

EE1 Project: Advances in Electronics

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mlmr

Timeline

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After we received the specifications, the following two weeks were spent scratching at the wall for ideas. During these two weeks about 10 designs were suggested, however our expert urged us to implement the simplest of ideas, thus we made what we did today.

Designs

└ Designs

There were two iterations of our design. The first one proved difficult to manufacture due to size constraints of a 3D printer build plate, but it was the most reliable design. We had to sacrifice reliability for ease of manufacture.

Designs

└ Designs

Thus, the second design was born. I think about now is a good time to acknowledge the elephant in the room (go to next slide): Why no electronics?

Lack of electronics in the electronics section

- ▶ Electronics section does not have much electronics?
 - ▶ Our expert urged us to build the simplest and most reliable solution
- ▶ Chemistry requires the heaviest use of electronics

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The extent of the use of "electronics" in the electronics section of the box is debatable, as the task at hand is very straightforward and easily achievable without any moving parts. Our expert urged us to build the most reliable and simplest solution, thus most of what one would associate with electronics (such as control circuits, actuators, or sensors) are absent from this design. However, we have done work on the chemistry section of the project, as they need the most electronics out of all groups: their task is to bring change to a chemical solution via detection of the ball. Detecting this change in the solution (be it temperature, electrolytic behavior, or opacity) requires heavy use of electronics.