

# R**o**bb**i**n

The robotic bin

## Group 35

Arpit Bhatia - 2016229

Vaasu Gupta - 2016275

Niket Singh - 2016060

Nikhil Sachdeva - 2016061

## Extract

*"Overflowing dustbins with garbage scattered around them is a common sight in our country. If we search for dustbins in India on Google, more than half of the images of public bins show such a scene. This problem exists as the dustbins overflowing with trash are almost never emptied out at the correct time. People also tend to throw garbage into dustbins and then not pick it up if it falls out, thus creating scattered garbage around the dustbin. Seeing scattered trash people have a tendency to throw the trash on the ground, instead of inside the bin thinking "What difference does some more trash make?". Our project aims to resolve this problem by making a smart dustbin with a piston in it, which ensures that garbage never spills out and alerts the authorities to empty the bin on time. Our smart dustbin will also have arms to pick up the trash around it automatically and put it inside itself to put an end to the scattered trash around it. With this project we hope to make our contribution to help clean our country."*

## Need for our project

As explained in the extract above, our project aims to reduce garbage from piling up around dustbins and stop the overflowing of bins. Heaps of garbage, if allowed to collect create big problems for the public such as

- Soil Contamination by seeping into the soil
- Air Pollution through harmful fumes being released
- Threat to animals such as cows eating plastic bags

- Contamination of water bodies if garbage is washed into them
- Being a fire hazard
- Attracting disease causing insects such as flies and mosquitos

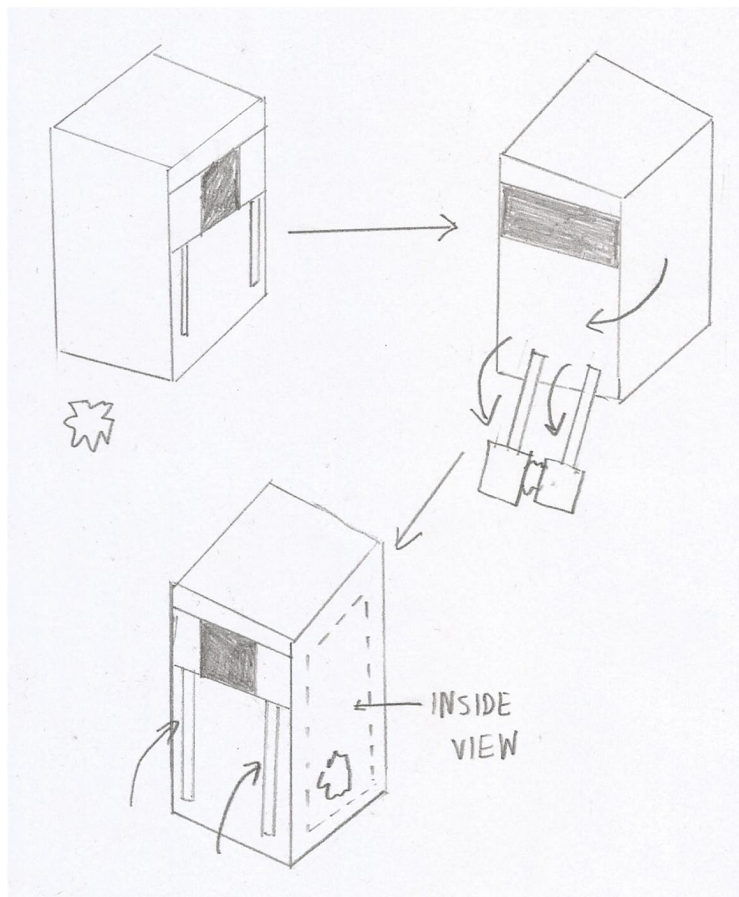
We also aim to help garbage collection workers and cleaners as they are the ones who are required to pick up and clean the scattered overflowing garbage.

Garbage collection is said to be one of the most hazardous jobs in the world with dangers such as cuts from sharp objects and exposure to bacteria and toxins. We hope we can make their job a bit more safer and easier.

