

DELIVERABLE 1

Team Name: TBD

**“Smart Library Study Room
Management and Comfort System”**

GROUP 2

Student’s names and IDs:

Mathew Anderson-Saavedrea n01436706

Nicole Chlea Manaoat N01565017

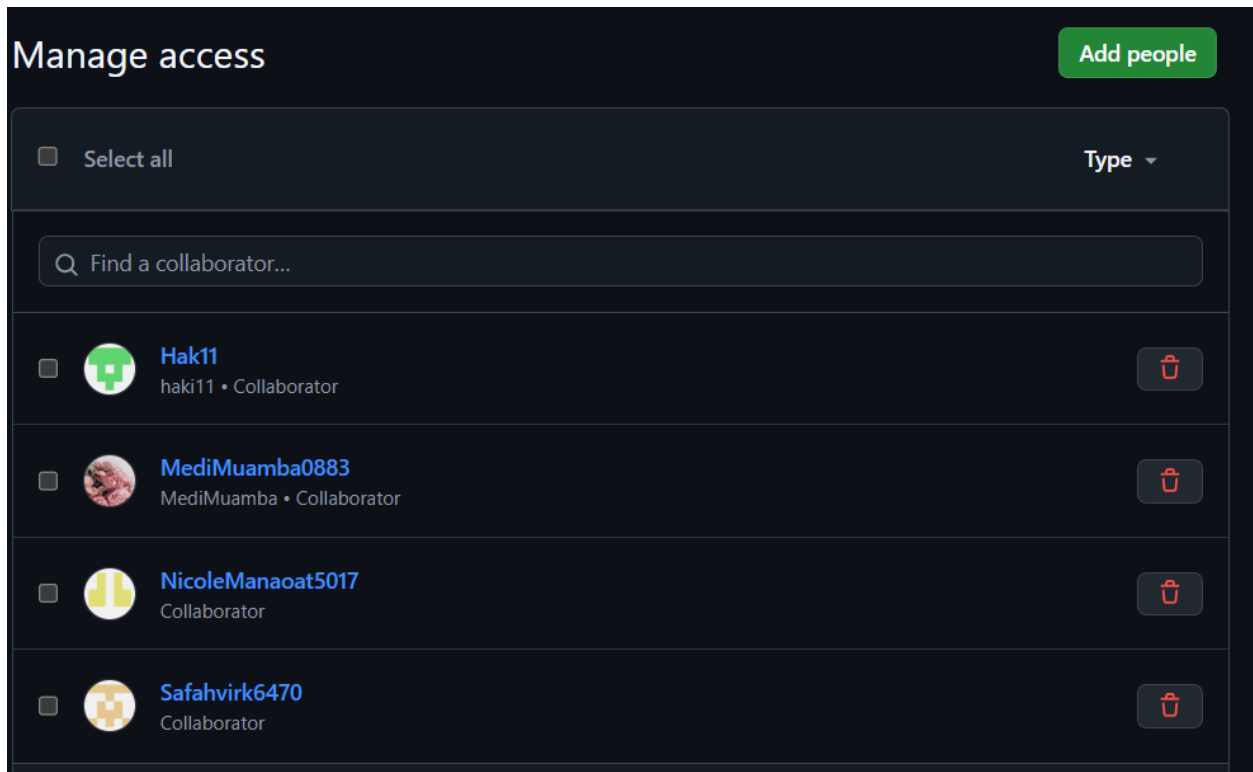
Medi Muamba Nzambi N01320883

Safah Virk N01596470

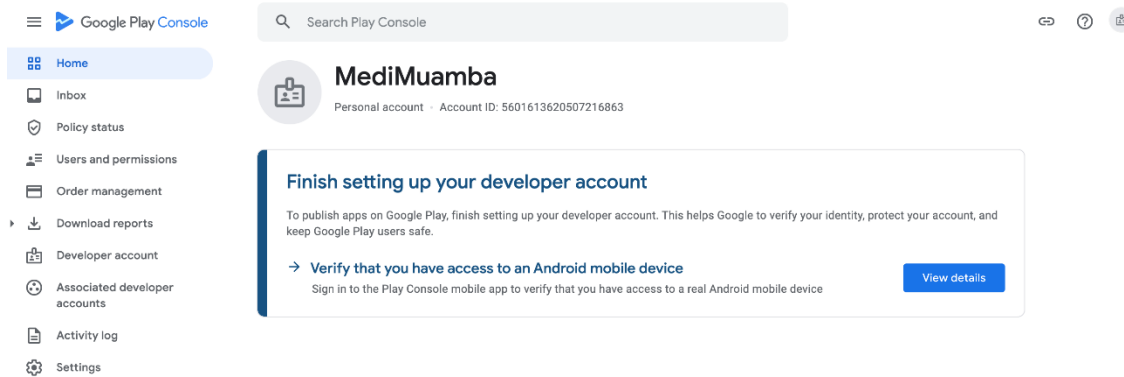
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GitHub Repository



Google Play Account



PROJECT BACKGROUND & DESCRIPTION

Project Goals & Final Vision

Goals: The goal of this project is to develop an Android application that monitors walk-in rooms availability on campus, displaying vacancy, occupancy, and environmental conditions in real-time. The system will use sensors to track room entry/exit, capacity, and monitor temperature and air quality for student comfort. Students will also be able to control the air conditioning in the room through an authentication process, open/close the door, and change the dimness of the light in the room.

Final vision: The final vision for this project is to create a seamless system where students can view real-time data on room availability and environmental comfort. The app will support a user-friendly interface organized by campus buildings and integrate with