Deliverable #1

CENG-322

Secure Home Automation (Software)

By Future Home *(Team)

Development Team:

Zachary Learoyd (LRDZ0002)

Akash Muhundhan (N01420118)

Harpreet Cheema (std. #)

Krushang Parekh (N01415354)

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Team Contract

CENG-322 TEAM PROJECT

Team Name: Future Home
Project Name: Secure Home Automation

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 Member Names (Please Print)	Signatures	Student ID
Project Leader: Zachary Learoyd	Zachary Learoyd	LRDZ0002
Akash Muhundhan	Akash Muhundhan	N01420118
Harpreet Cheema		
Krushang Parekh	Krushand Parekh	N01415354

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) Team absorbs workload temporarily __ d) Other:
Team member cannot deliver component on time due to lack of ability		a) Team reassigns component __ b) Team helps member __ b) Team "fires" team member by not permitting his/her name on submission __ d) Other:
Team member does not deliver component on time due to lack of effort		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) Team proceeds without him/her and will assign work to the absent member __

Scenario	Accepted initials	We agree to do the following
		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) Team meets and reschedules deliverable __ b) Team will cope with constraint __ c) Other:
Team cannot achieve consensus leaving one member feeling "railroaded", "ignored", or "frustrated" with a decision which affects all parties		a) Team agrees to abide by majority vote __ b) Team flips coin __ c) Other:
Team members do not share expectations for grade desired		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) Team attempts to resolve the issue by airing the problem at team meeting __

Scenario	Accepted initials	We agree to do the following
		b) Team ignores behaviour __ c) Team agrees to avoid use of all vocabulary inappropriate to the business setting __ 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) 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		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) 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 __

Project Background and Description

GitHub Repo: *https://github.com/ZacharyLearoyd0791/SecureHomeAutomation*

Project Goals:

The goal of this project is to create a home automation system with security functionality. We aim to deliver an app that incorporates our hardware project, giving the user access to various sensor readings, routine/scheduled smart home tasks, register RFID keys for locking/unlocking doors with RFID sensor enabled doors, set internal house temperatures, turn on/off lights, plus more. The final vision should reflect a one-stop-shop for control of your smart home (using our hardware), controlling the most important features that consumers care about, without the hassle of multiple apps for different smart home products.

Software Aspect & Hardware:

Software: Android Studio, Python

Hardware:

We will be using multiple sensors to control our home automation system. The list down below is the sensor we will be using:

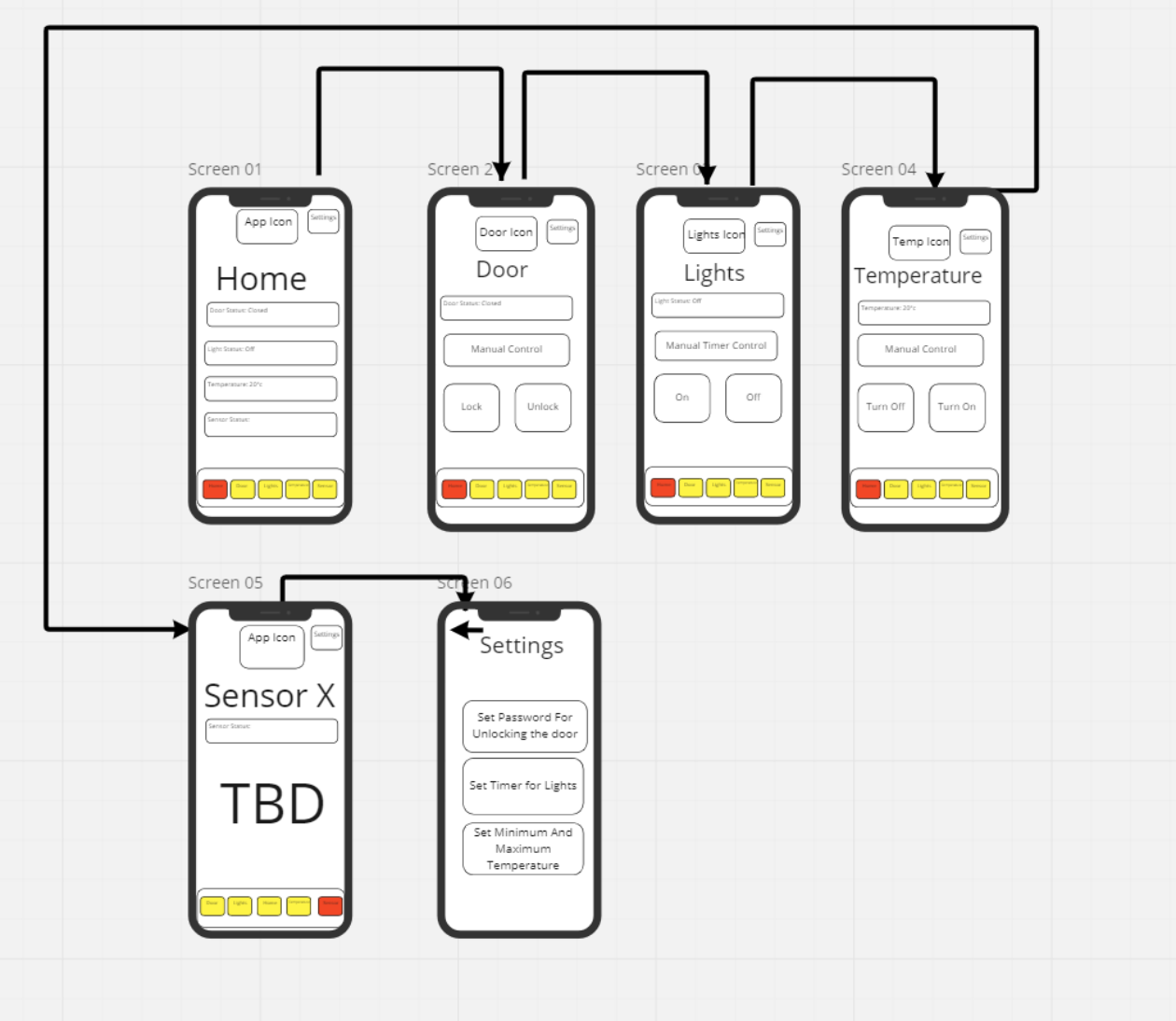
1. RFID: As a lock and unlock for the door.
2. BME280: As a temperature sensor to increase or decrease the temperature of the home.
3. Ultrasonic/Deciding with CENG 317 prof: Detect human presence and turns on the lights
4. Simulation Sensor: Krushang did not provide the sensor!

