DIY a Christmas Remote Control Robot named Danboard

修订历史

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1.1 Brief

This time I'd like to share you a new project A Christmas Remote Control Robot named Danbo using Arduino. We use 2 Arduino UNOs for this project, one is for the robot side, and the other is for the remote controller side. We use a couple of wireless module for the communication. In our project, the robot can move his head and arms as well as waist.
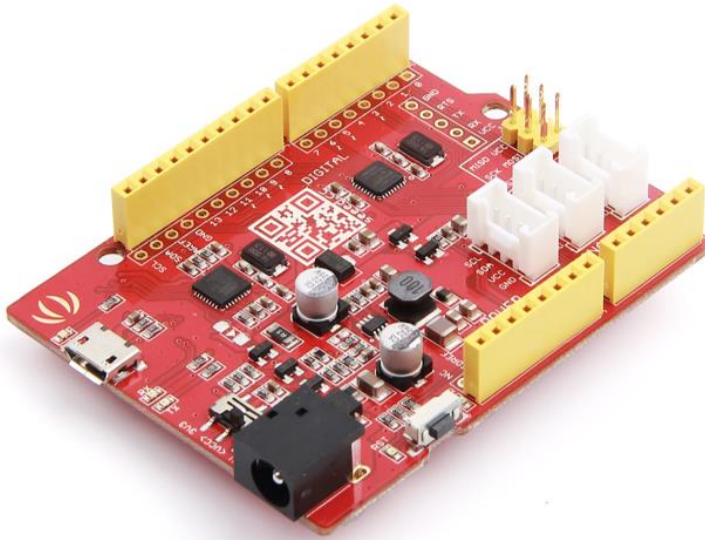
Danbo (ダンボー) is a fictional cardboard box robot character from Kiyohiko Azuma's manga series [Yotsuba&!](). In the ADV Manga English translation of the manga the name Cardbo was used, but the name was restored to Danbo in the later released Yen Press English translation. In reality, Danbo is merely a person inside of a costume made of cardboard. Danbo was later picked up as an Internet meme, and inspired various electronic gadgets.
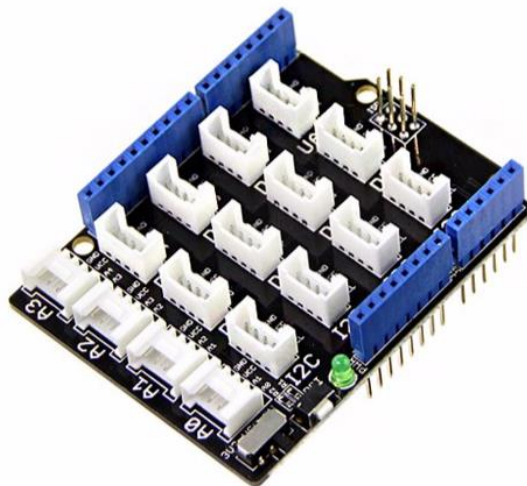

1.2　What do we need

● Seeeduino V4.2

https://www.seeedstudio.com/Seeeduino-V4.2-p-2517.html

● Base Shield

https://www.seeedstudio.com/Base-Shield-V2-p-1378.html

● Grove – Servo * 5
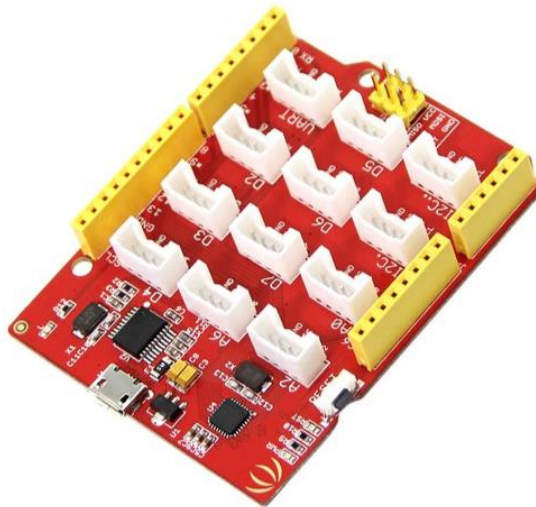

https://www.seeedstudio.com/Grove-Servo-p-1241.html

- Wireless communication module

https://www.seeedstudio.com/XRF-wireless-RF-radio-UART-serial-data-module-XBee-shaped-p-1851.html

