# MEETING 5 OF GROUP SYNDICATE

## Attendees:

Vidur Somaru

Shravan Ramjathan

Leigche Jaikarram

Shivar Tuplah

## Meeting Times:

Date of Meeting: 17th March 2025

Start of Meeting: 19:00

End of Meeting: 20:30

Duration of Meeting: 1 hour, 30 minutes

## Purpose of Meeting:

During Meeting 5, our group had the opportunity to engage with Leigche, who previously contributed to the Smart-Hydro Project last year. He provided us with an overview of his work and findings from the previous year, offering valuable insights to help us better understand the scope and foundation of our work for this year.

### Meeting Summary

During our discussion, we addressed several key aspects of our project, focusing on optimizing storage, selecting suitable programming languages, refining application architecture, and improving system functionality.

#### Image Transmission & Storage Optimization:

* Instead of implementing a live video feed, we decided to use images for remote monitoring to conserve storage space.
* To further optimize storage, we plan to send images in binary format.
* Shravan suggested an alternative approach using decoded strings, which we will explore to determine the most efficient method.

#### Language Considerations:

* We discovered that the previous team used three languages. To enhance inclusivity and accommodate diverse cultural backgrounds, our group decided to incorporate additional languages.

#### Application Functionality & Remote Monitoring:

* Leigche informed us that his current application does not support simultaneous operation on two different Wi-Fi networks for remote monitoring.
* However, he provided us with code-based comments to help us overcome this limitation.

#### Technology Stack & Development Tools:

* Leigche recommended developing the new application using **React**, as it offers a more responsive and high-performance user experience.
* While he originally built the previous version using **Android Studio** with **Kotlin**, our implementation will require JavaScript.
* Additionally, we are required to use **AndroidSpace** as part of our development environment.

#### Database & Authentication:

* The current system utilizes **Firebase Authentication** for user login and security purposes.

#### Tunnel System & Hardware Components:

* We discussed the tunnel system with Leigche, who provided valuable insights into its design and implementation.
* The team obtained microcontrollers the following day, which will be crucial for hardware integration.
* The previous version of the system was not field-tested, so we will need to conduct thorough testing to ensure reliability.

#### Development & Implementation Priorities:

* Leigche emphasized that we will need to build and design the tunnels using our own materials and initiate **DevOps** practices to streamline development.
* The top priority of the project is to develop and refine the **Arduino code using C++** for microcontroller operation.
* The application architecture will be built using **Jetpack Compose** instead of **Android Studio Views** to improve modularity, making it easier to modify and explain.

Overall, this meeting provided us with a clearer understanding of our project’s direction and necessary adjustments. Moving forward, our primary focus will be on software and hardware integration while ensuring scalability and efficiency.