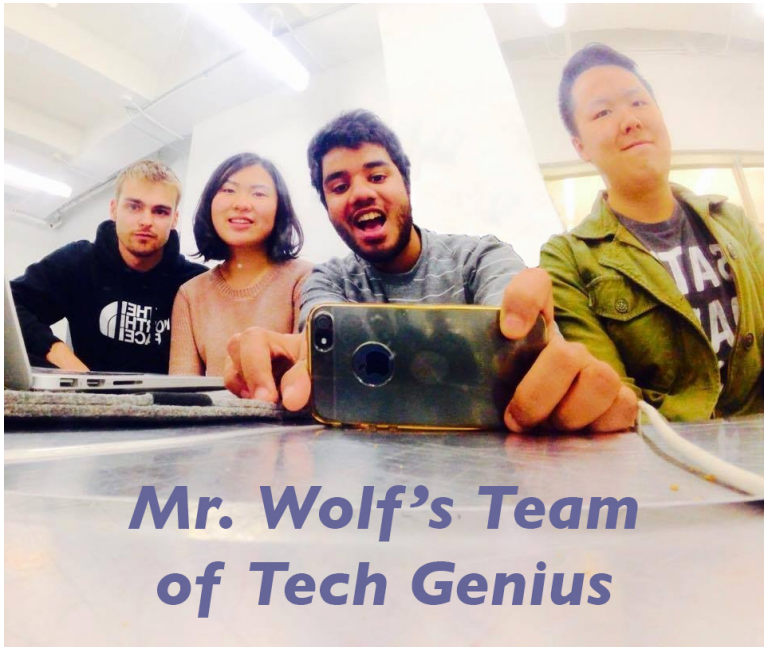


Project Name: D12 Recycling Comedy (working title)

Team: Mr. Wolf's Team of Tech Genius
Captain: Yumeng
Co-Captain: Shubs
Team Members: Gentry, Yi

Concept:

D12 is the home of Design and Technology. Every table, every room and every corner is immersed with limitless creativity and whimsical projects. However, one thing that DT people overlook is the recycling bins. It is understandable that after an entire day of hard work, people are too exhausted to clean up the trash and leftover materials. Even if people remember to throw them away, the giant bins for regular trash are more popular than the recycling bins, regardless of the recyclable materials among the trash.

Sustainability has long been promoted in the New School, therefore, our team proposes a playful intervention on the recycling bins to turn recycling into fun. In a DT style, our team will install an interactive robot comedy show to encourage people to use the recycling bins. According to our observation in the New School, there are two types of recycling bins: the blue one for paper and the green one for bottles and cups. They are usually placed next to each other, inspiring our team to humanize them as two comedians standing together and performing with witty conversations and actions. In our context of D12, the two recycling bin comedians will be transformed into the appearance of Kyle and Sven, the two most prestigious and mysterious figures in DT.

Research:

The team will make two counters with IR sensors installed inside the bins to obtain the data of current usage, for instance, the number of people who throw things into the bins, the time period when the bins are most frequently used, etc. In the later process of the project, the counters will be incorporated into the comedy show with LCD's. The data will be presented through the conversations and actions in the comedy show.

Execution:

1. Two recycling bins will be placed somewhere on D12. Each bin will have one circular hole where recyclable items can be deposited.
2. Each bin will be outfitted with a robotic replication of either Kyle or Sven. Each head will be outfitted with a movable jaw, full head rotation, and LEDs for eyes. We will scan Kyle and Sven's heads, 3D print them, and then paint them.
3. An IR sensor within the trash bin will detect when an object has been deposited and subsequently add it to a counter and trigger robotic head motion and audio. This audio will be rewarding, humorous, and encouraging to people who use the bin.
4. A second IR sensor will detect when someone is within proximity of the recycling bin. If someone enters its range, it will trigger robotic head motion and audio. This audio will shout banter and make people feel guilty about not recycling.
5. We will record Kyle and Sven's voice.
6. The number of people using the bins detected by IR sensors are output to display on LCD's. The LCD's will be placed on the front of the bins for people to see.

Project Proposal Reviews:

"If this is successful I will always recycle on D12." - Joshua Kauten, fellow Parsons student in Design and Management but always seems to be hanging around D12.

