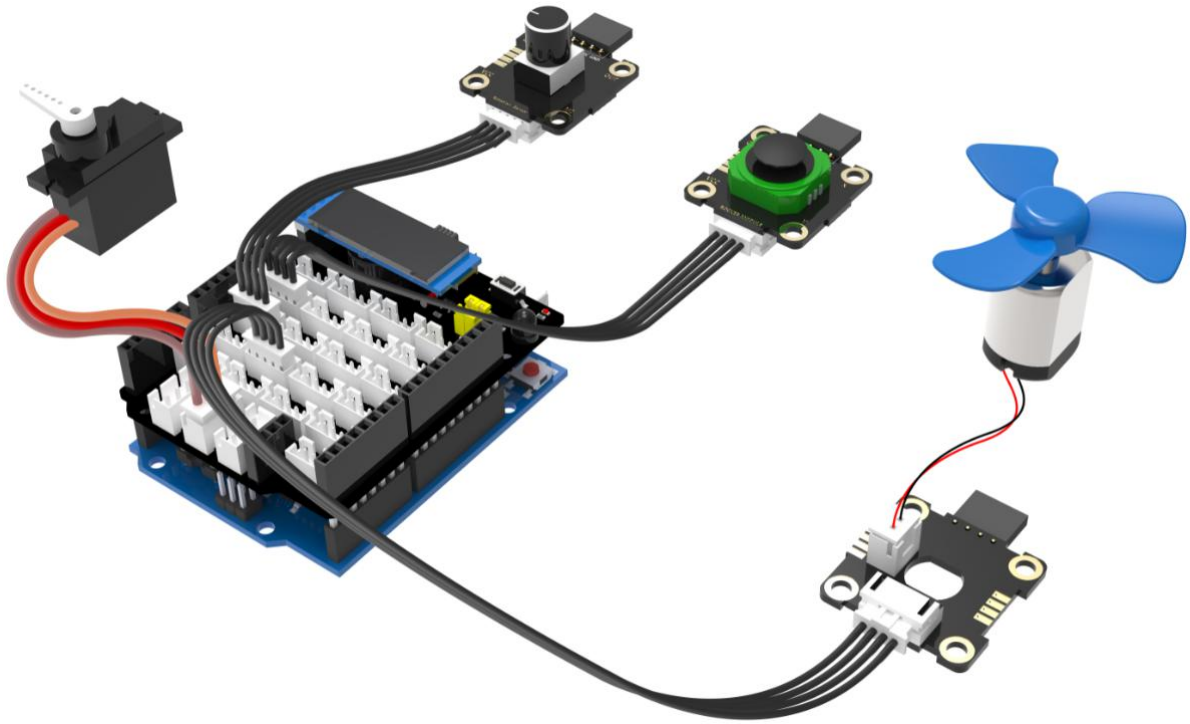
Experimental content: Adjust the angle of the servo through the potentiometer module, adjust the wind speed by turning the X-axis direction of the rocker module, and switch the fan mode by turning the Y-axis direction of the rocker module. There are two modes, automatic shaking mode and potentiometer adjustment mode. The OLED displays wind speed and rotation angle in potentiometer adjustment mode.

