

## Individual Weekly Report

**Name:** Josh Werner

**Team:** Bray IIoT Smart Solutions

**Date:** 02/17/2025

### Current Status

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

Task	Status	Time Spent
Work Breakdown Structure	Completed	30m
Experimented with web-application	Completed	1hr
Individual Reference Deep Dive 2	Completed	2 hr
Tech Stack Install	Completed	~15m

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

## Work Breakdown Structure (WBS)

### 1. Planning and Initial Design

#### 1.1 Learn about prior work

- 1.1.1 Discuss prior project with Bray
- 1.1.2 Understand the current project implementation

#### 1.2 Formulate hardware implementation plan

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- 1.2.1 Create design plan for hardware components
- 1.2.2 Define required functionalities

#### 1.3 Critique and re-design software elements

- 1.3.1 Experiment with current software
- 1.3.2 Identify gaps and areas for improvement
- 1.3.3 Plan and re-design software dashboard
- 1.3.4 Plan updates for the database

#### 1.4 Design testing vectors

- 1.4.1 Create hardware testing scenarios
- 1.4.2 Develop firmware test vectors
- 1.4.3 Plan software validation tests

### 2. Development and Sensor Integration

#### 2.1 Hardware implementation

- 2.1.1 Integrate the fugitive emissions sensor into the prototype

#### 2.2 Firmware development

- 2.2.1 Write firmware to connect sensor and transmitter
- 2.2.2 Test firmware independently

#### 2.3 Hardware-firmware integration testing

- 2.3.1 Simulate conditions to trigger the sensor
- 2.3.2 Validate sensor-transmitter communication

## **2.4 Software implementation and updates**

- 2.4.1 Implement new dashboard features
- 2.4.2 Update and optimize database functionality
- 2.4.3 Iterate on the software design based on feedback

## **3. System Integration and Testing**

### **3.1 Component integration**

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- 3.1.1 Connect hardware, firmware, and software components
- 3.1.2 Establish communication between transmitter and server
- 3.1.3 Display real-time data on the dashboard

### **3.2 User Acceptance Testing (UAT)**

- 3.2.1 Conduct UAT for hardware functionality
- 3.2.2 Conduct UAT for firmware operations
- 3.2.3 Conduct UAT for software usability and reliability

## **4. Finalization and Reach Goals**

### **4.1 Deliverables completion**

- 4.1.1 Address remaining tasks from earlier phases
- 4.1.2 Verify all required deliverables are met

### **4.2 Additional sensor integration (reach goal)**

- 4.2.1 Analyze prior project integration potential
- 4.2.2 Design compatibility features
- 4.2.3 Implement and test additional sensors

2. What problems did you run into? What is your plan for them?

Individually, I did not run into any problems. As a team we are still waiting on documentation to sign from Bray in order to progress with the project in certain areas though.

3. What is the current overall project status from your perspective?

The current status is that we are still a little behind but we finally have some hardware, we finally have some code, and we finally have an opportunity to start making progress. This is a huge step forwards and hopefully we can get that documentation from Bray so we can work on all components of the project.

4. How is your team functioning from your perspective?

I don't think it is any different from prior weeks, I think we are doing fine. I would argue that all of us are a little stressed due to the delay in getting hardware/software. This is also compounded by the fact that we are getting into the meat of the semester so we all have individual responsibilities for other classes along with our team deadlines. Ideally though, this phase will pass and we will continue working efficiently.

5. What new ideas did you have or skills did you develop this week?

We went to visit Bray to get our hardware and learn more about the project. From this meeting we came up with some new potential additions to the project such as using the plug and play feature of the device to add rigor. We plan to design the firmware in such a way that it can communicate with a wide variety of sensor devices and accurately send information in that way.

6. Who was your most awesome team member this week and why?

Probably Matthew again, he has been our main line of communication between Bray and therefore even though we are in a bit of a dry period, he is working hard to make progress. Along with this he is also our communication with the previous semester team Michael, and the information we have gathered along with resources is extremely helpful.

### Plans for Next Week

What are you going to work on this next week?

This next week I will continue working on the project report with its related works section, along with this the team will finally make our first steps in the project. So I will be participating in that, likely starting to evaluate and write code for our web-application we are developing. This week I have many external responsibilities with multiple exams so it is feasible that I am going to have a lesser contribution until I finish these exams.