Caring for pets- intelligent feeding appliance driven by web of things

StarT Project Report

- **The name of the project:**

  Caring for pets- intelligent feeding appliance driven by web of things

- **The number of team members (children and youngsters):**

  Six students.

- **The age of the team members (children and youngsters, e.g. 7-9 y.o.):**

  10 years old.

- **The names of the team members (children and youngsters). Please note: the names will be copied from here to the diplomas.:**

  Yilin Wang, Shiwen Min, Yuxuan Lu, Zejun Zhou, Zhaojun Xie, Yuxuan Ouyang.

- **The names of the supervisors of the project (adults). Please note: the names will be copied from here to the diplomas. :**

  Chao Zhang, Jing An.

- **The StarT theme to which the project is linked:**

  ○ Mathematics around us
  ○ Nature and environment
  ○ Well-being (health, food, exercise)
  ○ Home, culture and internationality
  ○ Technology around us

- **Briefly describe your team, your project, and how you carried out your project.**

  ### 1. Our team

  All of us are from Suzhou Jinchang Foreign Language Experimental School, Jiangsu, China. Our team consists of 6 students of Grade 5. They are Yiling Wang, Shiwen Min, Yuxuan Lu, Zejun Zhou, Zhaojun Xie and Yuxuan Ou'yang. Besides, we have Chao Zhang and

Jiang An as our guided teachers.

2. Project research period

About 2 months.

3. Project research background

One of our teammates, Yiling Wang, loves small animals very much, especially hamster. And she has one. However, she is always annoyed by the problem of feeding the hamster when nobody is at home. The hamster cannot have meal punctually and will suffer hunger when she and her families are out. She wants a solution for this.

4. Project research process

(1) Present the idea

Yiling Wang turned to Mr. Zhang, the science teacher and told him the problem of feeding the hamster when she is not at home.

Inspired by teacher Zhang, Yiling Wang would like to invent an instrument which can automatically feed the hamster punctually and quantificationally.

(2) Founding a research team

When I shared the idea about intelligent feeding appliance, those who have the same problem wanted to offer their help . And together we became teammates.

Yiling Wang, the CEO.

Shiwen min, the CVO.

Yuxuan Lu, the CAO.

Junze Zhou, the CRO.

Zhaojun Xie, the CDO.
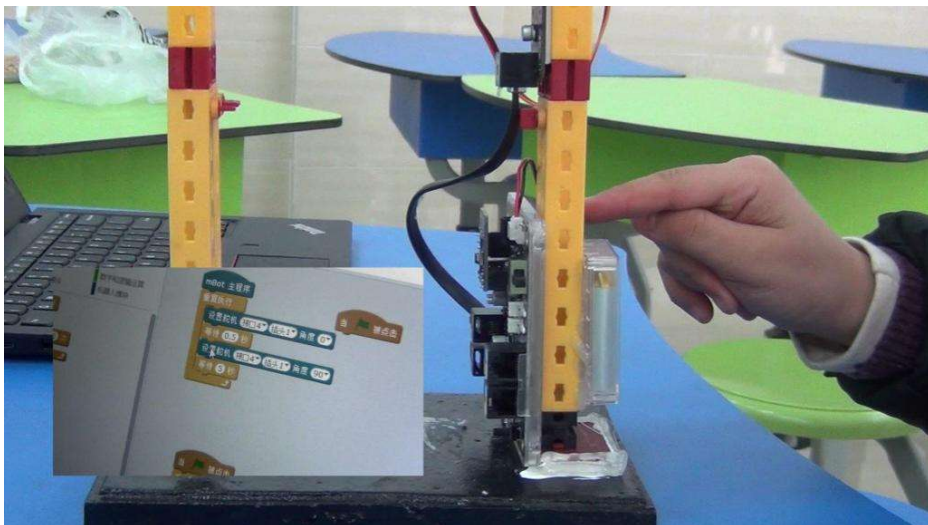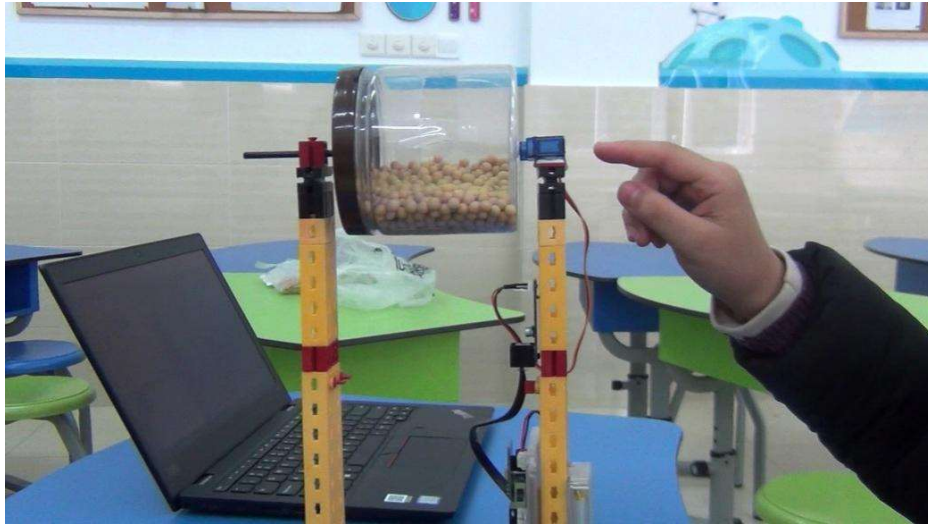
Yuxuan Ou'yang, the CTO.

