**Goal**

- The goal what we want to achieve is to build a smart pets food box, which allow customers who cannot feed their pets at home several times a day. The aim of this project is to use Arduino through blue tooth to collect the data which user set through our application. Then with the sensors and the microcontroller, the device can open at the time the user set, and put the exact amount of food in the box.

**Motivations and Objectives**

**Motivations**
- A People like keeping pets as companions.
- B But busy life and work make it difficult to feed pets at home.

**Objectives**
- A Design an smart pets food box which allows customer to feed their pets remotely.
- B The device allows customer to check their pets’ states when they are away.

**Research Challenges**

- Challenge 1: Adjusting the voltage difference of blue tooth, Arduino outputs, sensors and stepper motor.
- Challenge 2: Connect the blue tooth with the Arduino.
- Challenge 3: Build the prototype, it’s hard to get the exact shape that we want to make the fan spin smoothly.
- Challenge 4: To make the weight sensor work as the way we want.

**Methodology**

- Step 1 We develop an Android application to control the food box.
- Step 2 Use Arduino and sensors to build a control circuit.
- Step 3 We use blue tooth to connect the control circuit and the Android application.
- Step 4 Build the prototype using 3D printing and few boxes.

**Results**

- User can set the volume and feed time through the application.
- The box can start put food into the bow at the time the user set previously.
- The box will stop putting food into the bow when it gets the exact volume.

**Discussion**

- We have successfully implement the Arduino microcontroller with the weight sensors and stepper motor. The whole system works really well.

**Future Development**

- 1. Water supply; 2. Add camera to the box so that user can check the pets’ states remotely.

**Acknowledgement**

We would like to thank Prof. Godrich.

**References**