- Seeeduino Lotus (Arduino Compatible)

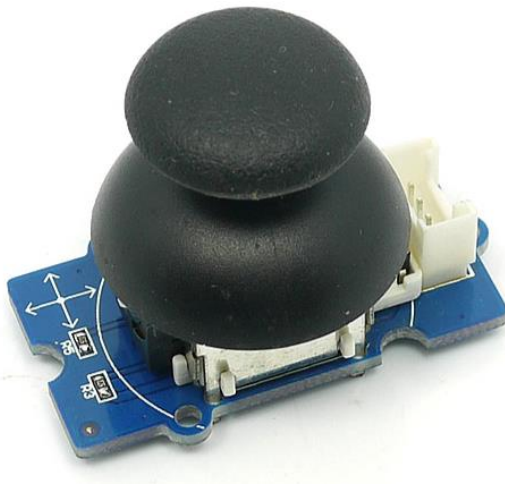https://www.seeedstudio.com/Seeeduino-Lotus-ATMega328-Board-with-Grove-Interface-p-1942.html

- Grove – Button(p) * 2

http://www.seeedstudio.com/Grove-Button(P)-p-1243.html

- Grove – Thumb Joystick

https://www.seeedstudio.com/Grove-Thumb-Joystick-p-935.html
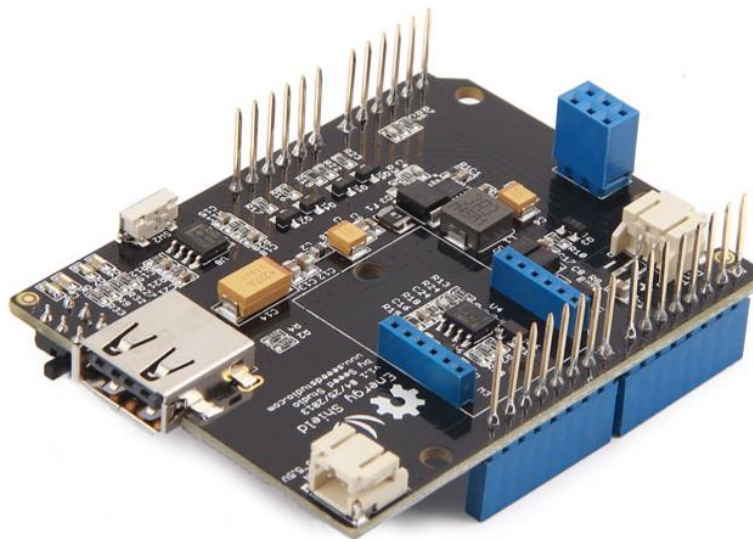

- Energy Shield

https://www.seeedstudio.com/Energy-Shield-p-1373.html

1.3 Wiring

Now, we should connect the Grove Servo and wireless module to the Seeeduino which is used for robot side.