(3) The research process

a. Teammates draw the blueprint and improve it under the guidance of teachers.

b. Look for suitable materials.

c. Run into trouble.

For grade 5 students, it is not easy to realize the function of automatic control. Teammates searched on the internet for information related to automatic control. With the help of the teacher, they bought an engine, Arduino, the control mainboard, wireless control module and other electrical apparatus elements. Also, they learned how to use mBlock software to do some basic program work.
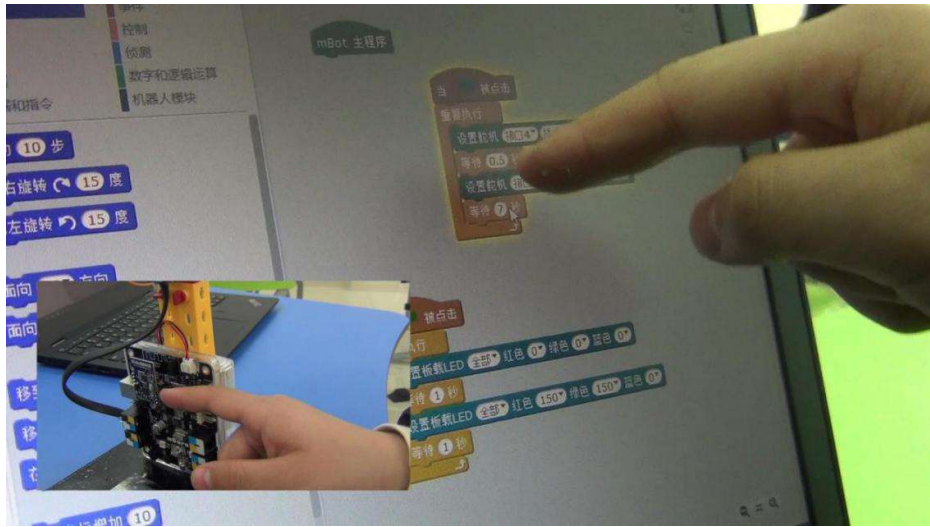
(4) Construct the main body and input program

That is the version 1.0. Put the pet food into a jar. The jar should be placed at an unreachable height to the hamster. Use holders to support the jar. Set an electrical machinery at the bottom. Through the control of main board, the machinery will work according to the time fixed.

To make it work automatically, we need to write programs on the main board. That includes how many times the hamster takes food per day, how much food for each time and how long between each meal.

Besides, the feeding instrument is equipped with wireless network module, which realizes remote control by internet. No matter where you are,with your laptop or your phone, you can control the appliance to feed the pet.

5. Project achievement

- This project helped to solve problems of feeding pets punctually when owners are not home.

- During the research, all teammates pulled together and worked as problem solvers on their own initiative.

- They made sound progress in terms of operational ability, IT, innovative thinking, critically thinking and other qualities.