Deliverable 1

Quantum Quants

Housefy

Team 04

Team members

Member 1: Wenyuan Yu, Student ID: n01403697

Member 2: Kyrylo Lvov, Student ID: n01414058

Member 3: Artem Tsurkan, Student ID: n01414146

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1. Member's Info and Participation Table

Name	ID	Signature	Effort
Kyrylo Lvov	n01414058	Kyrylo Lvov	100%
Wenyuan Yu	n01403697	Wenyuan Yu	100%
Artem Tsurkan	n01414146	Artem Tsurkan	**90%**

2. Project Scope and goals that are targeted in this course

Project Scope
The scope of the project encompasses the following key areas:

Hardware Integration: This includes the setup and integration of a Raspberry Pi 4 Model B with several sensors including the CCS811 Air Quality Sensor, DHT22/AM2302 Temperature and Humidity Sensor, PZEM-004T Smart Energy Meter, and TSL2561 Digital Light Sensor.

Software Development: The software development component involves the creation of a Python script to be run on the Raspberry Pi, which collects data from the sensors and controls the connected devices. Additionally, an Android application written in Java will be developed, fetching data from an

InfluxDB database and providing a user interface for real-time data visualization and device control.

Database Management: The project includes setting up and managing an InfluxDB time-series database to store sensor data for analysis and visualization.

This Course's Goals:

Understand IoT Systems: Gain a comprehensive understanding of the design, development, and operation of IoT systems, especially in the context of home automation and environment monitoring.

Develop Programming Skills: Improve proficiency in Python and Java, developing both a Python script to collect and manage sensor data and a Java-based Android application for user interaction.

Learn Database Management: Acquire experience with InfluxDB, learning how to manage a time-series database, store sensor data, and retrieve data for analysis and visualization.

Hardware Integration: Learn how to integrate various hardware components such as sensors, microcontrollers, and devices in a coherent IoT system.

Develop Problem Solving Skills: Enhance problem-solving skills by overcoming challenges during the hardware setup, software development, database management, and data visualization stages.

Project Management: Gain practical experience in managing a project from conception to completion, including planning, execution, monitoring, and final presentation.

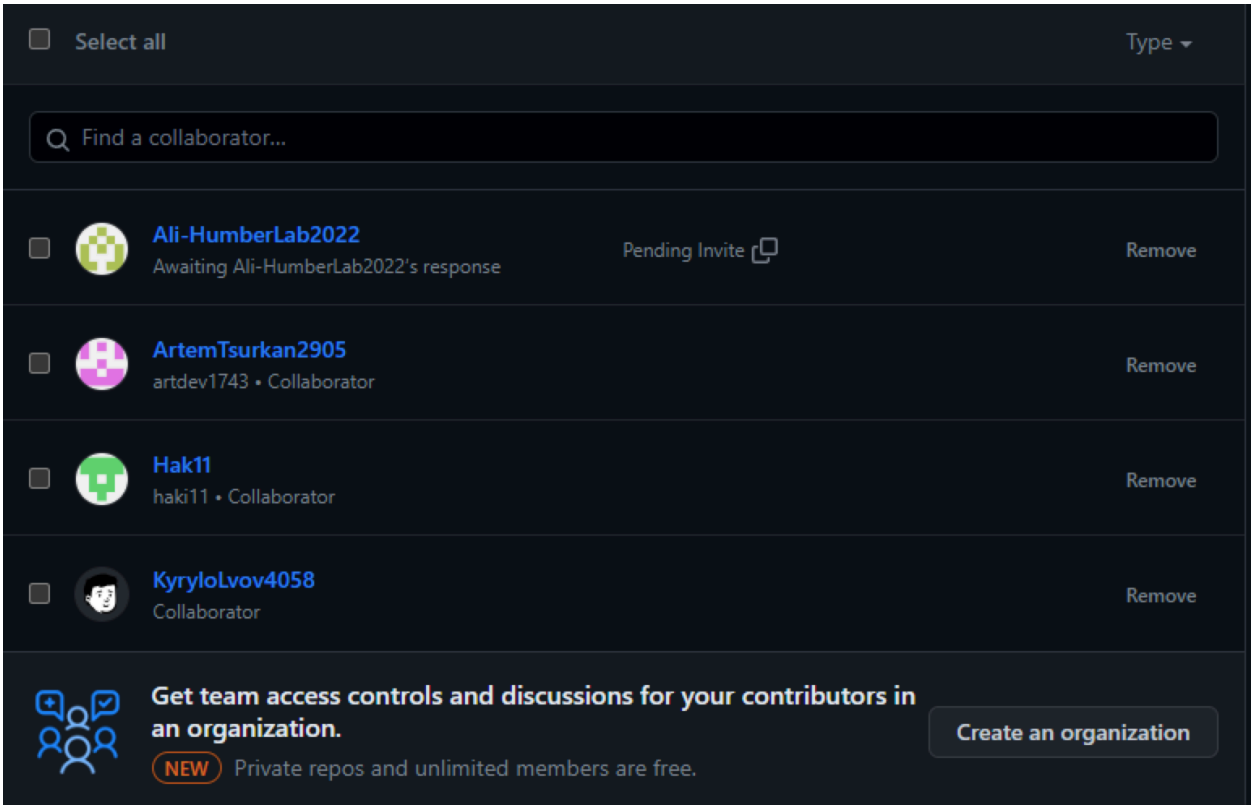
3. GitHub Repo Link and Strategy Explanation

