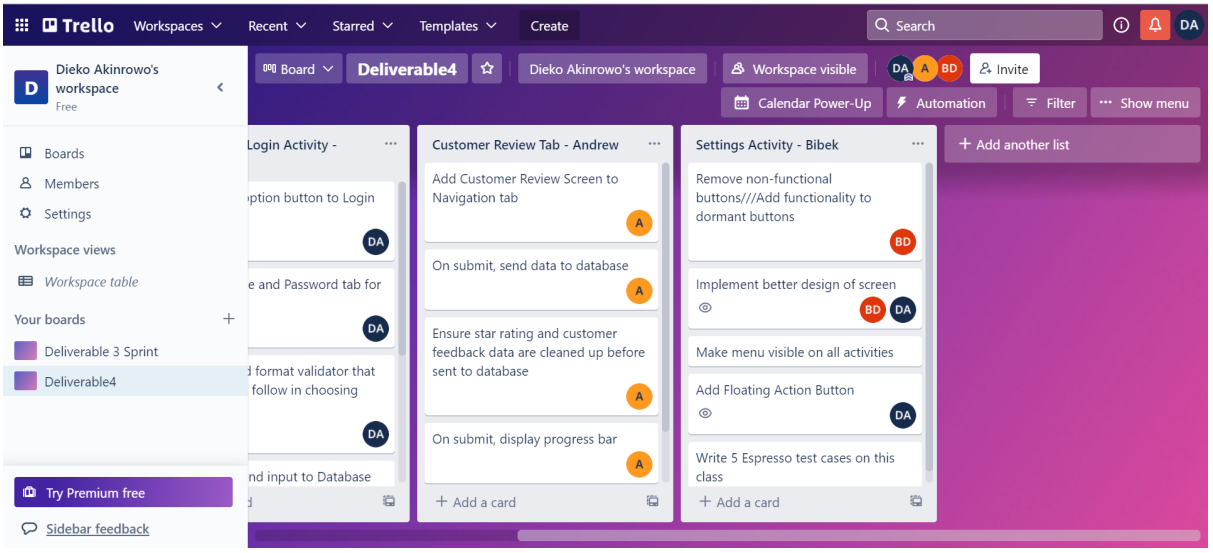
Runtime Permission Feature

We added the Runtime permission for use of the camera. On the menu bar, we implemented a button which when clicked, prompts the user to give the permission to the app to access the camera. Once the user grants permission, the camera is opened.

SCRUM DASHBOARD

KEY -
DA - Dieko Akinrowo (Mofifoluwa Leke-Akinrowo)
A - Andrew Fraser
BD - Bibek Dhakal





Post-Mortem Review

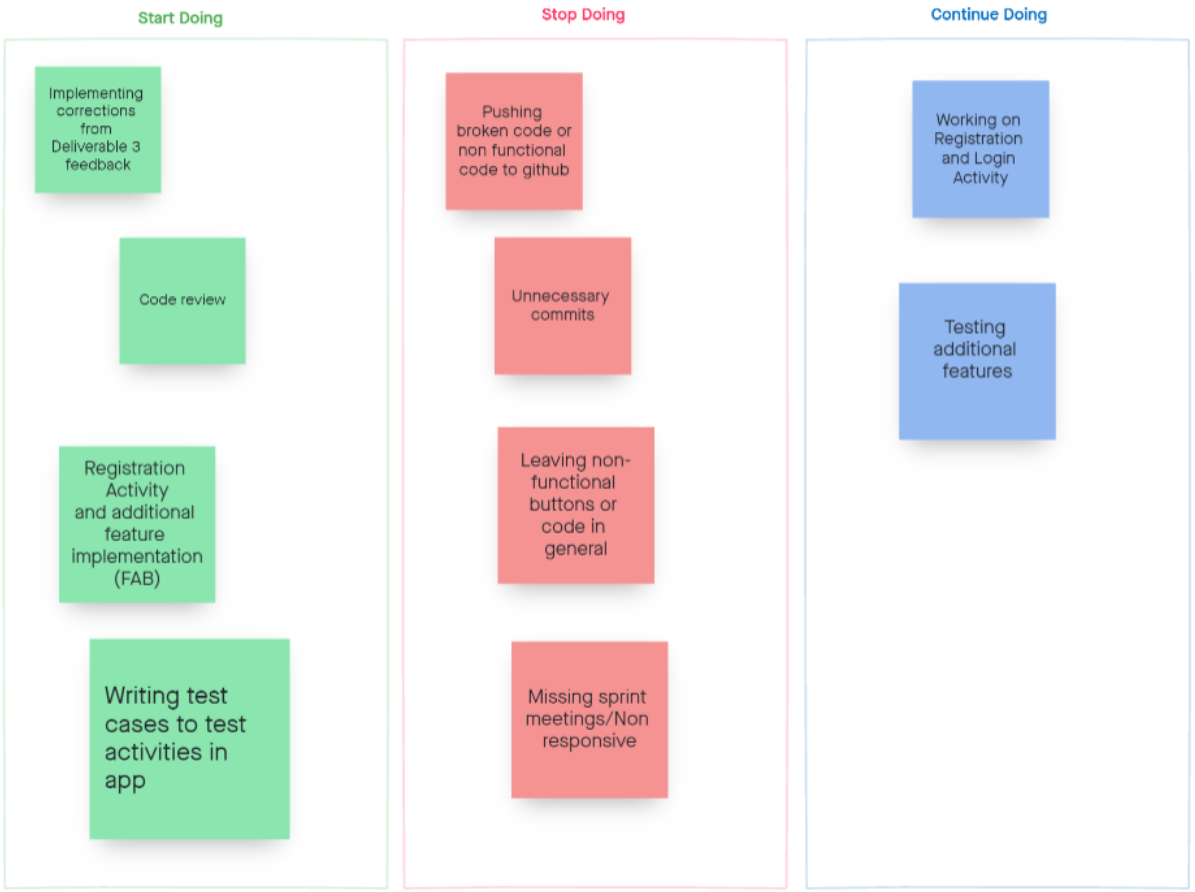
Overall considering all factors including cost, schedule and quality, the performance of this project is good but can definitely be improved. Team can improve on time management. While development tasks weren't done last minute, we failed to meet soft set deadlines on multiple occasions which led to unnecessary delays. We made compromises on the quality of the code as the level of effort and attention from all team members was not equal through all Deliverables leading to the inability to implement certain functions and in some cases, last minute plan changes to meet the Deliverable deadline.

