

## Automating the Script and Managing Storage

### November 26th:

I worked on automating the system to ensure the Python script runs on boot. I learned how to configure systemd to run the script automatically, but I faced some challenges with paths and permissions. After making some adjustments, the script ran successfully after reboot.

Additionally, I helped my partner set up a cron job to manage stored images. We decided that deleting pictures older than 7 days was a good solution to prevent the system from running out of storage space. The cron job was a bit tricky to configure initially, but we were able to use the find and rm commands effectively to manage the files.

#### Reflections:

- Automating the script with systemd was a good learning experience and gave me insight into system-level processes.
  - The cron job for image management worked well, and I realized how important it is to automate maintenance tasks for long-term system reliability.
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## Testing and Real-World Adjustments

### November 27th:

Testing the system in a real-world environment was both rewarding and challenging. We placed our Raspberry Pi and sensor on a table to monitor movement. While the script functioned well, we noticed that the sensor was still triggering false positives. My partner's Raspberry Pi was not triggering as many false detections as mine was. I decided to update our code to see if the problem was related to the Python code, but it wasn't. The updated code will be pushed by me to GitHub to show the version that we will use from now until the day of the presentation.

After some trial and error, we adjusted the sensor's sensitivity and experimented with its placement. This helped reduce the number of false positives on my partner's PIR motion sensor, but we found that the sensor's range was limited, and some detections were missed. In the end my partner decided to change his PIR motion sensor because he had an extra one that was still not being used by none of us.

#### Reflections:

- Testing in the real world revealed the limitations of PIR sensors and the importance of fine-tuning sensor placement and sensitivity.
- The cron job to manage storage worked well, but we considered adding an alert system to notify us if the system encountered issues.

## **Final Adjustments and Presentation Preparation**

### **November 29th:**

I helped my partner finalize the system for presentation. We tested the system again to ensure it was running reliably. We made final adjustments to the sensor's placement and sensitivity to improve motion detection accuracy.

For the presentation, I helped prepare a detailed explanation of the system's functionality and the lessons we learned throughout the process. We also created a user manual for easy setup which will be pushed in the INSTALL file. Although the system was functioning well, we realized that adding more features, like real-time alerts, would further enhance its usability.

### **Reflections:**

- Preparing for the final presentation made me reflect on the overall project. It wasn't just about coding but ensuring the system was practical and functional in real-world scenarios.
- Testing the system again gave me more confidence in its reliability, but I think adding features like notifications would make it even better.

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### **Conclusion:**

This project was an excellent opportunity to learn about Python programming because of the fact I never used it before, hardware interfacing, and system automation. I'm proud of the work we did and how the project evolved even though our product might've not worked as perfectly as we thought. Looking ahead, I'm excited to continue improving the system and adding new features like notifications to make it even more robust with my partner as a future project.