

## Project Summary

The goal of this project was to complete a fully functional Electronic Pet Door that uses an RFID scanner to allow the pet to enter and exit the door. With the simple scan of a plastic card on the side of the door, the door automatically raises with the use of dual motors that are using a fishing line that is attached to the wood panel in order to lift the door up and down. A slit on each side of the door is what the door slides through in order to open and close it. A wooden scale with 4 load sensors placed underneath is used to measure weight of the animal. An approximate value of the weight is sent to the serial monitor, and then that actual weight is measured by the scale. The values are then sent to the serial monitor. As soon as the pet steps off the scale, the values on the serial monitor start to go down to zero. An electronic pet door is not really a necessity in a home as a manual dog door does its job, however in order to understand conceptually and physically how some of these mechanical devices function, building an electronic pet door helps further that understanding. The project was approached by each team member coming together and deciding as a group how we want the project to work. Then each member chose their specific block/ component that they wanted to work on/build and then from there each component was created and then all put together.

- Week 1: Design was established, and parts were ordered.
- Week 2: Materials for the structure were gathered and construction immediately began.
- Week 3: Frame construction continued, and electronic components and parts were now in the prototype phase.
- Week 4-5: Door was painted, and most electronic components have been tested and completed. Mechanical testing of the motor has begun.
- Week 7-9: Enclosure layout was completed, and testing started.
- Week 10: Assembly and verification.

Some of the key lessons that we learned from this project are that we should have started a little earlier in terms of connecting all our code together as well as the overall components of the project. The PCBs were acting finicky throughout the whole project, but they ended up working in part for the RTC clock and the load sensors.