sensor-based systems to ensure accurate data. By combining occupancy tracking and environmental control, the app will enhance the overall study experience and improve comfort. Additionally, secure access to controls will ensure that only those in the room can make adjustments, preventing misuse from outside the room.

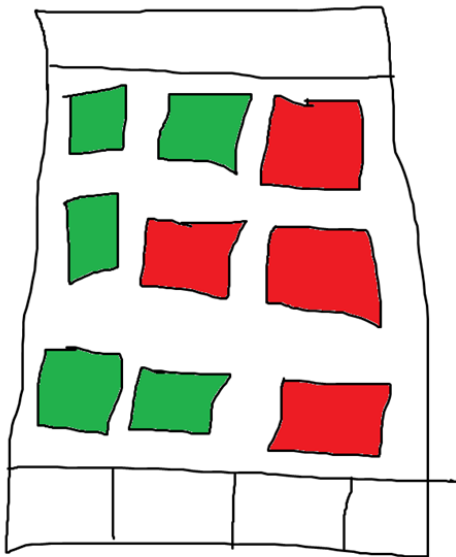
Software Aspect & Hardware

Software: The Android application will use sensors to track the number of occupants in the room, provide real-time environmental data, and offer control over the air conditioning system, door system, and light system. It will feature a Bottom Navigation system to allow users to switch between different buildings on campus, with each screen showing room availability and environmental data. The app will authenticate users via a code or QR code to allow air conditioning control only to students physically in the room. The app will communicate with a cloud-hosted database for storing and retrieving room data.

Hardware: Distance sensor: Tracks entry/exit for check-in/check-out. Human presence sensor: Counts the number of people in the room. Temperature sensor: Monitors the room's temperature. Air quality sensor: Measures air quality conditions in the room.

