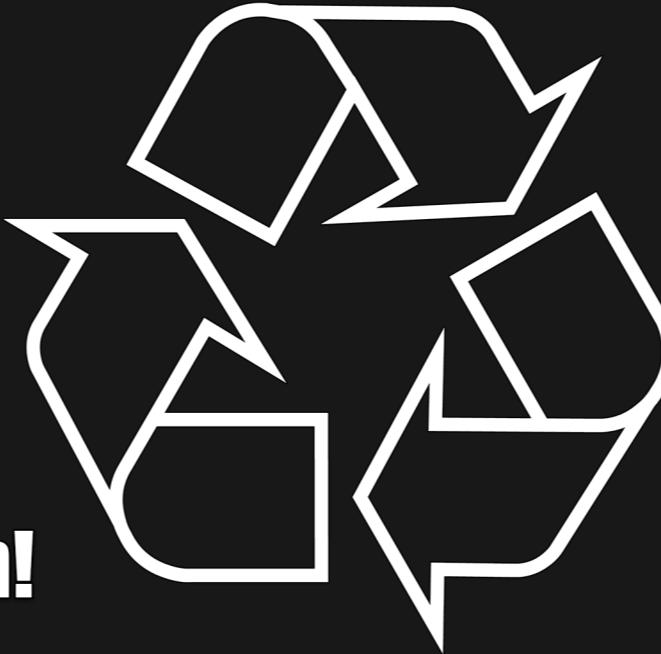


# Features :

# SmartBin.eco

Your Waste, Our smart solution!



## Group 23

Out of the 40 million tons of recyclable products produced a year, only 5% is recycled.

If everyone in the UK recycled just one more drink can, it would save enough energy to power a train from Leeds to Brighton and back 6000 times.

**Slaying a Dragon**  
This is a massive issue and it's very clear that most people don't feel inclined to recycle. But how do we even go about tackling such a titanic problem? There's tons of different techniques and strategies that we could employ as a group but the biggest problem is that people don't feel any obligation to recycle.

Where can we use these techniques?  
Well the most effective for employing any social strategies would be community areas where there are many people around each other. Places such as:- Pubs, Schools, Gym

Making logical decisions  
To decide between pubs, schools and gyms we implemented QOC. Using QOC, we determined that schools provide the best environment to implement our techniques. Schools allow us to influence a younger generation and incorporate student's parents which allows us to have a much greater impact.

Secondary schools produce 22kg of waste per pupil per year

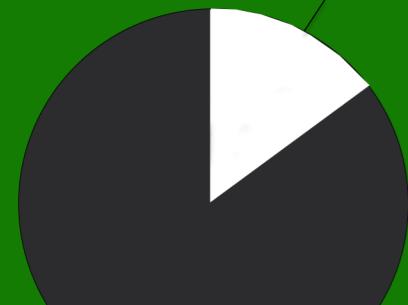
### STUDY

Although we conducted preliminary research we wanted to do our own specific survey's and questionnaires.

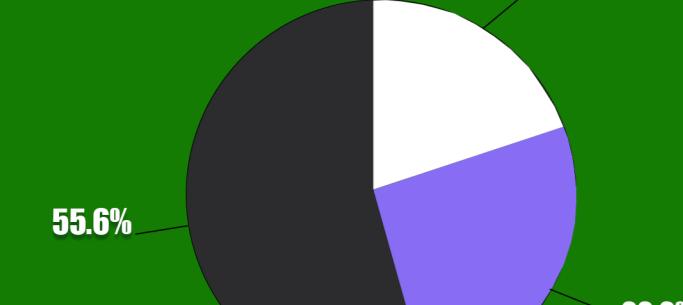
We discovered that secondary schools had a massive problem with getting their students to recycle and giving their students the facilities to be able to recycle. Especially when compared to their educational sector counterparts.

