Team 7 Project Summary

Ben Chan, Anthony Nguyen, Triet Nguyen

An explanation of the original design problem or need that the design solves:
For this project, the group will develop a motion control system for the HyperRail project on campus. This project involves embedded design,control systems, and MATLAB or Python scripting. This project will be implemented in the greenhouse on the OSU campus to help take care of the plants.

A narrative explanation of how you approached the project as a team, including development phases and ongoing evaluation and revision to the design.
As a team, we developed the project timeline to keep track of what needed to be done as well as the appropriate deadlines. After that, we divided the project into three different tasks, with each task assigned to an individual member of the team. Each member of the team would stick with his tasks and at the final deadline we would assemble all the components together. Each individual task always started with a designing phase, in which we individually designed our block diagrams and submitted them at every block diagram check off.

The project timeline image

TASK NAME	START DATE	DAY OF TERM*	END DATE	DURATION* (WORK DAYS)	DAYS COMPLETE*	DAYS REMAINING*	TEAM MEMBER	PERCENT COMPLETE
HyperRail Control System								
Create movement commands	1/28	24	1/30	2	2	0	All	100.00%
Create tool switch commands	1/30	26	2/7	8	4	4	Ben	50.00%
Create non-linear movement commands	2/1	28	2/9	8	8	0	Anthony	100.00%
Design G CODE parser	1/19	15	1/28	9	9	0	ALL	100.00%
Test control system and debug	2/10	37	2/13	3	2.7	0.3	Anthony	90.00%
Automatic Tool Switching								
Design custom head	1/15	11	1/23	8	8	0	Ben	100.00%
Manufacture tool head	1/23	19	1/27	4	4	0	Ben	100.00%
Write commands for automatic tool switch	1/30	26	2/7	8	8	0	Ben	100.00%
Test tool switching and debug	2/5	32	2/8	3	3	0	Ben	100.00%
Vision Processing								
Design processing code	2/13	40	2/20	7	7	0	Triet	100.00%
Test video processing	2/20	47	2/23	3	0	3	Triet	0.00%
Test the complete system	2/22	49	2/27	5	0	5	Triet	0.00%
Report and Presentation								
Block Diagram	1/13	9	1/15	2	2	0	ALL	100.00%
Project Timeline	1/13	9	1/15	2	2	0	ALL	100.00%
First Block Check-off	1/27	23	1/29	2	2	0	ALL	100.00%
Second Block Check-off	2/17	44	2/19	2	2	0	ALL	100.00%
Project Showcase Presentation	2/27	54	3/5	6	6	0	ALL	100.00%
Project Showcase Technical/Developer Guide	2/24	51	3/5	9	9	0	ALL	100.00%
System Verification	2/25	52	3/5	8	0	8	ALL	0.00%
End-of-Project Cycle Self-Assessment	3/10	65	3/12	2	0	2	ALL	0.00%
Project Completion Video (Team)	3/5	60	3/12	7	0	7	ALL	0.00%

Key lessons you learned from the project as a team
As a team we learned how to surpass our limits on the capabilities about what we can do. With our minds combined we achieved the most. There were times where the project felt like we're walking on legos, but at the end of the path of legos were amazing things.