Modules	Port
Grove – Servo(Left arm)	D4 port on Base Shield
Grove – Servo(Right arm)	D5 port on Base Shield
Grove – Servo(Nod head)	D2 port on Base Shield
Grove – Servo(Shake head)	D7 port on Base Shield
Grove – Servo(Waist)	D6 port on Base Shield
Wireless module	UART port on

For remote controller side, we should connect Grove modules to the Seeeduino lotus.

| Modules	Port
Grove – Button(Left)	D4 port on Seeeduino Lotus
Grove – Button(Right)	D5 port on Seeeduino Lotus
Grove - Thumb Joystick(Left)	A0 port on Seeeduino Lotus
Grove - Thumb Joystick(Right)	A2 port on Seeeduino Lotus
Wireless module	UART port on Seeeduino Lotus

1.4 Software Work

The software work of this project is two parts, one part is for the robot side, and the other side is for the remote controller

1.4.1 Upload the Arduino Code for the robot

1. Download demo code at https://github.com/Lee-Kevin/Danboard/
2. Click "Download zip" button on right side of webpage to download all codes.
3. Decompress the downloaded zip files to"C:\Users\Administrator\Documents\Arduino\" and remove "-master" in decompressed file name.

4. Launch Arduino IDE.

5. Click Sketch>Add file to add Robot.ino file from"C:\Users\Administrator\Documents\Arduino\ Danboard\Robot\".

6. Click Tools -> Board and select "Arduino/Genuino Uno" and chose the right port, as shown in the picture below.
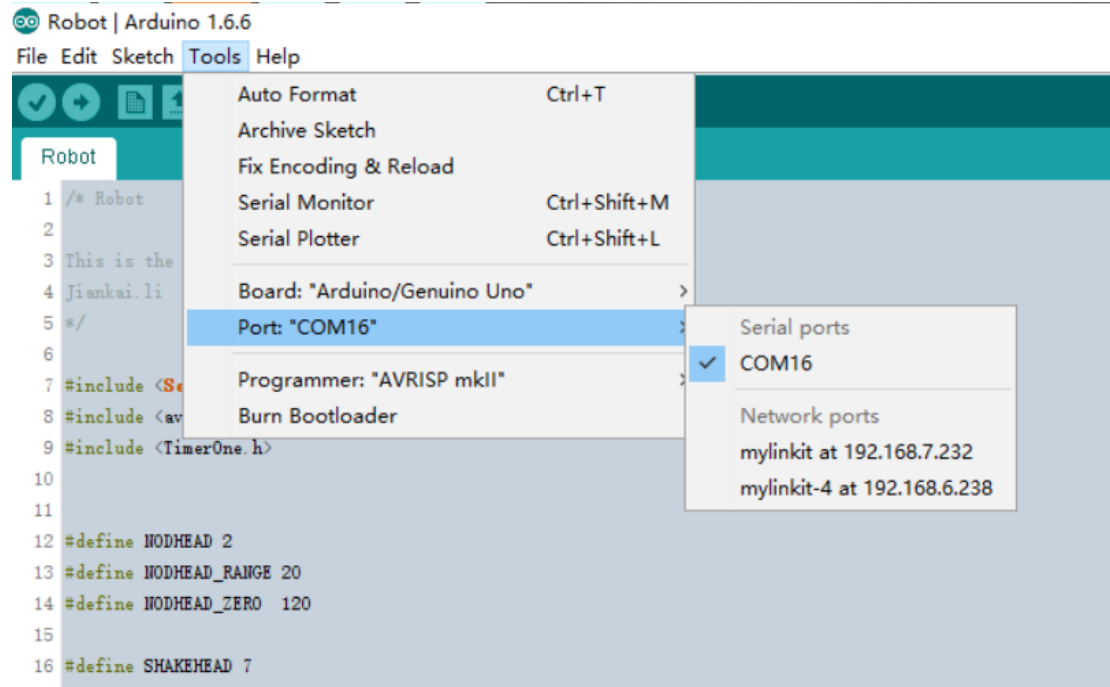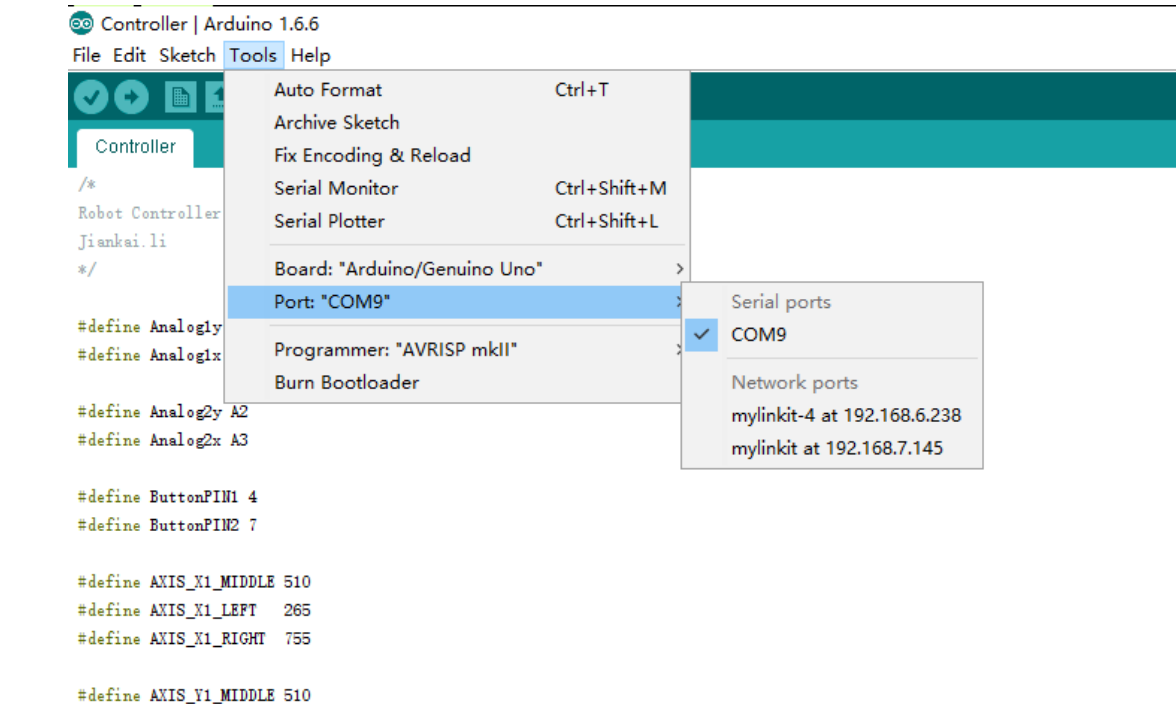

