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| Progress Report | | | | | | | |
| Week 3 | | | 6/1/2025 |  | |  | |
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| Group Members | | Jeffery Wheeler | | | | | |
| Joshua Tilson | | | | | |
| Sean Copple | | | | | |
| Valentin Wolf | | | | | |
| Project Title | | The Smart Bird Feeder | | | | | |
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| Task: Mechanical Prototype Assembly | | | | | | | |
| Task Status: In Progress | | | 90% Completed: | | | Jeffery Wheeler | |
| Task Details |  | | | | | | |
| Completed full 3D print of version 1 feeder housing. All parts were assembled to test physical fit of electrical components. Next step is to perform functional testing with electronics installed. | | | | | | | |
| Modifications were made to the bracket that holds the bird feeder. The new version is able to hold more weight. | | | | | | | |
| A change was made to the mechanical design to allow easy access to a USB cable. This change makes it easier to access for program updates | | | | | | | |
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| Conclusions |  | | | | | | |
| All mechanical parts fit correctly, and layout is confirmed. Further testing is required to check motion, access, and cable routing before finalizing version 2 design. | | | | | | | |
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| Action items | | | | | Person responsible | | Deadline |
| Begin full system testing inside housing | | | | | Jeffery Wheeler | | 6/01/2025 |
| Prepare feedback on version 1 for version 2 improvements | | | | | Jeffery Wheeler | | 6/01/2025 |
| Assemble full prototype | | | | | Jeffery Wheeler | | 6/07/2025 |
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| Task: Component Integration Testing | | | | | | | |
| Task Status: In Progress | | | 80% Completed: | | | Joshua Tilson | |
| Task Details |  | | | | | | |
| All sensors and motor components were connected on a test bench. Ongoing tests are running to confirm proper integration between power supply, load cell, servo, and sensors. | | | | | | | |
| All major components function in initial test setup. | | | | | | | |
| Conclusions |  | | | | | | |
| Initial integration looks good. Power and sensor response are stable. Some minor adjustments to wiring and code structure are expected as testing continues. | | | | | | | |
| Code was further optimized to adjust speed of servo motors effectively | | | | | | | |
| Action items | | | | | Person responsible | | Deadline |
| Finish component testing with all sensors active | | | | | Joshua Tilson | | 6/07/2025 |
| Log any errors or unexpected behaviors during tests | | | | | Joshua Tilson | | 6/07/2025 |
| Combine code for all subsystems | | | | | Joshua Tilson | | 6/07/2025 |
| Task: Sensor Fault Detection Code | | | | | | | |
| Task Status: In Progress | | | 60% Completed: | | | Valentin Wolf | |
| Task Details | Construction of prototype version 1 | | | | | | |
| Code is being written to detect faulty sensor conditions. For example, photoresistors or IR sensors that do not change state when expected (e.g., stuck high or low). | | | | | | | |
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| Conclusions |  | | | | | | |
| Basic structure for fault detection is in progress. More cases and triggers will be added after additional testing and input from component integration. | | | | | | | |
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| Action items | | | | | Person responsible | | Deadline |
| Add logic to handle sensor timeout or stuck states | | | | | Valentin Wolf | | 6/07/2025 |
| Test error handling responses in Wokwi or on real hardware | | | | | Valentin Wolf | | 6/07/2025 |
| Task: GitHub Code & File Sharing Setup | | | | | | | |
| Task Status: In Progress | | | 100% Completed: | | | Sean Copple | |
| Task Details |  | | | | | | |
| Created a new shared GitHub repository to improve team collaboration. Includes release notes, shared code access, and expanded storage for print files. | | | | | | | |
| Github was updated and all team members were trained on how to use the platform effectively | | | | | | | |
| Conclusions |  | | | | | | |
| The new system allows real-time updates and easier code review. It also supports file versioning and notes to reduce confusion and track changes. | | | | | | | |
| The new platform shows great improvement in communication. | | | | | | | |
| Code was converted from individual files to .py files. | | | | | | | |
| Function to test code in Github was activated | | | | | | | |
| Action items | | | | | Person responsible | | Deadline |
| Share login and usage instructions with team | | | | | Sean Copple | | 5/31/2025 |
| Use GitHub for all future code versions and STL file uploads | | | | | Sean Copple | | 5/31/2025 |
| Organize files and information on Github | | | | | Sean Copple | | 6/01/2025 |

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| Task: Solar Tracking System | | | | | |
| Task Status: In Progress | | 90% Completed: | | Joshua Tilson | |
| Task Details |  | | | | |
| Assemble and test the solar tracking system using light-dependent resistors (LDRs) and servo motors. The parts are currently being 3D printed and put together to check boundaries, avoid collisions, and ensure the solar panel adjusts its position based on actual sunlight. Final testing will be done outdoors. | | | | | |
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| Conclusions |  | | | | |
| Initial movement testing has been successful. Further testing with real sunlight is needed to confirm tracking accuracy. Once the Mosfet arrives, full system testing with charging and current delivery will be completed. | | | | | |
| Action items | | | Person responsible | | Deadline |
| Test solar tracker movement with sunlight | | | Joshua Tilson | | 6/01/2025 |
| Install and test Mosfet for charging circuit | | | Joshua Tilson | | 6/01/2025 |
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| Task: Testing and Validation | | | | | |
| Task Status: In Progress | | 80% Completed: | | Valentin Wolf | |
| Task Details |  | | | | |
| Created the Testing and Validation section for the project report. This included developing a test plan for each subsystem, writing test case descriptions, pass/fail results, and brief analysis of each outcome. Real testing input from team members was reviewed and integrated into the documentation. | | | | | |
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| Conclusions |  | | | | |
| The testing tasks have been defined and the testing is in progress. | | | | | |
| Test results have been recorded and summarized | | | | | |
| Action items | | | Person responsible | | Deadline |
| Complete all tests and report results | | | Valentin Wolf | | 6/01/2025 |
| Document all final tests | | | Valentin Wolf | | 6/07/2025 |
| Task: | | | | | | |
| Task Status: In Progress | | | 70% Completed: | | Personel | |
| Task Details | |  | | | | |
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| Conclusions | |  | | | | |
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| Action items | | | | Person responsible | | Deadline |
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