# Features of our project

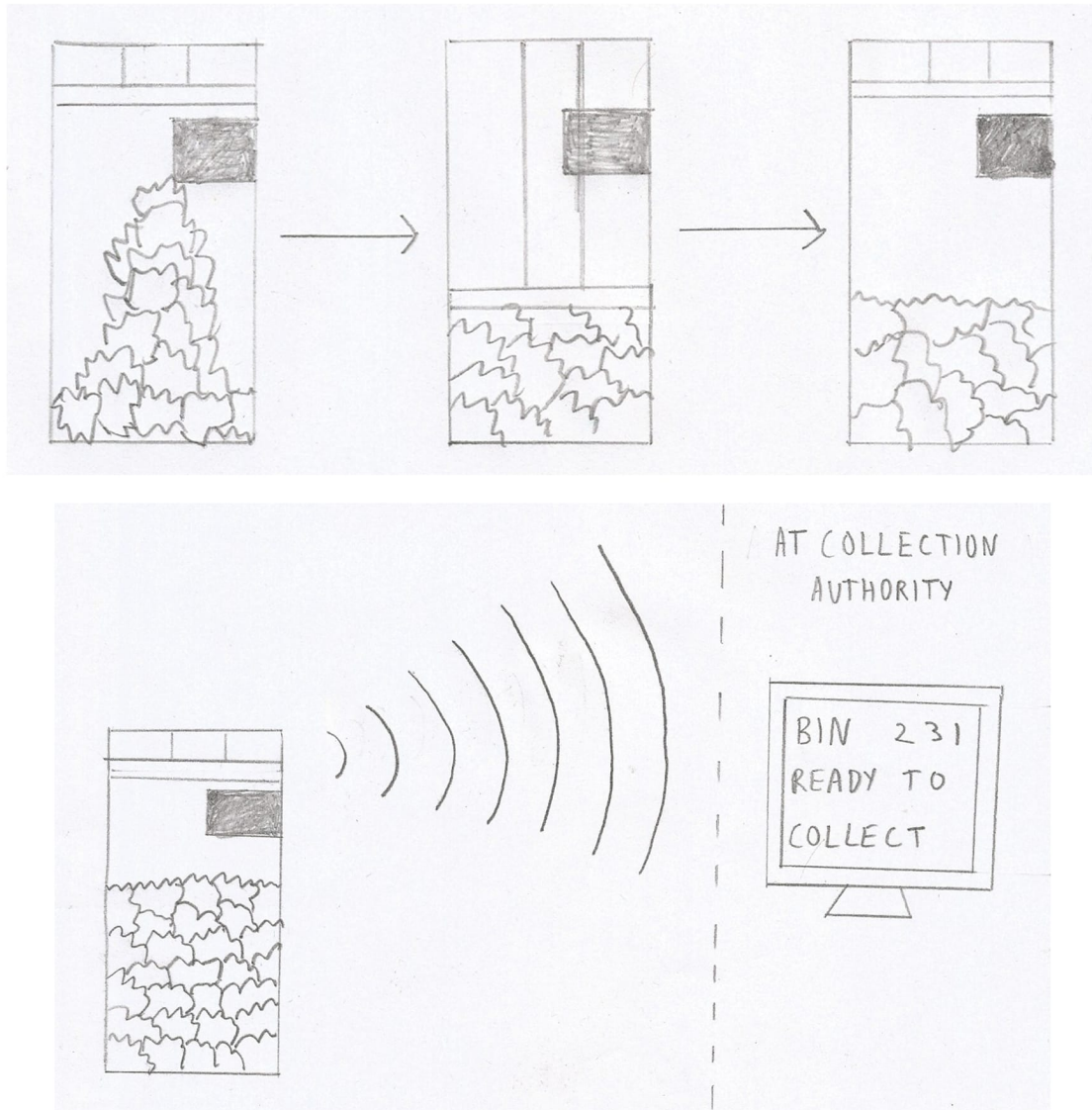
## 1. Picking up Garbage

Our project consists of a smart dustbin with hands on one of its sides. It will be placed on a rotating platform to enable picking up trash in a given radius around it. It will pick up any small object placed on the ground within a certain radius (approximately a 100cm) which does not move for a minute. This feature hopes to solve the problem of people throwing things inside the dustbin and not picking them up if they fall outside the bin.



## 2. Preventing Overflow

Our bin will have a piston in for compressing the garbage for more optimum space utilisation. This will prevent overflow of garbage. There will also be a system to send a message to the authorities when the garbage exceeds a given level so the bin can be emptied out at the correct time.



## Future Prospects

Some additional features that we have thought that can be implemented in this project are

- automatic dispensing of garbage bags inside the bin
- segregation of recyclable waste
- identifying special objects such as keys and phones and storing them in a separate compartment
- powering the bin using solar energy