Day 8: Demos and Synthesis

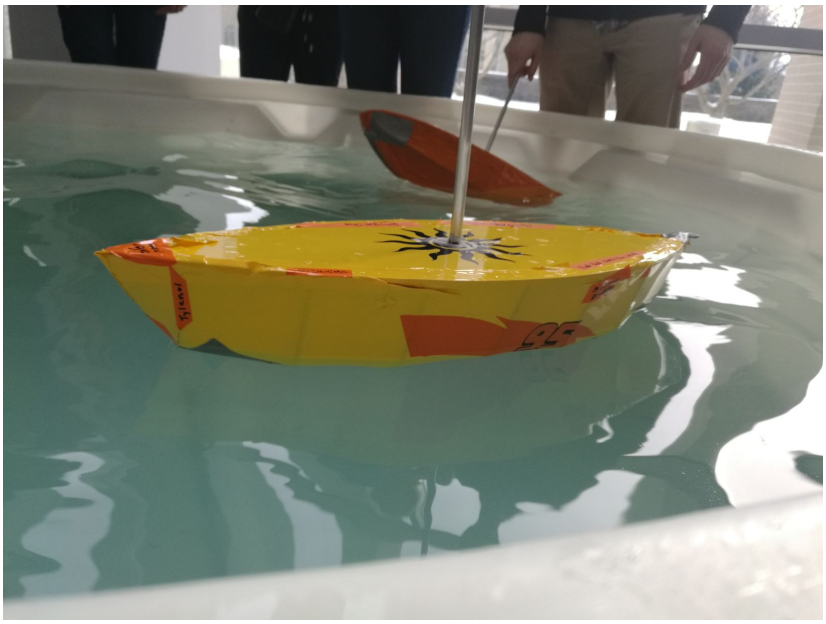

Figure 1. FAST CAR, NASCAR floating completely level

Our boat, FAST CAR, NASCAR worked better than expected in some ways and worse in others.

- Floats level ✔️
- AVS: 145° □
- Speed: 3.1 seconds / 1.2m/s ✔️

The AVS of our boat was 145°. We predicted our AVS to be 130°. This difference between analytical and experimental values is due to water gathering in the boat due to an unforeseen hole in the boat. This caused additional water mass to accumulate, changing the center of mass and causing a higher than expected AVS.

The constructed boat differed slightly from our modeled boat because it had a decent amount of glue and tape and the mass in SolidWorks predicted the mass of the hull would be 186g but it was actually 166g. This may have been due to the hardboard's density not being exact. To adjust we lifted the ballast slightly more. We also had pretty stickers. We could have also added multiple extruded bodies as a replacement of the ballast in the CAD assembly, which could have helped increase our overall accuracy for the center of mass and overall mass. It would also have been beneficial to make a feature to retain the ballast in our hull design which could have eliminated any movement during the test for our AVS.

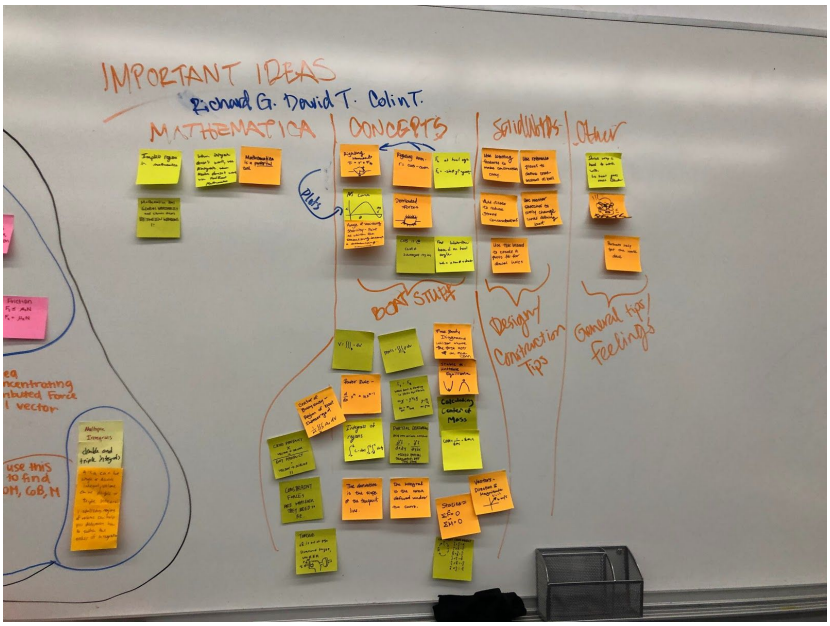


Figure 2. Final Concept Map