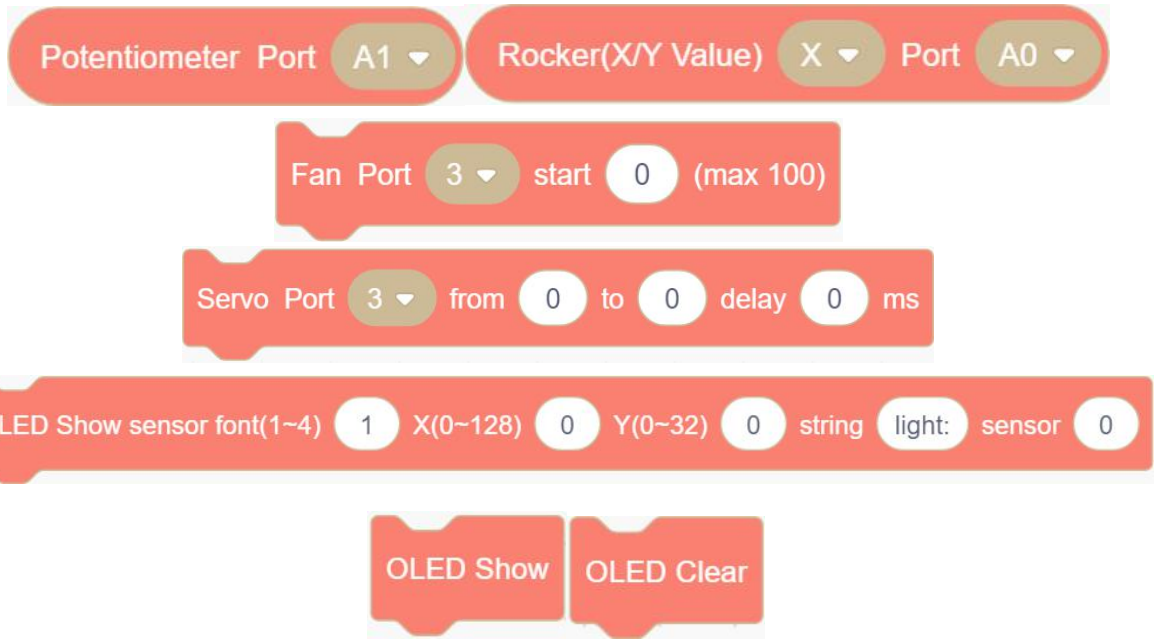
Experiment preparation: UNO board *1, Plugkit sensor expansion board *1, 4pin cable (PH2.0) * 3, USB data cable *1, Rocker module *1, Potentiometer module *1, 9G metal digital servo *1, 0.91 inch OLED *1, Motor fan *1, Motor drive module *1

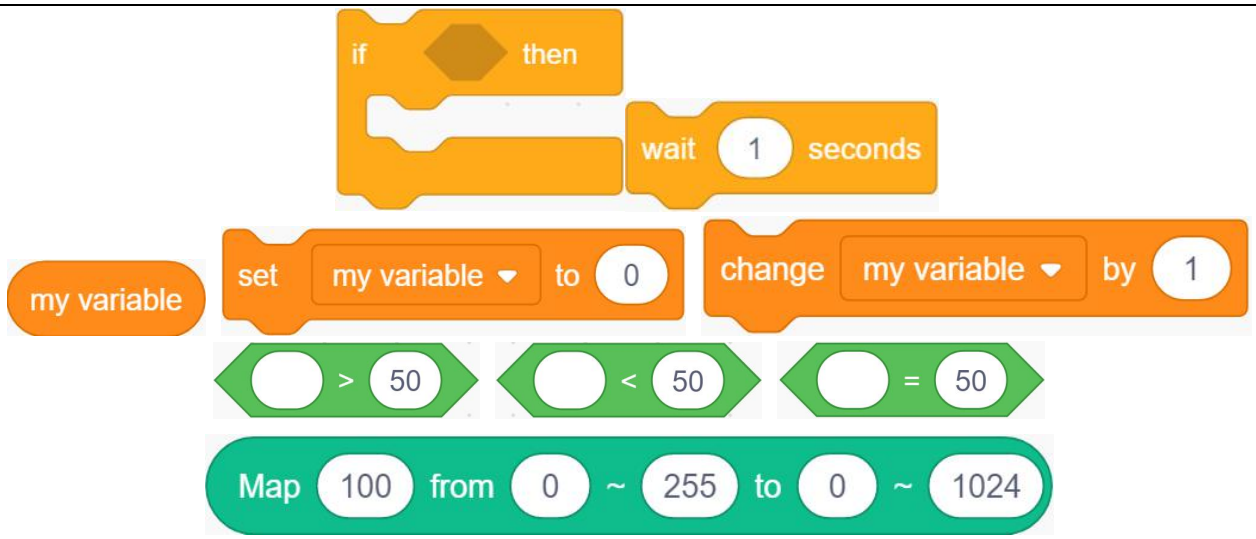
Experimental wiring:



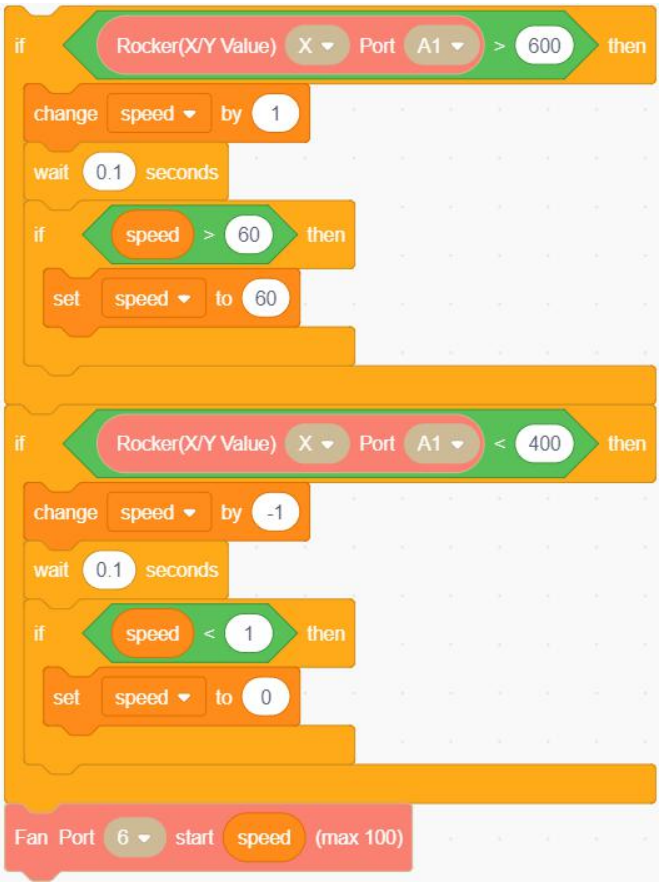
Experimental steps:

1.Select the following blocks in the [Plugkit], [Control], [Operator], [Variable], [arduino].

