2E10 Project Plan

Group Y1

Overall Group Objective

The group aims to rectify small numbers of bugs in the bronze challenge and get it reassessed, complete the silver challenge first try and get the opportunity to participate in the gold challenge.

Project Schedule

Members: Ruairi Mullally, Labiba Mansur, Shane McDermott, Noah Savage.

Schedule:

Week	Milestone	Deliverables	Key Date
W7	PID	Complete full functioning Bronze Ruairi, Shane Implement PID Implement Processing improvements: Speed controls Noah Visual enhancements Labiba	
W8	Silver Challenge (15%)	Leave lots of time to fix silver bugs. Group Demo Silver Challenge.	20/03/2024
W9	Implement camera	Take in camera data. Ruairi, Noah Understand how camera data can be used and plan integration. Labiba, Shane Film for YouTube Video Group Begin final report Group	
W10	Challenge course	Combine elements to tackle a challenge course.	
W11	Gold challenge	Deliver gold challenge. Individual MCQ (10%).	
W12	Final challenge	Demonstrate final work. Final report (10%). Group 3-minute YouTube Video (4%). Group	08/03/2024

Risk Assessment

Risk	Chance	Impact	C * I	Contingency
Team member falls ill	1	3	3	Comment all code. All familiar with elements. Frequent meetings
Damaged Components	2	2	4	Try not to hit walls and run over people. Keep the buggy in the plastic box when not in use.
Software bugs	9	10	90	Allot extra time for bug issues.
Sensor calibration issues	2	8	16	Faulty sensors were swapped so should not be an issue.

Unpredictable academic schedules	6	7	42	Try to get work done ahead of upcoming exams.
Student availability and commitment	3	7	21	Establish clear expectations and timelines for project participation. Create communication plan.

Communication Plan

The communication plan will remain largely the same as our communication has been effective and efficient among team members. One extra hour will be added per week to allow for bug fixes, which was an oversight in our original plan that caused delays.

Project Manager: Ruairi Mullally

Communication Tools:

1. WhatsApp Group Chat: For real-time communication, quick updates, and planning meetings.
   a. Maintain a professional and respectful tone in all communications.
   b. Ensure that notifications are enabled to stay updated with the latest messages.

2. GitHub: For version control, sharing code, documentation, and other project-related files.
   a. Follow the Git branching model for development (e.g., feature branches, release branches).
   b. Use clear and descriptive commit messages for better understanding and tracking changes.
   c. Review and merge pull requests promptly to maintain the project's progress.

3. Linear: For task management, assignment, and tracking progress.
   a. Create tasks for each project milestone, feature, or bug.
   b. Assign tasks to respective team members based on their expertise and availability.
   c. Regularly update task statuses to reflect progress accurately.

Meeting Schedule:

Weekly Status Meetings: Every Monday at 6:00 PM (after lab) for 1hr. Discuss progress, challenges, and goals for the week.

Bi-weekly Technical Meetings: Every Wednesday at 4:00 PM (after lab) for 1hr. More in-depth technical discussions and problem-solving.

Ad-hoc Meetings: Organized as needed for urgent matters or critical decision-making.

Bug-fixing meeting: Every Tuesday at 12:00PM for 1 hour.

Critical Analysis of Group Performance:

The team exhibited commendable communication skills and distributed tasks evenly among its members via WhatsApp and shared Word documents. Each team member was engaged and contributed effectively to the project's progress. However, despite these positive aspects, the team encountered significant challenges that impeded the successful delivery of the Bronze challenge.

One of the major issues the team faced was the presence of faulty sensors. A malfunctioning ultra-sonic sensor disrupted the functionality of the project, resulting in half a week of wasted time before a replacement was obtained. Additionally, a change in supplied voltage to the wheel motors meant that the team had to re-do the wheel control calibrations to account for the new power which resulted in almost a full week of wasted time.

Furthermore, the team faced constraints in allocating sufficient time for bug fixing and debugging for the Bronze challenge. Time pressure implementing the networking features meant that a few small bugs greatly impacted the functionality of the buggy during their Bronze challenge demonstration.

The team consistently maintained and updated fritzing schematics, ensuring clarity and accuracy in the project's hardware and circuitry designs. This commitment to documentation facilitated smooth communication and troubleshooting efforts. The team leveraged version control systems such as GitHub to share files and collaborate and demonstrated discipline in task management by adhering to linear task tracking methodologies.

Challenges aside, the team stuck to the original plan extremely well, completing tasks on time and sharing the workload as described. In the updated plan, new time slots have been allocated for bug fixing as well as an amended contingency plan.