

## **Team 25 (Spoil Sense) Contract Fulfillment**

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### **Problem Goals:**

During the start of the semester, we outlined several hardware and software goals related to spoilage detection and wireless communication between the internal and external modules. Overall, we are satisfied with the goals we set and were able to meet. Although we had to make some pivots along the way regarding the specifications, overall we were able to meet our goals. Regarding hardware, we changed our sensor from an ethylene sensor to an volatile organic compound sensor and were able to implement this for our needs. We are also able to wirelessly communicate from internal to external modules, and alert the user. As a whole, we were able to meet the goals we set out for ourselves.

### **Expectations:**

Our team set out four main expectations to keep ourselves accountable: communication, meeting deadlines, accountability, and constructive criticism. As a team, we did an excellent job communicating with each other. Additionally, we met all deadlines that we set out for ourselves. Good communication was pivotal to ensure we complete our work within the given time frame of the deadlines. We also held each other accountable for the work that was assigned to each other. Everyone played a role, and it was important for everyone to get their work done and reach out if they needed help and we were able to do this. Lastly, we welcomed constructive feedback. Even though everyone played a role, it was still on the others to provide feedback to ensure we met the expectations set out so we can achieve our goals.

**Roles:**

Azim was the lead on hardware design and sensor integration. Ensures that the sensor array is functioning and properly calibrated. Vikram was the lead on software development. Responsible for programming the microcontroller, integrating wireless communication, and ensuring data accuracy. Sarthak was the lead on project management and system testing. Coordinates timelines, documents progress, and tests the system for reliability and usability. Spends equal time on software and hardware tasks.

**Agenda:**

Azim took charge of establishing the agenda for each meeting, ensuring all essential topics were addressed and progress was monitored. Sarthak handled decision-making responsibilities, with decisions made through consensus. If consensus could not be achieved, the majority determined the outcome. Vikram maintained a detailed record of all meetings, documenting key decisions, progress updates, and action items.

**Team Issues:**

The main issues we faced in our project was selecting a sensor for spoilage detection. We moved off our initial ethylene sensor because the expected arrival date of the sensor did not align with our time frame. This resulted in a pivot that we handled accordingly. We updated our design documentation, modified our PCB and let all relevant parties know of the decision to swap the ethylene sensor for a volatile organic compound sensor. This change did not cause any additional issues as we followed the guidelines established in our team contract.