We will also use the Raspberry Pi 4 as the controller/ computer to control the sensors while the app will have access to the states and manual control of the system.

Feedback Process:

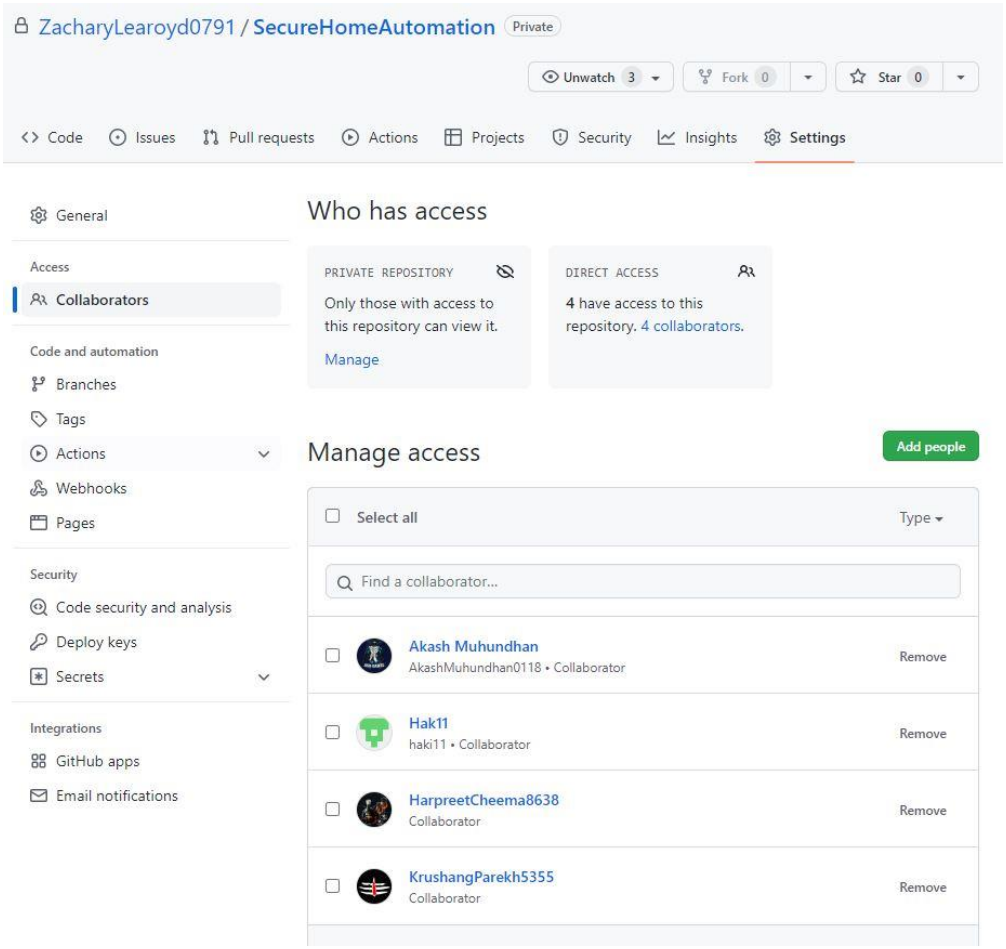
Any and all feedback will be taken into consideration during the development of our software. We will discuss potential changes/updates/fixes during our weekly meetings. New features or changes to existing ones will be adjusted for accordingly, in regards to our development timeline outlined in our gantt chart. Time permitting, we are willing to change some functionality completely if the feedback we receive comes at a great concern for consumers. Any and all feedback is welcomed, we aim to provide an experience that consumers will be happy with.

Screen Flows:



*****Above is a rough draft as to how the app will function from screen to screen *****

GitHub



GitHub Project Invitation Screen Shot

Project Scope & Theme

Theme

One-stop-shop to view and control all interconnected proprietary smart home devices developed by us.

Epic #1

Incorporate custom designed hardware to work alongside an app, allowing for quick, easy, and secure smart home control.

Stories

-Create multiple screens to display all currently connected smart home devices

-Allow for control of devices in as few user-clicks as possible for quick access

-Give the user access to shortcuts or routines that are set by the user to quickly adjust settings

Epic #2 (Potential)

Allow open-source api's to link with our app for even more smart home device control.

Stories

-Work with other developers to allow for api access in our app

-Allow customers to request which devices they wish to see added in the future

-Request customers or other developers to fill out a survey with feedback for features they wish to see