As a team, we have learned that effort cannot be split among all members. Each member is required to give 100% in order to meet set standards and level of quality for the project at

hand. Time Management is also very key when handling projects of this size and complexity; it is very easy to miss deadlines when time management is poor. These are areas of improvement we seek to work on.

Project Review

greenOps_SmartBuilding_Sprint4Retrospective



Technical Debt

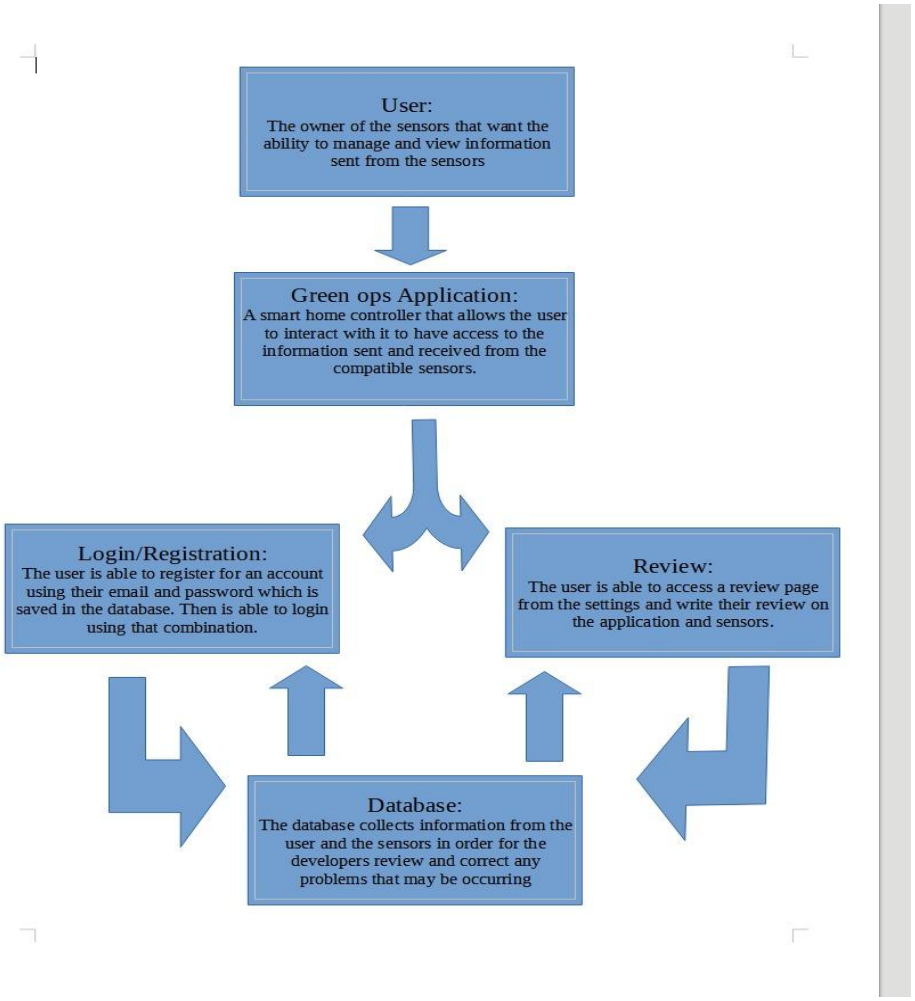
1. **Low Quality Code** - Considering the level of effort and level of skill we started to make necessary compromises to meet set deadlines.

