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Problem Statement

Everyday, many recyclable items are being thrown into the trash and being sent to landfills. When we were looking at different problems in our community, we found that recyclable items in landfills was one of the biggest problems in the 21st century. Recyclable items in landfills is one of the main factors in global warming.Even though this is a major problem, when we did market research and we found that there were not many devices out there to help solve it. When we chose to try to tackle this problem, we knew that there would be some challenges. For example, we could have some trouble finding all our desired sensors and

components for our project. We might also have some trouble getting our device to do exactly what it is programmed to do since we are planning to build a circuit with many components.

Using our ideas we created a project proposal to send to our client.Fortunately, our client (Gemma Evans, Head of recycling coordination in Howard County) responded to our project proposal quickly with some criteria and constraints for our device.

The criteria our client suggested for us was:

1. Our device needs a tool to efficiently identify recyclable items and prevents the recyclable items from being intermixed with the trash
2. Our device needs to be weather proofed to avoid damage
3. As per now the scope of our prototype is only residential usage our client wants us to later enhance your prototype for business and commercial usages as well

The constraints suggested by our client were:

1. The items being scanned by the metal detector should not be held more than 8mm away from the metal detector
2. The user should check the battery supply on a regular basis
3. The trash inside of the trash can should not be filled over the device that is boxed and attached inside of the trash can