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Control Speed of a Motor Using BlueTooth

The goal of this project is to use a microcontroller (Astar32U4) to set up a motor and have Bluetooth technology device module to control the speed of the motor.

Andrew: I have very little experience with Bluetooth which I will be using more this summer in my internship, and also I am just currently learning about embedded systems using microcontroller to control motors and leds. Therefore, my learning objectives are to combine Bluetooth technology to operate an embedded system and collect data of this motor’s speed using Bluetooth.   
  
Xin: since everything is mobile, I would like to know more about setting up wireless connections between multiple boards, then control one board using another board(like button control or others) through the connection. Furthermore, we can experiment with different wireless connection, for example ZigBee, wifi.

Challenges:

-Setting up Bluetooth module and have it synchronize with the microcontroller.

-Learning the module technology and also the ability to collect data from the motor speed using Bluetooth.

-Moreover, using wireless, mobile technology to connect with the microcontroller.

Background Knowledge:

Andrew: I am familiar with networking and setting up LANs. I also know how to use a microcontroller to set up a motor and control the speed the motor with both software and hardware.

Xin: setting up connections between multiple boards, and control one through another. It would be interesting to direct the control to the right boards.

Assignments:  
We will both work on setup and motor control with the microcontroller.   
  
Andrew: I will work on setting up Bluetooth and wireless connection with the microcontroller and utilize the speed and data collection of the motor.   
  
Xin: I will work on setting up wifi, ZigBee wireless connections between multiple boards. Also, work on the control flow between boards.