https://github.com/WenyuanYu3697/housefy

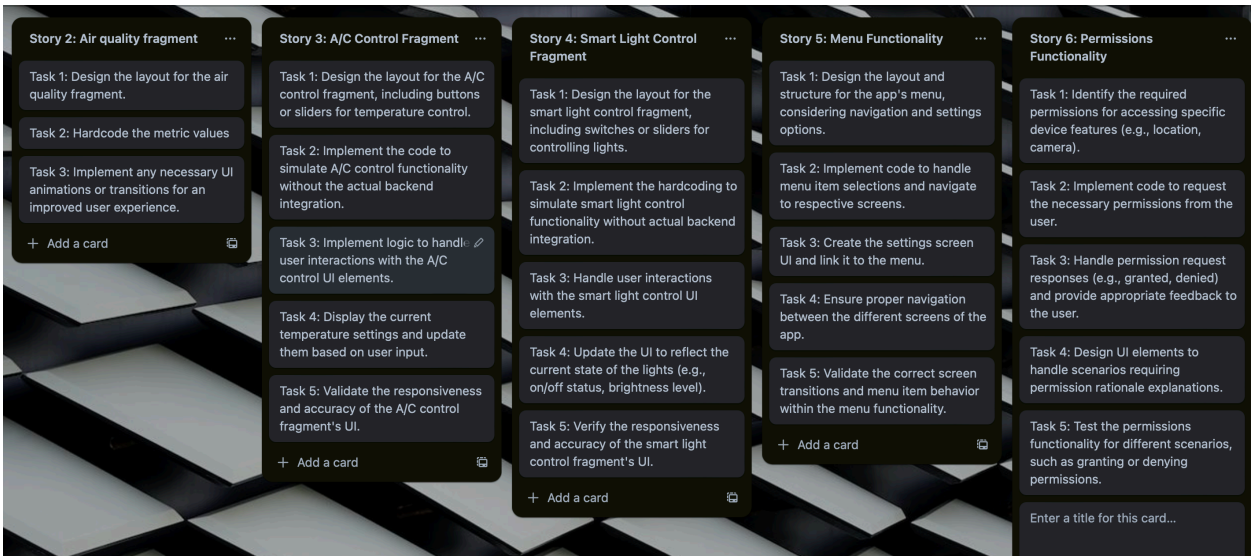
Our github strategy is the following:

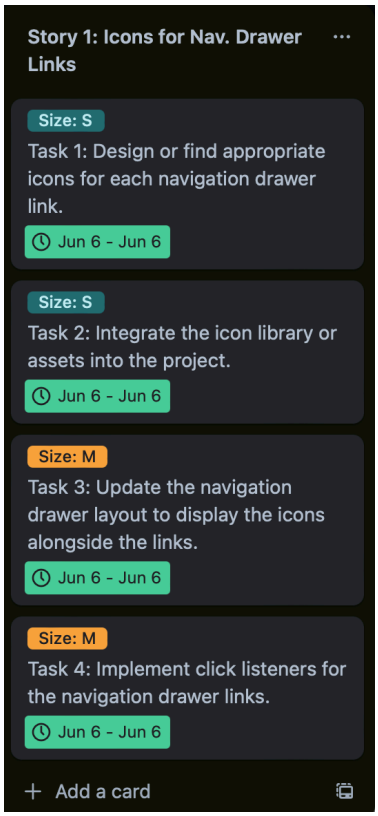
We develop our app by creating a new github branch for each new feature that we implement. After each new feature is “Done” as per the DoD (described further in this document), it is then merged to Master.