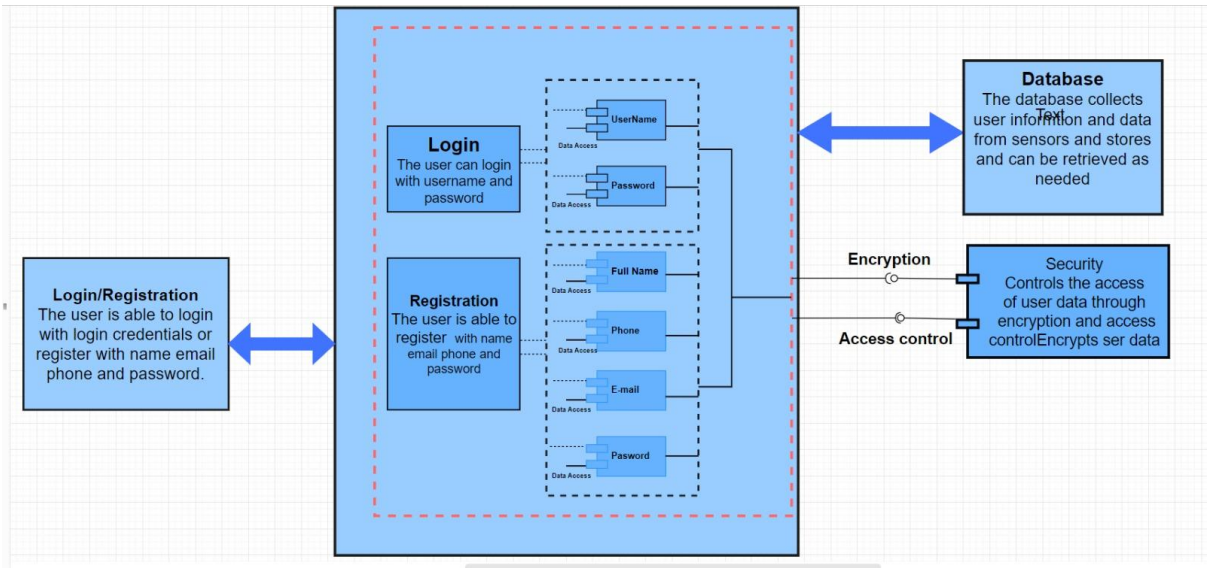
   To address this, we consulted with the professor to address the level of effort among team members and assigned tasks with higher difficulty to members who had a higher skill level.

2. **Low Quality Code Structure** - With the method in which we handled the development of code, upon revisiting already done code it became difficult to merge new code with old leading to last minute changes or flawed implementation of functionalities.

To address this, though long and tasking, we went through each class trying to refactor code in order to facilitate smoother running of the project.

C4 Model





Refactoring Documentation

The first area of refactoring was carried out in the MainActivity class. We had the “logout” button implemented to the MainActivity because it would be directly linked to the preceding class, LoginActivity. Upon receiving feedback from Professor Haki, we moved the logout button to the SettingsActivity class as that would make a better design than the original implementation.

We also refactored the Navigation tab by replacing the EventsActivity class, which we initially added to the project to read in values from the DataBase, with the CustomerReviewActivity class. This change was also done upon receiving feedback from the past Deliverables to take into consideration for the final project submission.

Suggestions

We don’t have a lot of suggestions for future projects as we believe that this project and how instructions were given out and handled were mostly great. The one thing we could suggest for the future is that the Professor create these groups and assign leaders to each of these groups. Assigned group leaders will then have regular meetings or provide detailed reports, either weekly or bi-weekly after lectures/labs to the Professor to discuss group affairs and tackle any existing problems i.e. whom is assigned to what tasks, who did and didn’t attend group scrum meetings and how to go about handling defaulting group members, and so on. This way groups will be decided more fairly, groups and their members are more held accountable for their actions, and allowing **ONLY** group leaders strict access to submissions to avoid any malpractices. We believe the effort table was a good idea but not always accurate as group members who didn’t agree with the effort scores given to them had easy access to alter those scores and get away with little to no active contributions on group projects.