### Results

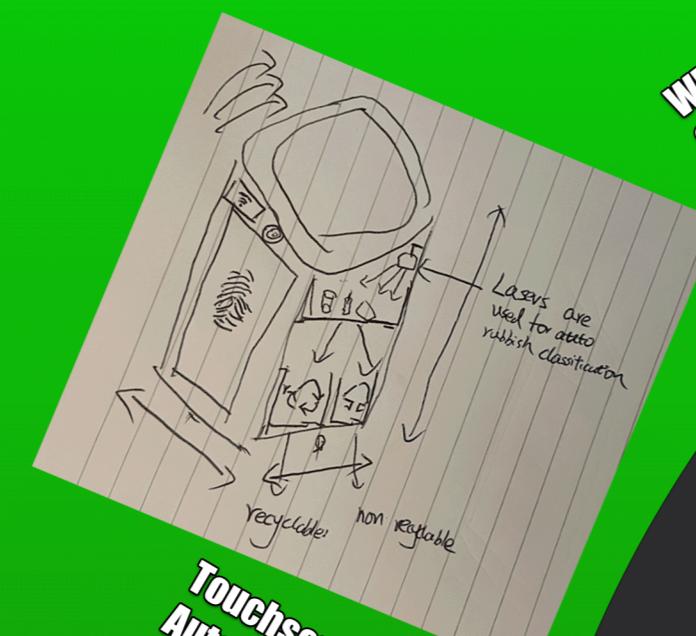
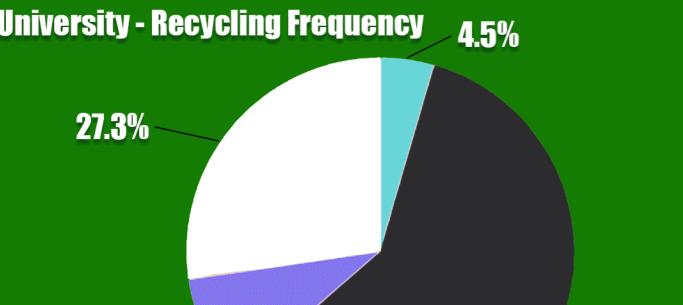
Primary School - Recycling Frequency  
16.7%



Secondary School - Recycling Frequency  
22.2%



University - Recycling Frequency  
4.5%



Touchscreen  
Auto-Open Cover  
Biometric Recognition

AI Voice Control - for accessibility  
Card Reader - Not available at all schools  
Legs - expensive, imbalance, high maintenance



Only 43% of secondary schools have recycling bins

### Lo-Fi Sketches

We designed three prototypes with varying features. We wanted to find the strengths and weaknesses in our prototypes and combine their strengths into our solution.

Wheels - for movement  
QR code scanner  
Arms - expensive, high maintenance, safety issues  
Drones - expensive, high maintenance, fragile



### Auto Cover

A convenient way to throw trash - The lid will automatically open while people are close to it.



### Camera for classification

Auto-Sort Recycling - The different types of recyclable trash will be classified into different area inside the bin.



### QR code scanner

Contactless - By scanning the QR code on the app to recognize the user.



### Touchscreen

Understanding quicker - Users can see information about instructions for using the bin, recycling facts, ranking and how much space is left in the bin.



### A.I. voice control

An Easier way to interact - Users can interact and make commands by talking to the bin and it talks back.



### Wheels

Movable - Moving to different place by wheels.

## Scenario for throwing trash :



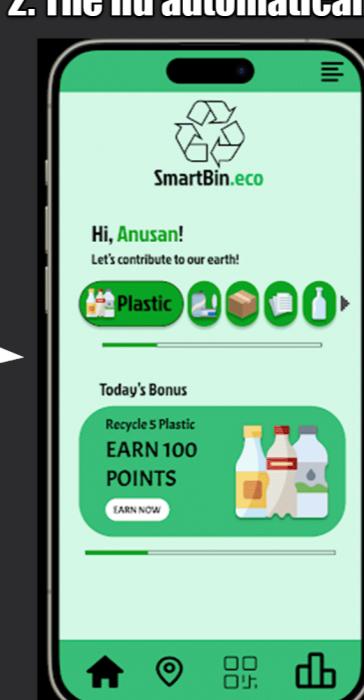
1. A person wants to throw a plastic bottle



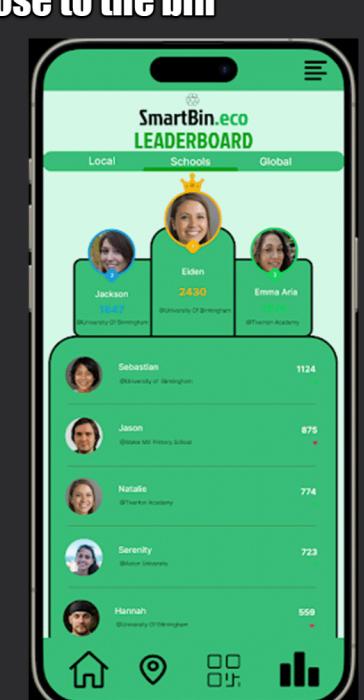
2. The lid automatically opened once she is close to the bin



3. After that, she uses the QR code for authentication



4. Then the app shows how many points she has



5. Finally, she can see the rankings for individuals and schools