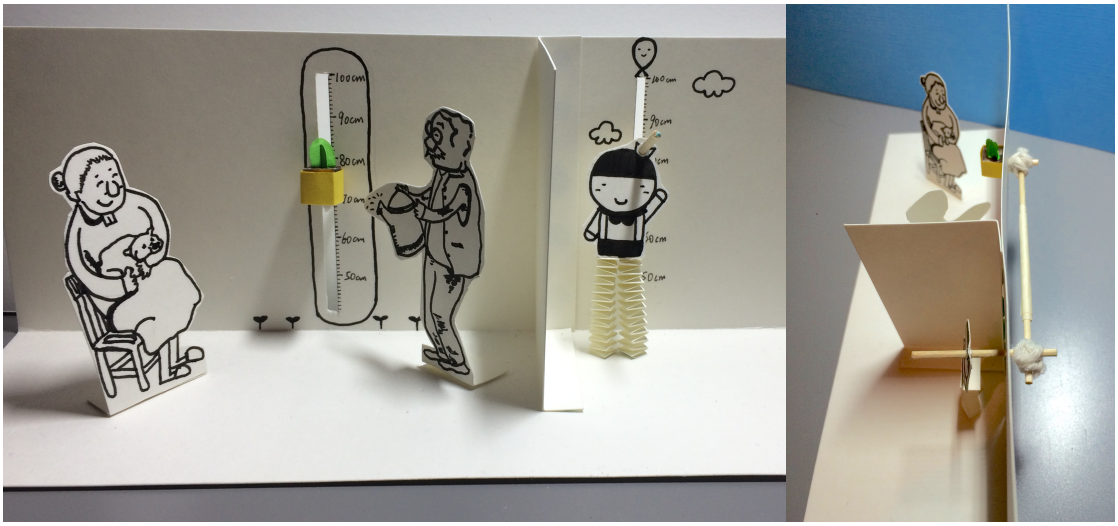
Qing Zhao

Creative Technology

30 October 2016

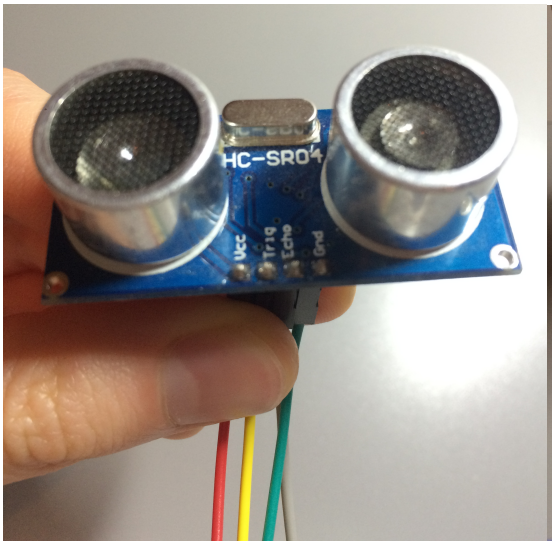
Reflection of Week 3

This week I looked deeply into the scenario and the first prototype of my product “Grandpa’s Garden”. To begin with, I built up a paper-based scenario to tell the story of the connection between across generations. Using some sticks behind the scene, I primarily got the dynamic scenario worked by moving the middle stick up and down.

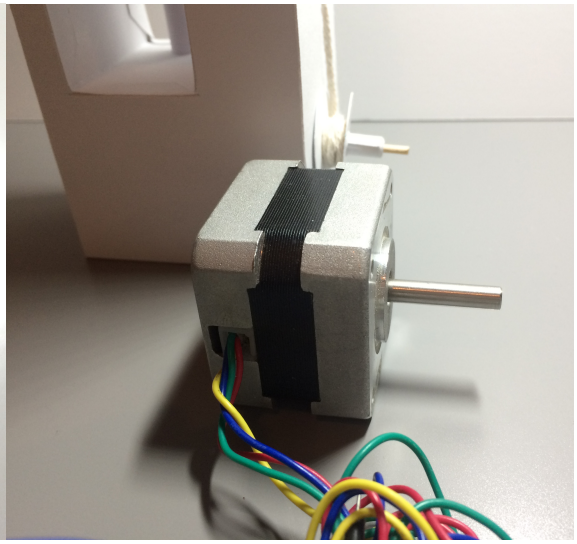


Scenario of “Grandpa’s Garden”

As for technology terms, I asked Ali’s help to sort out the connection of the two ends, the grandparents and grandchildren. He introduced me an Ultrasonic Distance Measuring Sensor, which generated and received sound waves and then calculated the distance with the time difference of reflection. It can be as precise as centimetre, which is exactly what I need for the children’s end to measure their heights. When it comes to lifting the garden pot, Ali gave me some suggestions on observing objects from our surroundings, trying to find something similar and learn from them. He then showed me how 3D printers worked. I perceived that the platform could be lifted up and down with the supporting of a collaboration of a screw and a nut. The screw rotates to lift up the nut, which the platform is attached on. The 3D printers inspired me to use stepper motor to drive a wheel to lift a garden pot by strings further.



Ultrasonic Distance Measuring Sensor



Stepper Motor

With the technology backed in mind, I began to consider the size and the probable form of the prototype. Up till now, I got two solutions for lifting up the plant pot. Plan A is to use wheel and string to pull the pot, plan B is to utilise the screw and nut to lift the pot. I want to try both and demonstrate them in one prototype. Using card paper, I folded a cuboid where the stepper motor can be hidden at the bottom. At the same time, some space was reserved in the middle for the plant and screw and nut structure as well. For plan A, the pot is lifted by the string, which goes along the track lifting the pot and driven by the rotation of the wheel. For plan B, I used a paper rod and and a small piece of paper to mock up the relative motion of screw and nut. Luckily, they both worked successfully and smoothly. personally speaking, I prefer plan B, that is to lift up the pot from underside of it instead of pull the pot from top. In this way, the product demonstrates more about the metaphor of growth.

Prototype version 1.0

Looking back into the scenario, technology and prototype I have got now, I felt it still remains lots of work to put it forward in the next week. The first thing is to consider the final form of the video, it seems that shooting a simple stop-motion animation is a good choice to tell people the story. Secondly, I'd better make it work by the technology I learned from Ali, which also requires many efforts. Anyway, pressure brings motivations, leaning something new with the challenge is always an excitement.