Screen flow

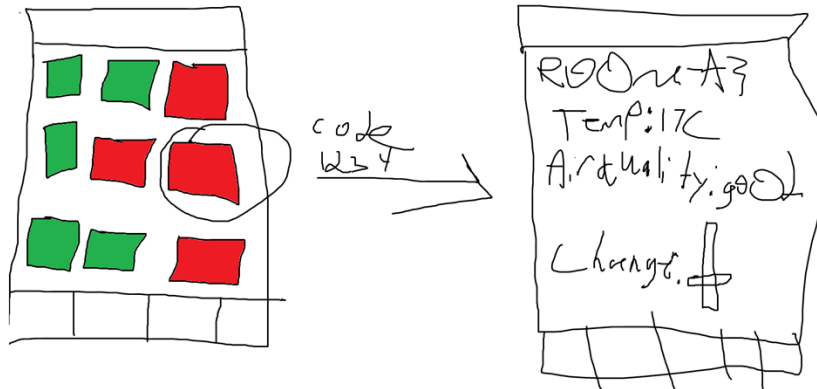
Firstly it will have a login screen, once the user logs in this is what the user will see:



Students will be able to see every walk-in room on campus, and it will either show it is vacant or occupied (green means vacant, red means occupied).

The Bottom-Navigation that we will be using in our app will be to swipe across different buildings. For example in building A, it has 7 rooms in total, and in building B, it has 9 rooms, and basically the rest for the other buildings.

For the occupied rooms, you will be able to click on them, and if you are the one who is in the room, you can enter a code to access its functionality. The code will be able to be seen if you are in the room itself. This is what it will look like:



Not everything is shown on the image itself but this is what you will be able to see and change:

- Can view the temperature and change it.
- View Air quality
- Ability to open/close the door
- Able to change the dimness of the light in the room
- Timer of how much time is left for you in the room

Feedback

The feedback we got was to incorporate air quality as it was a good thing to see and track, and we decided to implement that into our project.

Database

Will be using the database to read/write the following things:

- Read/Write rooms Vacancy, to be either Vacant or Occupied.
- Read Air Quality
- Read Temperature/Write what you want the temperature to be
- Read how many people are in the room
- Read/Write Check In/Check Out system
- Read/Write Door system
- Read Timer

Project Scope

Our goal for this project is to have a functional Android application that meets the requirements we want to meet which is, an app that monitors walk in study room availability and allows users to track that information in real time. Our scope will be with our deliverables. Each deliverable, we have a goal to meet and a certain part of the application to complete. For example, in deliverable 0, we began with brainstorming ideas for our project, so we know what we are working on, and deliverable 1 we began implementing the actual application screens and the layout of each screen. Our way of knowing that we are on track with this project is by going through our deliverable checklist and seeing what we are completing daily. The functionality of our application is proof for us that the project is moving along. Therefore, once we have a fully functional application, and we know that we can successfully go through each deliverable with no setbacks or error, we will know that our project is complete.

Integration

Our software components will be integrated with our hardware components in the following ways.

