Individual Weekly Report

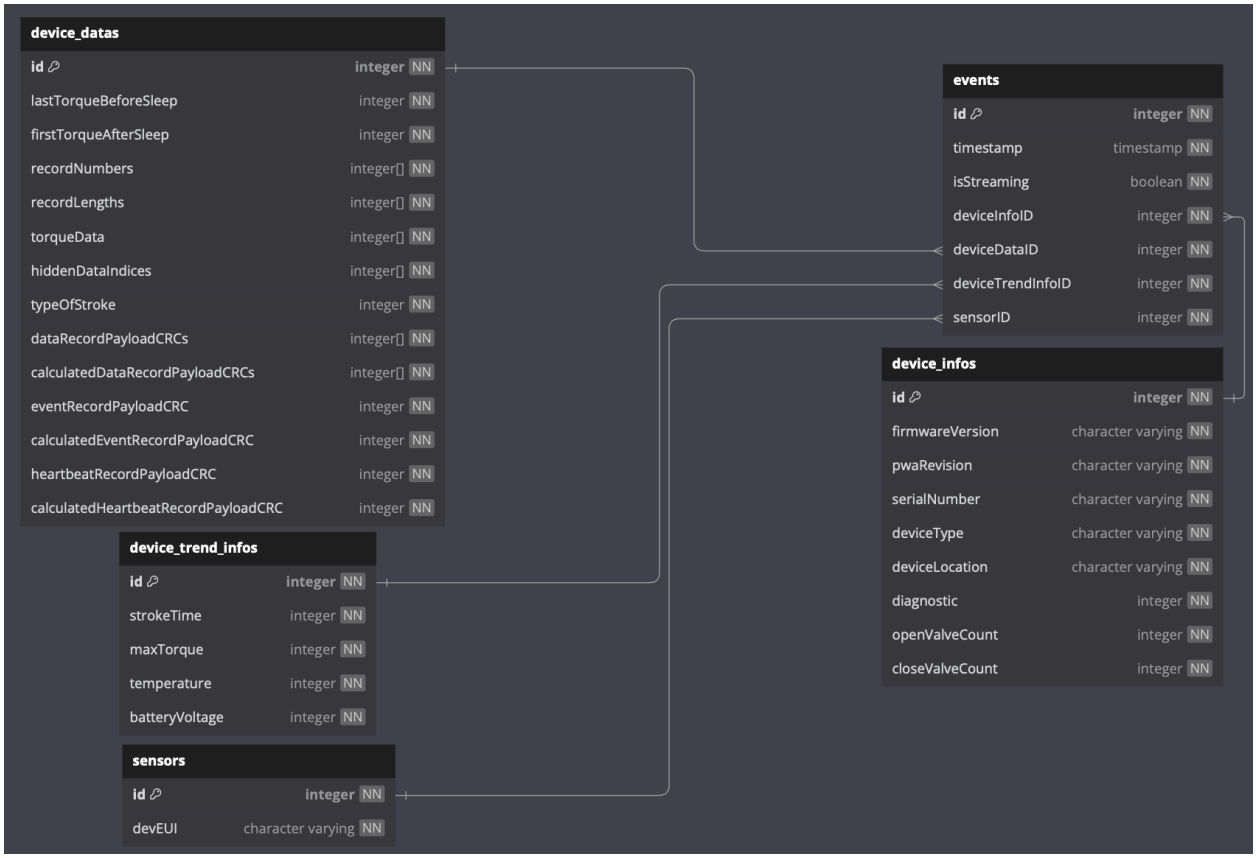
Name: Josh Werner
Team: Bray IIoT Smart Solutions
Date: 02/03/2025

Current Status

1. What did you **personally** work on this past week?

Task	Status	Time Spent
Related Works - Project Report	Completed	1hr
Considering Software Developer Additions	In Progress	2hr
Getting old web-application to run	Completed	1hr

Include **screenshots/graphics** to illustrate what you did this past week:



The adoption of Industrial Internet of Things (IIoT) technology has been a key player in enhancing industrial efficiency through remote monitoring, predictive maintenance, and optimized data transmission. Immerman (2023) highlights the financial burdens associated with unplanned downtime in manufacturing, specifically referencing how predictive maintenance based on live data and historical data can mitigate many of these losses. While lacking empirical case studies, this research argues for the validity of data-driven maintenance strategies, aligning with our project's goal of implementing a data collection system. Similarly, Yang et al. (2022) propose an IoT-based valve monitoring system specifically designed for remote environments, focusing on secure data transmission. Though this is mostly focused on design and not implementation, their work provides insight into an remote, energy-efficient, smart monitoring system.

Wireless Sensor Networks (WSNs) take a step further to enhance industrial monitoring, as discussed by Akhondi et al. (2010), who outline their role in equipment monitoring, safety management, and operation efficiency in the oil and gas industry. This paper reinforces the significance of wireless data collection, a key aspect of our project. Gribi (2023) delves deeper into this discussion by evaluating LoRaWAN as a cost-effective, long-range, and low-power wireless protocol that fits perfectly with IIoT applications. It compares LoRaWAN to alternatives and highlights the features of LoRaWAN that make it ideal for smart industrial applications.

2. What problems did you run into? What is your plan for them?
   Currently the web-application is hard to develop for because we cannot feasibly see how it works since we have no real-time data, we need to get the tests the previous team designed to work so we can see what these should look like.

3. What is the current overall project status from your perspective?
   I think we are finally starting to make progress forwards, or at least have the ability to make progress forwards.

4. How is your team functioning from your perspective?
   The team is functioning fine, I think arguably everyone needs to be more dedicated to the project. This includes myself but since we are a bit behind we need to really make a strong effort.

5. What new ideas did you have or skills did you develop this week?
   Had to learn how to use the flask backend of the web-application. Using docker to run the different project containers.

6. Who was your most awesome team member this week and why?
   Alex Kearney, he updated his R-PI to be our backend server for the project.

Plans for Next Week

What are you going to work on this next week?
I am going to be working on understanding and making any necessary changes to the backend of the web-application. Making an effort with understanding the backend to help provide support to frontend updates. Currently we cannot understand how the frontend works because we have no data, so I will also try and write a simple script to populate the database.