4. Screenshot of the invitation of the Hardware Professor



5. Screenshot of the Table with Stories and breakdown of Tasks, with start/end date, size and priority



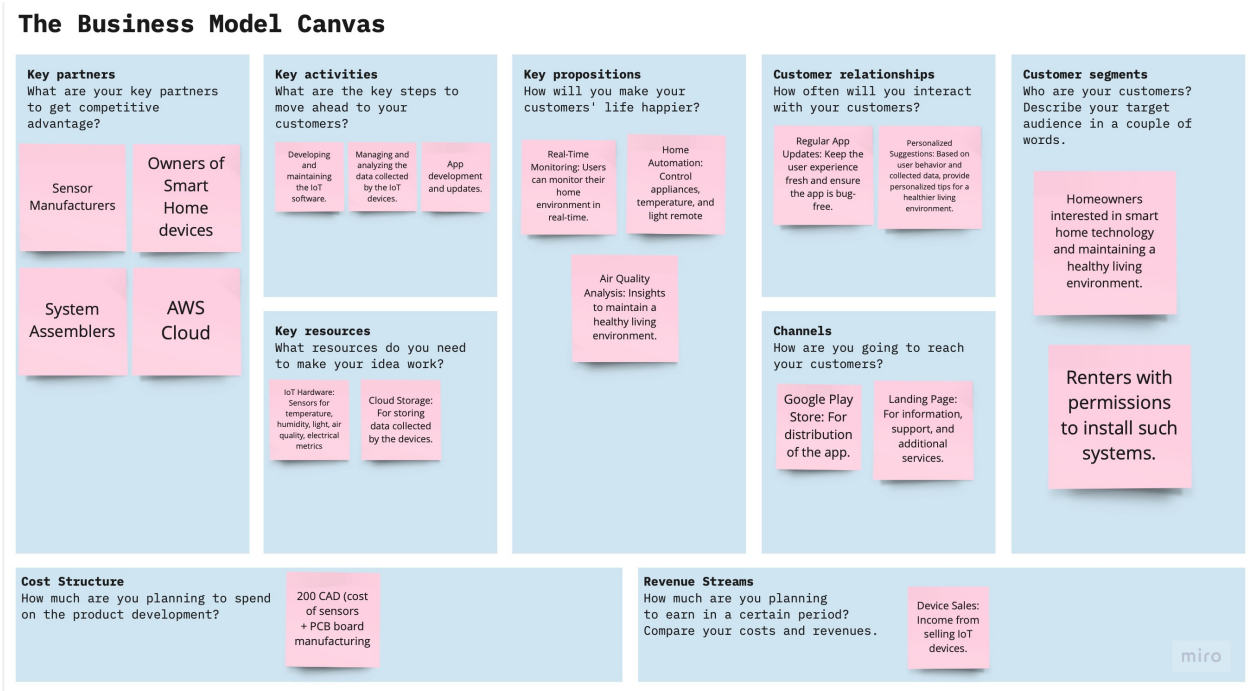


6. Meeting the DoD criteria explanation for the completed tasks, plus the actual DoD table itself

Before marking each task as “Done”, it was evaluated if it meets our Definition of Done, which is outlined below:

Our Definition of Done (DoD):

