Smart Recycling Bin using IoT

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Background
• Many citizens throw recyclable waste in wrong recycling bin.  
• No one collects the recyclable waste after the bin is full.

Objective
• By the assist of IoT, the data collected by the smart recycling bin can be transmitted through wireless network.  
• The purpose of the bin is providing real-time monitoring on the number of collected recyclable waste to recyclable waste collectors.  
• Advantage: 
  • Help the recyclable waste collectors to plan a higher efficiency route and better manpower allocation to collect the waste.  
  • Reduce the pollution during recycling procedure.

Methodology

Detection Part
- IR sensor to detect the presence of the waste. And trigger on the track motor.  
- Metal sensor to detect the aluminium can. - Ultrasonic sensor to detect the shape of plastic bottle.

Classification Part
- Paper will drop next to smart recycling bin.  
- Aluminium can will slide behind the bin.  
- Plastic bottle will fall under the bin.

Results
• It can distinguish the type of recyclable waste.  
• It can provide the number of recyclable waste collected.  
• We can monitor the data real-time wirelessly.