Individual Weekly Report

Name: Josh Werner
Team: Bray IIoT Smart Solutions
Date: 02/10/2025

Current Status

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

Task	Status	Time Spent
Implementation Schedule	Completed	1hr
Budget	Completed	20m
Peer Review and response	Completed	30m
Group Reference Search	Completed	1.5hr

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

A.4 Implementation Schedule (Josh)

The project will follow a **parallel development approach,** ensuring that both hardware and software components are planned and developed simultaneously. Phase 1 will focus on the design and planning of both aspects. In Phase 2, hardware/firmware and software will be implemented separately. Phase 3 will bring both components together to form the complete system. Integration will be prioritized as early as possible, so once both parts are ready, this step will be completed immediately.

Note: The project schedule is a work in progress and is subject to change as the project progresses.

Project Schedule

		Goal/Task	Description	Category
	Phase 1 (02/3 - 02/16)	Learn about prior work done	Discuss prior project work with Bray and learn about the current project	Planning
		Formulate plan for new hardware implementation	Based on the information received, create a design plan for the hardware components	Planning / Design
		Experiment with current software implementation	Test the old software functionality with criticism in mind	Testing

	Plan and re-design software elements (dashboard, database, etc.)	Consider critique from the task above along with planning the new required elements	Planning / Design
	Design tests	Design test vectors for hardware, firmware, and software to be used in development.	Design / Testing
Phase 2 (02/17 - 03/02)	Implement the new sensor	Implement the fugitive emissions sensor in the prototype	Development

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	Write custom firmware	Write the firmware to connect the sensor and the transmitter	Development / Testing
	Test hardware-firmware integration	Create conditions to trip the sensor and test the connection with the firmware	Testing
	Implement new and update old software elements	Implement the changes planned in the last phase and iterate on the previous design	Design / Development
Phase 3 (03/03 - 03/16)	Integrate hardware-firmware and software components.	Connect the transmitter and server to display real time data values	Development / Testing
	User Acceptance Testing	UAT of all three new components	Testing
Phase 4 (03/17 - 03/30)	Miscellaneous	Finish any remaining unfinished tasks for required deliverables	
	Additional sensor integration	If time permits, attempt the reach-goal, essentially integrate the previous project with this one	Testing / Design / Development

A.6 Budget (Josh)

Hardware and Software Costs					
Item	Description	Purpose	Quantity	Unit Price (USD)	Total Price (USD)
Valve	Bray Flow-Tek F15		1	$500.00*	$500.00
Custom PCB	Must include PIC16F1826 Microchip and other components	Interprets the data sent by the control box and sensors.	3	$5.00*	$15.00
Control Box	Provides manual or automatic, timed control of the valve. Custom made.	Allows users to control when the valve should open or close.	1	$20.00*	$20.00
LoRa Radio	Custom made.	Transmits sensor data to the gateway with the LoRa protocol.	1	$50.00*	$50.00
Air Compressor	Husky 1 Gal. 135 PSI Portable Electric Quiet Air Compressor	Required by the actuator to turn the valve.	1	$169.00	$169.00
MPLab ICD 5		Programmer required to flash firmware onto the microchip.	1	$399.99	$399.99
Multitech Conduit 3000 IoT Gateway	Model: MTCDT3AC	Receives data from the LoRa radio and allows data to be forwarded.	1	$1500.00*	$1500.00
MPLab IDE		Development platform for firmware.	1	Free	Free
MPLab XC8 PRO Compiler	Compiler requires monthly subscription	Compiler for the firmware.	3	$43.95	$131.85
Fugitive Emissions Sensor	Sensor that detects CO2/O2 gas.	New sensor needed to be implemented.	1	(Undetermined)*	(Undetermined)
				Total Price	$2,785.85

* Estimated value. Products may be custom made, not sold individually, or publicly sold.

2. What problems did you run into? What is your plan for them?
   Currently we don't have access to the technology so writing out a budget was difficult, I decided that the best course of action would be to use the last semester's project as a basis for our budget and when we get the necessary resources we can add/remove components to fit out requirements.

3. What is the current overall project status from your perspective?
   We are making progress but we are still behind, we still need Bray to fulfill their end of the sponsorship and provide us with the necessary resources so we can continue with the project. Though, since we met with them, we can make some initial plans for implementation which will be a bit helpful.

4. How is your team functioning from your perspective?
   We are working well together, there has yet to be any negative experiences from my perspective. I think everyone is committed to the project and its success.

5. What new ideas did you have or skills did you develop this week?
   Insight into the project from our initial meeting with Bray has led to a greater understanding of the project. It has helped me personally in my own idea creation as I can now make claims and design ideas that CAN be used.

6. Who was your most awesome team member this week and why?
   Matthew Livesay, he has put a great effort into communicating with Bray. He set up our meeting with them, led the meeting by asking questions and taking notes and has generally been a great team player with the whole team's success in mind.

Plans for Next Week
   What are you going to work on this next week?

This week will mostly be spent planning for when we receive the hardware and software access. I will be planning the new software components and considering potential updates with my team. Along with this I will be designing the work breakdown structure and assisting with the Gantt chart.