

Sprint 4 Review meeting - 7.4.2025

Team

- Vladimir Piniashin - **Scrum master**
- Edvard Nivala - **Developer**
- Johannes Mäkinen- **Developer**

Objectives

Suunnitella projektityö ja hanki palautetta suunnitelmasta projektin omistajalta

Plan the upcoming project work and receive feedback from the project owner. Work on database API connection (Google Pub/Sub or Google Firebase).

Achievements

1. An adding a measurement timestamp has been Implemented (sets the timestamp at the time the sensor data is saved)
Responsible: Edvard Nivala (), Vladimir Piniashin (1 hours)
2. Meet with Josia to discuss project differences and ensure minimal similarities.
Responsible: Everyone (1 hour)
3. A battery monitoring has been Implemented
Responsible: Vladimir Piniashin (8 hours)
4. A timer for program start has been implemented that takes into account the execution time of each start so that the scheduled number of devices starts is always executed per day
Responsible: Vladimir Piniashin (5 hours)
5. Stack overflow often occurred when sending long messages. The logic of message generation was changed - Stack overflow error did not appear anymore
Responsible: Vladimir Piniashin (10 hours)
6. Implemented time synchronization at first boot during modem initialization
Responsible: Edvard Nivala (2 hours), Vladimir Piniashin (2 hours)
7. Researched and attempted to implement Google Pub/Sub connection to project. Pub/Sub's requirement for OAuth2.0 Token presented trouble because of its size and complexity. The final takeaway was JWT generation and Time synchronization implementations compatible with Firebase solution.
Responsible: Edvard Nivala (37 hours)
8. Researched and set up a Firebase project for our project. Google service account and general Firebase project configurations.
Responsible: Edvard Nivala (5 hours)
9. Implemented Firebase Cloud Firestore functions for our project. HTTP post request successfully with mock –data. Firestore certs, Firebase project API data, JSON web token (JWT) -generation, Postman tests etc.
Responsible: Edvard Nivala (16 hours)

10. Research options for improved error handling in case of problems with SIM card detection or connection. Manage reasonable retries of connection within the limits of power consumption.

Responsible: Johannes Mäkinen (4 hours)

11. Create a mock-up graph for web GUI that could be implemented as an additional tool for data visualization and plan what forms of visual aid would be most suitable for the gathered data.

Responsible: Johannes Mäkinen (5 hours)

Time Spent:

- Edvard Nivala: 61 hours
- Johannes Mäkinen: 10 hours
- Vladimir Piniashin: 26 hours

Plans for the Next Sprint

1. To implement Firestore connection with real data
2. To define web GUI functionalities
3. To develop logic for error handling in case SIM card isn't detected
4. Stack Test the device performance when transferring real data in Firestore on a long period of time

Observations and Issues

The team successfully completed all tasks.

Summary

The Sprint Review was successfully conducted and all objectives were achieved.