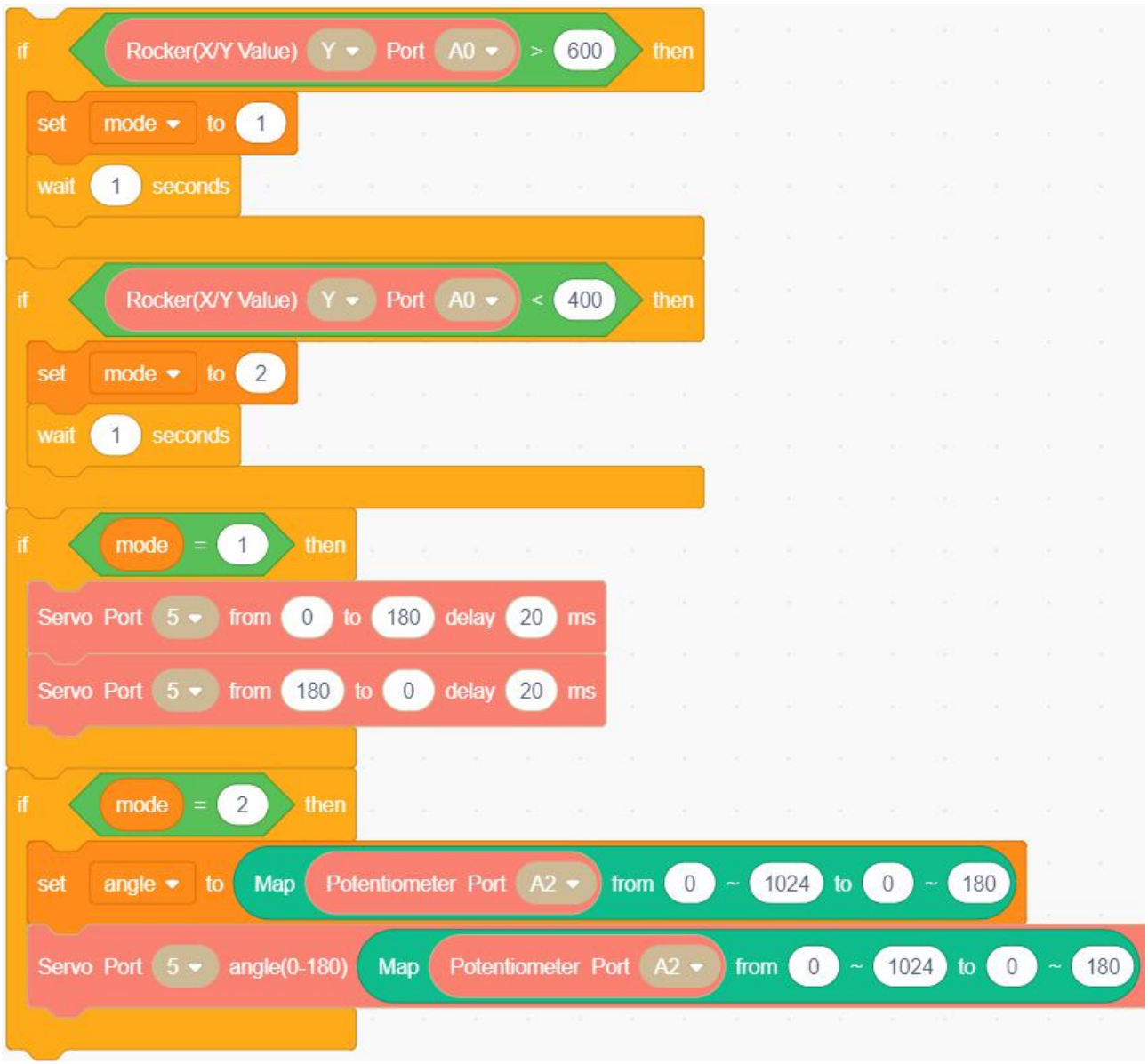




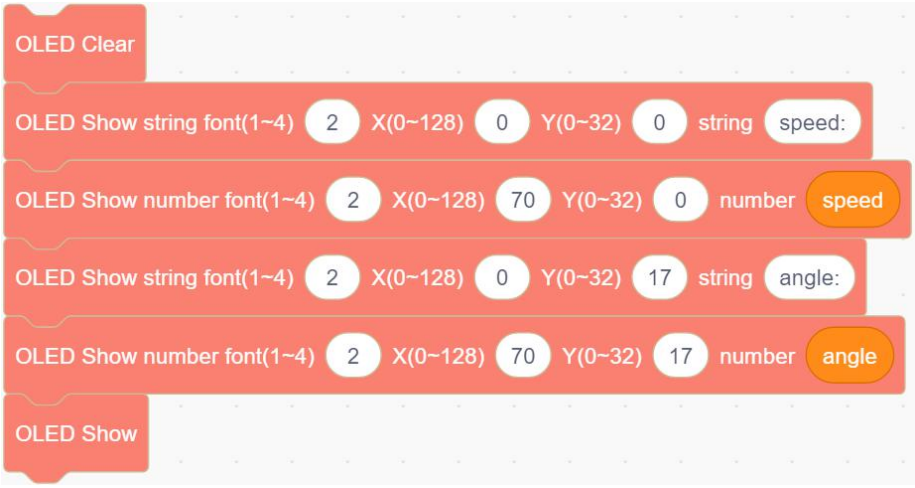
2.The rocker controls the wind speed. Move rocker to the left of to X axis direction to decrease the wind speed. Move rocker to the right of to X axis direction to increase the wind speed. The maximum wind speed is 60 and the minimum is 0.



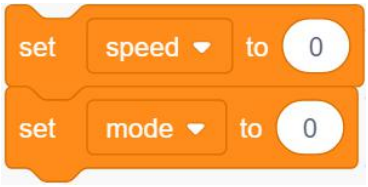
3.The rocker switch the servo mode. Mode 1 is automatic shaking mode and mode 2 is potentiometer adjustment mode. Move rocker to up of Y axis direction is enter mode 1, move rocker to down of Y axis direction is enter mode 2.



