

Timeline Introduction:

The project is expected to finish before **May 31st, 2020(17 weeks span)**. The final three weeks before the project deadline is scheduled for adjustments after the testing product is ready for adjusting and testing; thus the deadline for the testing product is **May 10th, 2020**. The testing product is expected to have all the functionalities in the proposal such as drawing, wall climbing, computer vision and controlling as if the risks and expectations are solved and achieved. The minimum requirements and expectations will be completed as promised.

The mechanical team and the software engineer team will work concurrently on the hardware and the software platform. In the middle of the progress, the mechanical team must provide the control signal that the kart processes, such as the transmission protocols, data format, and transmission technology requirements. The two teams will meet and combine the work after the software is completed and the kart is able to move and draw on the ground.

Phases:

Phase I: Split into two groups. The first group works on a cart that can simply move on the ground. The second group works on a software platform that supports computer vision, drawing and computation, and supports communication techniques.

Phase II: Hardware group provides a communication protocol for the built-in chip and the movement commands for the kart. The software team develops the transmission to the chip via wifi or frequency signals.

Phase III: Combine two groups. The two teams will collaborate to connect the software on the mobile device to the device on the kart. The mobile device will control the kart to move on the floor based on the drawing commands from the user.

Phase IV: Add supplementary functions such as drawing and wall climbing.

Phase V: Testing and improvement.

- **Feb 6th(Week 1)**: Deciding the mechanical technology and the software platform.
 - Different remote-controlled karts will be tested.
 - Software platform possibilities will be listed based on their support on computer vision, surface recognition, AR tools, and usability.
 - Pros and Cons will be listed for further consideration.
- **Feb 27th(Week 4)**: Expected date for Phase I.
- **Mar 19th(Week 7)**: Expected date for Phase II.

(Spring break)

- **April 16th(Week 11)**: Expected date for Phase III. (group combining, the mobile device should be able to control the kart via computer vision and drawing.)
- **May 7th(Week 14)**: Expected date for Phase IV. (The supplemented functions should be added and ready for testing.)
- **May 31st, 2020**:(17 weeks) The expected deadline for the product to be finished.