**Project Introduction:**

Problem Statement:

Every day, 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 major 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 this environmental problem.

We decided our proposed prototype name as R3 (Reduce – Reuse – Recycle) to save energy and our environment.

Our Team TheRoboKnights, feel proud using Arduino technology with a better solution to these kind of real time problems. We believe it is our Social Responsibility to help save mother earth.

Using our ideas, we created a project proposal and sent it to our client. Fortunately, our client responded to our project proposal quickly with their requirements for us.

Client:

Ms Gemma Evans

Head of Recycling Coordination

Howard County

Maryland

Client Requirements:

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 for residential usage. Our client wants us to later enhance your prototype for business and commercial usages as well

Constraints:

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

Expected Challenges:

We knew that there would be some challenges while providing a better solution for this proposed problem statement.

For example

1. We could have some trouble finding all our desired sensors to detect all kind of recyclable items.
2. We could have some issues while integrating all the modules related code