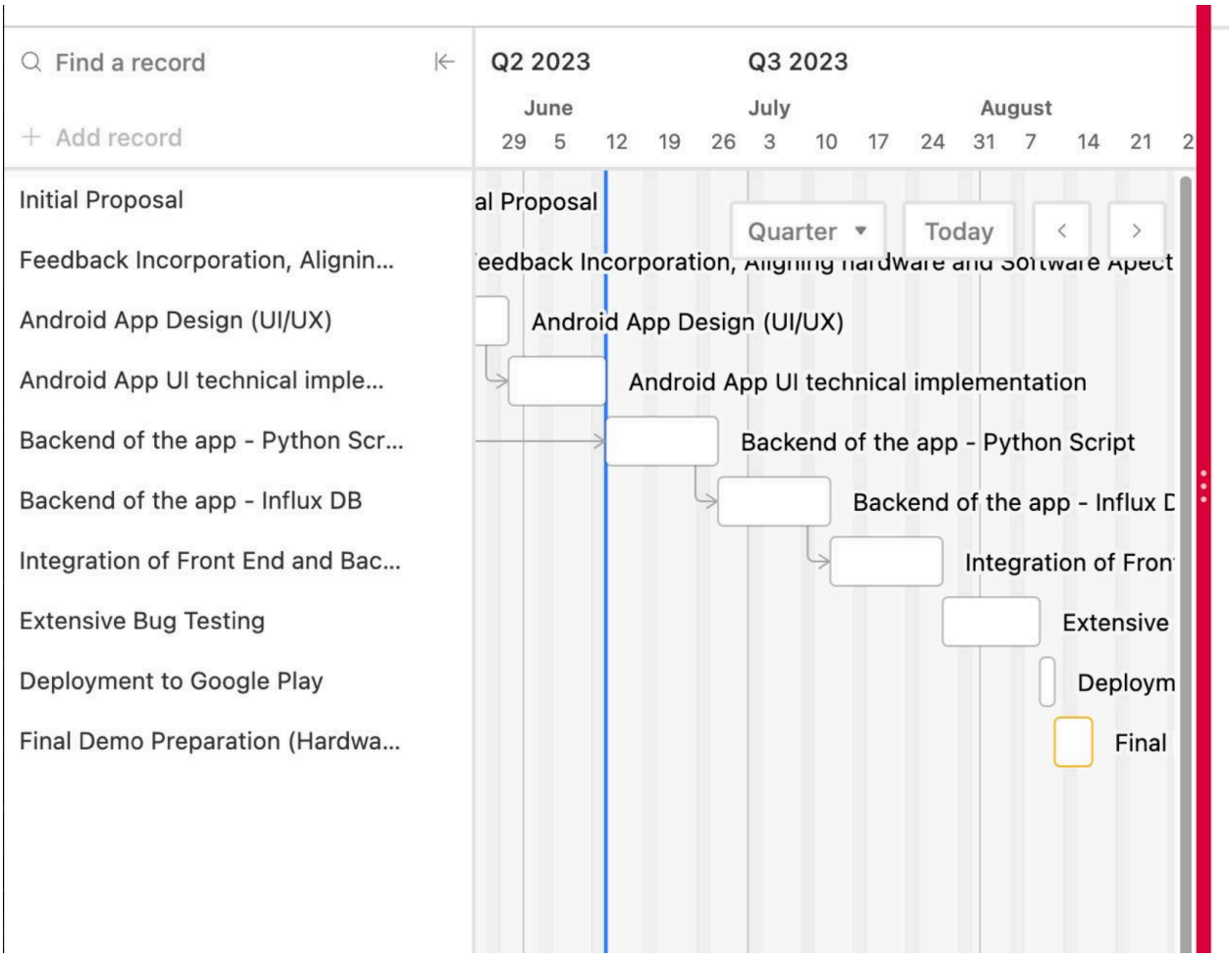
1. For Design Tasks:
    1. The team has reviewed and agreed to proceed with the design of an element/screen etc. that is being proposed
2. For Coding Tasks:
    1. The code runs smoothly, without errors. The purpose of this line is to remove “Testing” from the task lists, because everyone can click “Run” and see if their code runs.
    2. Integrated, that is the code can run together with other elements and features of the app that have already been developed without conflicts.
    3. The code has been reviewed by all team members and every team member has agreed that the code is meets the criterion outlined above and is ready to be pushed to Master.



7. Business Model Canvas, with all 9 fields clearly showed and explained

8. Gantt Chart with main milestones and work progress (min.10 components and timelines, with focus on main components)

https://airtable.com/embed/shrCfZMXHG7mRPXDf?backgroundColor=red



9. Record of Daily Stand-ups

https://www.notion.so/Deliverable-2-763fafcd414d4eb6b09fa25558cb0c53