7. Press CTRL +U to upload codes to your board. Wait a while, there will be saying "Done uploading".

8. Congratulations, you have already completed the robot side software work.

1.4.2 Upload the Arduino Code for the controller

Upload the controller side code

1. Download demo code at https://github.com/Lee-Kevin/Danboard/

2. Click "Download zip" button on right side of webpage to download all codes.

3. Decompress the downloaded zip files to"C:\Users\Administrator\Documents\Arduino\" and remove "-master" in decompressed file name.

4. Launch Arduino IDE.

5. Click Sketch>Add file to add Controller.ino file from"C:\Users\Administrator\Documents\Arduino\ Danboard\Controller\".

6. Click Tools -> Board and select "Arduino/Genuino Uno" and chose the right port, as shown in the picture below.

7. Press CTRL +U to upload codes to your board. Wait a while, there will be saying "Done uploading".

8. Congratulations, you have already completed the controller side software work.

1.5 Hardware Work

About the hardware part work, you can refer the description on the INSTRUCTABE website.

https://www.instructables.com/id/DIY-a-Christmas-Danbo-Robot-With-Remote-Control/

1.6 The Result

Now, you can control the robot with the remote controller as the video shows.

https://vimeo.com/193668225

1.7 Make. Invent. Do.

This project is made as an Open Source Project. It's a starting point. Let your creativity go wild with the mechanical, electrical and software design. Make the demo your own. Decorate it. Improve the work. No matter what, write a recipe about it.

To share and progress together.