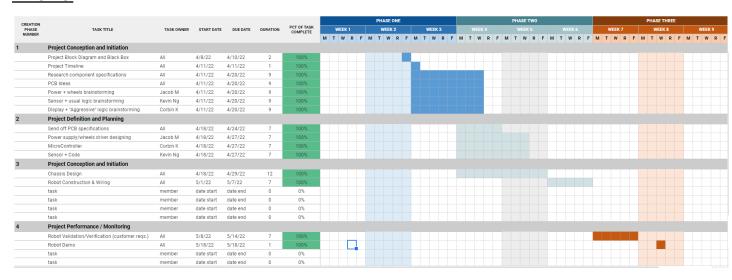## Main Design Problem:

The main task was to design a sumo robot that could find and push an object out of a ring, without of course running itself out of the ring. Our main design goals are as follows: being able to find and push an object out a ring, being visually debuggable, must be within 5% of 500g, have a battery life of at least 15 minutes on one charge, aesthetically pleasing, wireless charging, and a togglable aggressive mode.

Narrative Summary:

We spent the first three to four weeks of this project doing individual research and brainstorming for each of our respective system-level blocks (ex. Motors, power, sensors, etc). During this time we discussed technical details like how each of our blocks would interface with other blocks for the final product. This led into the next two to three weeks being dedicated to the implementation and validation of our individual blocks. Towards the end of week 7 we started drafting ideas for chassis design, and had the final design by the end of week 8. This moved us into the last phase of our project which was the construction and wiring of the robot which took up the remainder of our project.

Timeline:

CREATION PHASE NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
1	**Project Conception and Initiation**					
	Project Block Diagram and Black Box	All	4/8/22	4/10/22	2	100%
	Project Timeline	All	4/11/22	4/11/22	1	100%
	Research component specifications	All	4/11/22	4/20/22	9	100%
	PCB Ideas	All	4/11/22	4/20/22	9	100%
	Power + wheels brainstorming	Jacob M	4/11/22	4/20/22	9	100%
	Sensor + usual logic brainstorming	Kevin Ng	4/11/22	4/20/22	9	100%
	Display + "Aggressive" logic brainstorming	Corbin K	4/11/22	4/20/22	9	100%
2	**Project Definition and Planning**					
	Send off PCB specifications	All	4/18/22	4/24/22	7	100%
	Power supply/wheels driver designing	Jacob M	4/18/22	4/27/22	7	100%
	MicroController	Corbin K	4/18/22	4/27/22	7	100%
	Sensor + Code	Kevin Ng	4/18/22	4/27/22	7	100%
3	**Project Conception and Initiation**					
	Chassis Design	All	4/18/22	4/29/22	12	100%
	Robot Construction & Wiring	All	5/1/22	5/7/22	7	100%
	task	member	date start	date end	0	0%
	task	member	date start	date end	0	0%
	task	member	date start	date end	0	0%
	task	member	date start	date end	0	0%
4	**Project Performance / Monitoring**					
	Robot Validation/Verification (customer reqs.)	All	5/8/22	5/14/22	7	100%
	Robot Demo	All	5/18/22	5/18/22	1	100%
	task	member	date start	date end	0	0%
	task	member	date start	date end	0	0%

Phase headers: PHASE ONE (Week 1, Week 2, Week 3), PHASE TWO (Week 4, Week 5, Week 6), PHASE THREE (Week 7, Week 8, Week 9)

Key Lessons:

As a team, we learned the importance of communicating technical details like the sizing of our individual components as these are pivotal details when designing a good chassis. Similarly, we also learned that construction and wiring of a final product should be brainstormed before.