"This will be the coolest recycling bin ever!" - Jessica Chang, Parsons student

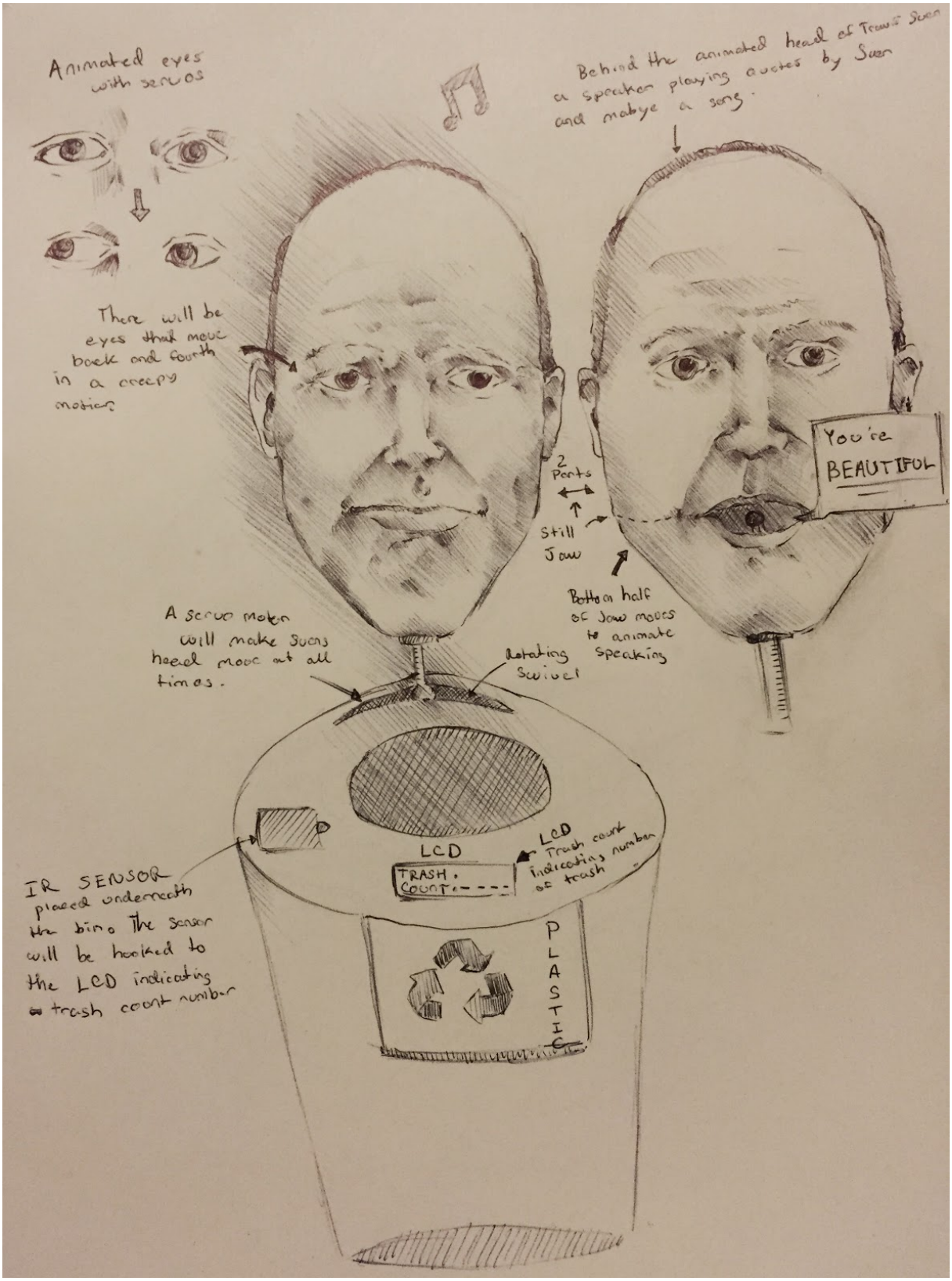
Materials:

- Sven/Kyle
- Arduino (Uno or Mega?)
- IR sensor
- Adafruit audio shield
- Speakers
- Servos/Motors
- Gears and materials for robotic arms
- Adafruit Servo shield/Motor Shield
- LCD

Challenges:

1. Are these two shields from Adafruit stackable?
2. Which parts require external power and transistors?
3. How many pins do we need? We might need Mega. Let's pseudo-code and see.

Sketch:


Animated eyes with servos
There will be eyes that move back and fourth in a creepy motion
Behind the animated head of Travis Scott a speaker playing quotes by Scott and maybe a song.
You're BEAUTIFUL
2 Parts
Still Jaw
Bottom half of Jaw moves to animate speaking
A servo motor will make Scotts head move at all times.
Rotating Swivel
LCD
LCD Trash count indicating number of trash
TRASH COUNT:
IR SENSOR placed underneath the bin. The sensor will be hooked to the LCD indicating the trash count number
PLASTIC