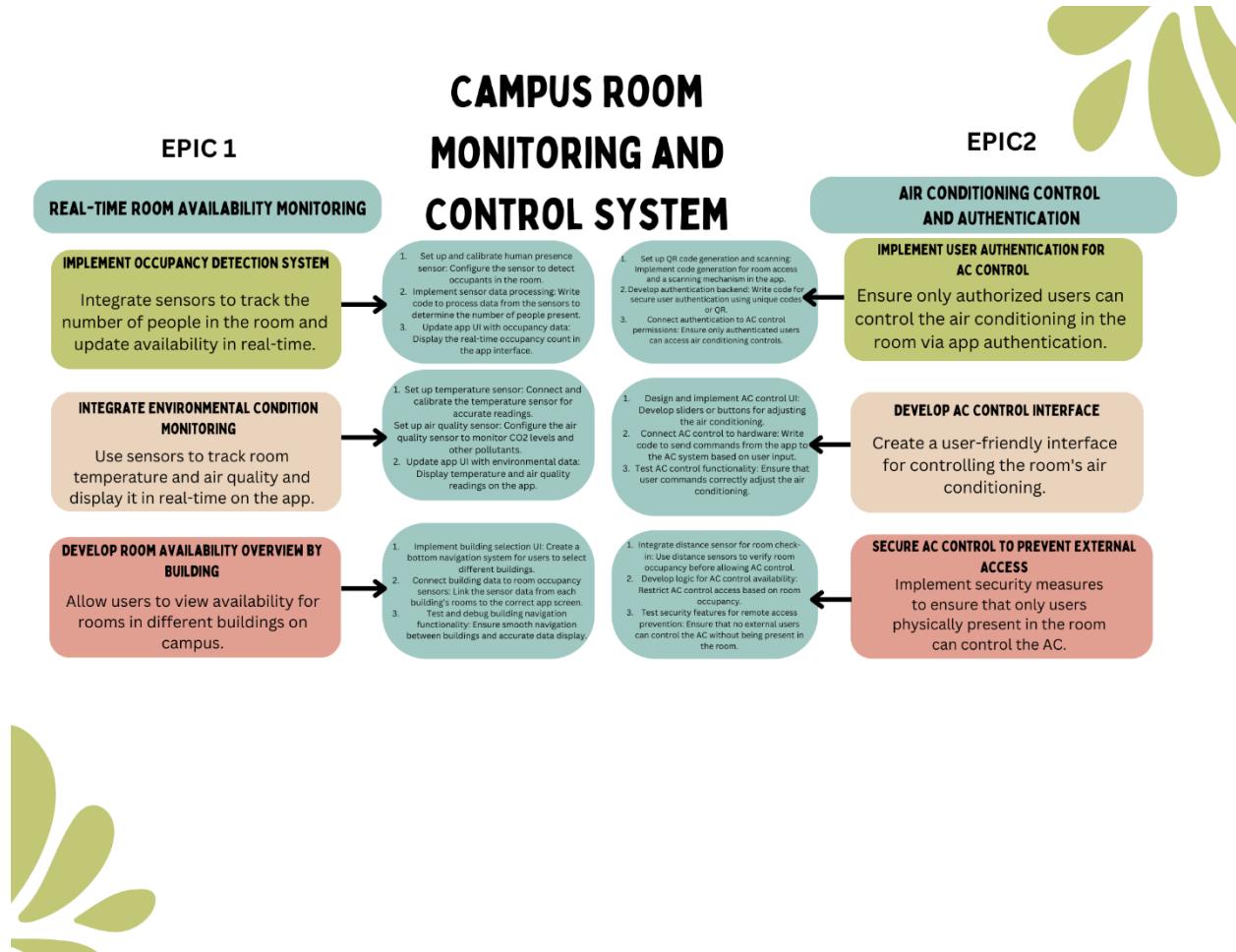
Hardware: Our human presence sensor will be used to track the number of people in a room, while our distance sensor will track entry and exit in the room, our temperature sensor will measure the temperature in the room, and our air quality sensor will monitor the air quality.

Software: Our Android application will include a screen that will allow us to view real time data of the occupants present in each room, as well as the room temperature, and air quality. Using the app, not only can users monitor all this information, but they can regulate the dimness of the lights, air conditioning system and navigate between different buildings on campus and see the same information for different study rooms. Using a distance sensor for the hardware component, access to the rooms will be made possible in the application using a code or QR code for authentication. This will allow a check to in/ check out system to ensure only students with a code on their application can access the room. The application will also show that the time in the room will be 2 hours. The sensors would be used in this case along with the check-in system in the application to ensure that.

Project Layout

The project will use Bottom Navigation. As shown in the screen flows section, the Bottom Navigation will be used to swipe across buildings to view all the rooms.

Theme, Epic and Stories



CENG-322 TEAM PROJECT CONTRACT

Team Name: TBD

Team Number: Group 2

Project Name: Smart Library Study Room

Management and Comfort System

Please negotiate, sign, scan and include as the first section in your Deliverable 1.

Please note that if cheating is discovered in a group assignment each member will be charged with a cheating offense regardless of their involvement in the offense. Each member will receive the appropriate sanction based on their individual academic honesty history.

