DESIGN DISCUSSION

Our vehicle was designed based on functionality that was required for the project and also observation of the first prototype we used to practice in the lab. It involves 3 main part which is the picker the body and the motor compartment These 3 parts were joined together, the picker has a hole in which extrusions from the body connect too the main body , our vehicle underwent a lot of iterations , like the platform we designed additionally to hold the sensors.

The Body

The body contains 3 main compartments, a battery compartment, a microcontroller compartment and the motor driver compartment. The batter compartment was designed to house the battery and help to distribute the weight of the battery along the vehicle. A whole exist at the back of the battery compartment to help push the battery out if required. The microcontroller and motor driver are both attached by means of drilling and screwing.

The Picker

The picker is designed to push the objects from one position to another, hence we designed arms that have an arc to assure the object it pushes do not fall out. Our ultrasonic sensor is also at the top of the picker, we designed a hole to fix it in with an angle to make sure it slants and faces down. There are also holes into which the body connects to the picker. While trying to fix the sensors onto the vehicle we came up with new ideas for the ultrasonic sensors on the picker, we designed a box container for the ultrasonic sensor to place the picker inside , also the holes designed to join body and picker were no longer required as we instead attached our picker to the platform.

The Motor compartments

This was designed to serve 2 purposes, clamping down the motors and also holding up the breadboard, we used additional method to ensure the motor was stable and firmly held. This part was connected to the body by drilling and screwing.