Please ensure that you understand the importance of academic honesty. Each member of the group is responsible to ensure the academic integrity of all of the submitted work, not just their own part. Placing your name on a submission indicates that you take responsibility for its content.

Team Contract

Team Member Names (Please Print)	Signatures	Student ID	Github Id
Project Leader: Medi Muamba Nzambi		N01320883	github.com/MediMuamba0883
Mathew Anderson- Saavedra		N01436706	https://github.com/MathewAnderson6706

Nicole Chlea Manaoat		N01565017	https://github.com/NicoleManaoat5017
Safah virk		N01596470	https://github.com/SafahVirk6470

For further information read Academic Honesty Policy on <https://humber.ca/legal-and-risk-management/policies/search-by-students.html>.

By signing this contract, we acknowledge having read the Humber Academic Honesty Policy as per the link below.

<https://academic-regulations.humber.ca/2018-2019/17.0-ACADEMIC-MISCONDUCT>

Responsibilities of the Project Leader include:

- Assigning tasks to other team members, including self, in a fair and equitable manner.
- Ensuring work is completed with accuracy, completeness and timeliness.
- Planning for task completion to ensure timelines are met
- Any other duties as deemed necessary for project completion

What we will do if . . .

Scenario	Accepted initials	We agree to do the following
Team member does not deliver component on time due to severe illness or extreme personal problem	a	a) Team absorbs workload temporarily ____ d) Other:
Team member cannot deliver component on time due to lack of ability	a	a) Team reassigns component ____ b) Team helps member ____

Scenario	Accepted initials	We agree to do the following
		c) Team "fires" team member by not permitting his/her name on submission ___ yes d) Other:
Team member does not deliver component on time due to lack of effort	a	a) Team absorbs workload ___ b) Team "fires" team member by not permitting his/her name on submission ___ c) Other:
Team member does not attend team meeting	a	a) Team proceeds without him/her and will assign work to the absent member ___ b) Team doesn't proceed and records team member's absence ___ c) Team proceeds for that meeting but "fires" member after ___ occurrences ___
An unforeseen constraint occurs after the deliverable has been allocated and scheduled (a surprise test or assignment)	a	a) Team meets and reschedules deliverable ___ b) Team will cope with constraint ___ yes

Scenario	Accepted initials	We agree to do the following
		c) Other:
Team cannot achieve consensus leaving one member feeling "railroaded", "ignored", or "frustrated" with a decision which affects all parties	a	a) Team agrees to abide by majority vote ____ b) Team flips coin ____ c) Other:
Team members do not share expectations for grade desired	a	a) Team will elect one person as "standards-bearer" who has the right to ask that work be redone ____ b) Team votes on each submission's quality ____ c) Team will ask for individual marking and will identify sections by author ____ d) Other:
Team member behaves in an unprofessional manner by being rude or uncooperative	a	a) Team attempts to resolve the issue by airing the problem at team meeting ____ b) Team ignores behaviour ____ c) Team agrees to avoid use of all vocabulary inappropriate to the business setting ____ yes

Scenario	Accepted initials	We agree to do the following
		d) Team fires the team member.
Team member assumes or requests that his/her name be signed to a submission but has not participated in production of the deliverable	a	a) Team agrees that this is cheating and is unethical ____ b) Friends are friends and should help each other ____ c) That person name will not be put on the submission._
There is a dominant team member who is content to make all decisions on the team's behalf leaving some team members feeling like subordinates rather than equal members	b	a) Team will actively solicit consensus on all decisions which affect project direction by asking for each member's decision and vote ____ b) Team will express subordination feelings and attempt to resolve issue ____ c) Other:
Team has a member who refuses to participate in decision making but complains to others that s/he wasn't consulted	a	a) Team forces decision sharing by routinely voting on all issues ____ b) Team routinely checks with each other about perceived roles ____ c) Team discusses the matter at team meeting ____ yes