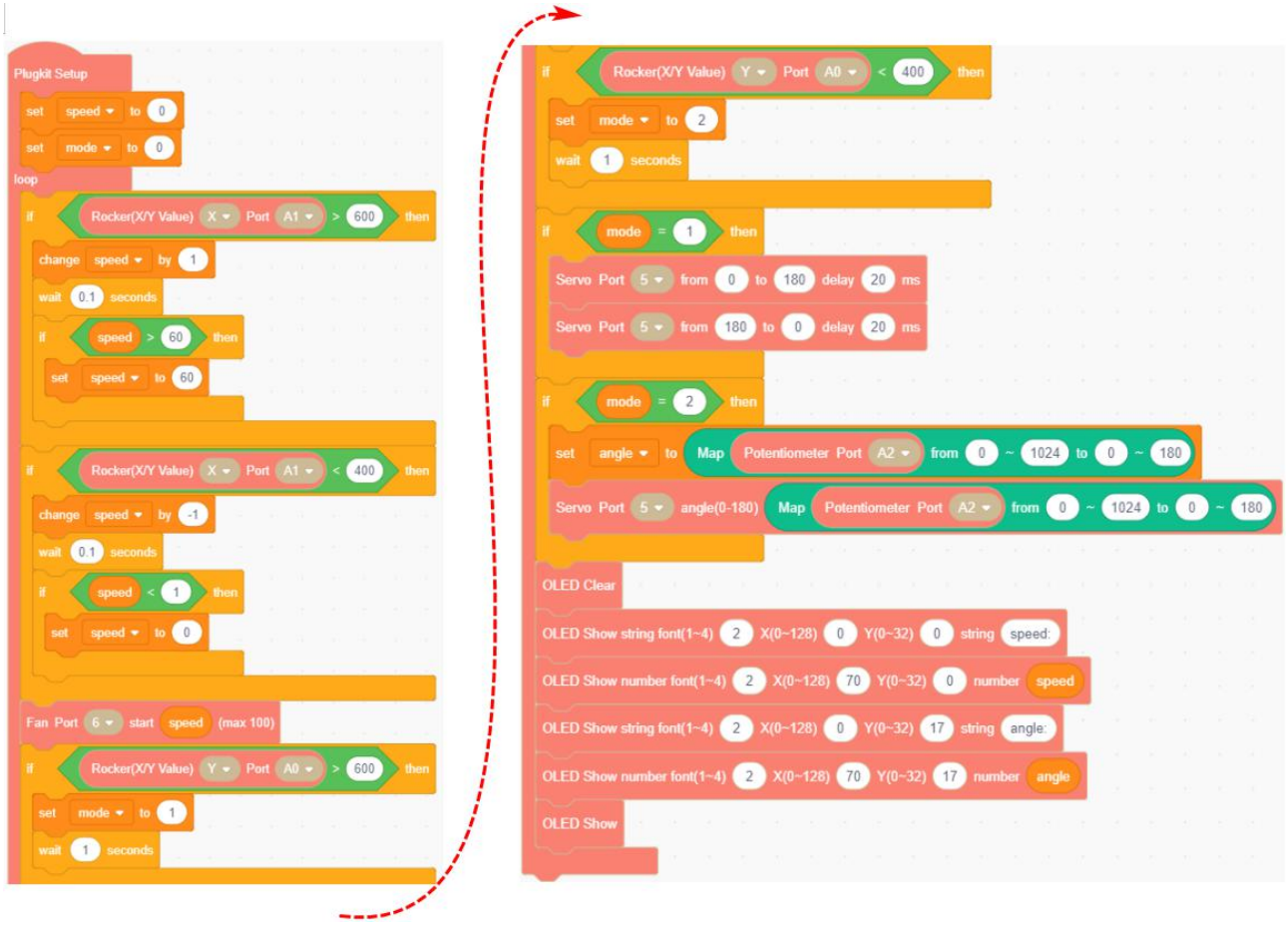
4.The first line of the OLED shows speed: wind speed, the second line shows angle: rotation.



5.The initialization part, set speed to 0 and the set mode to 0.



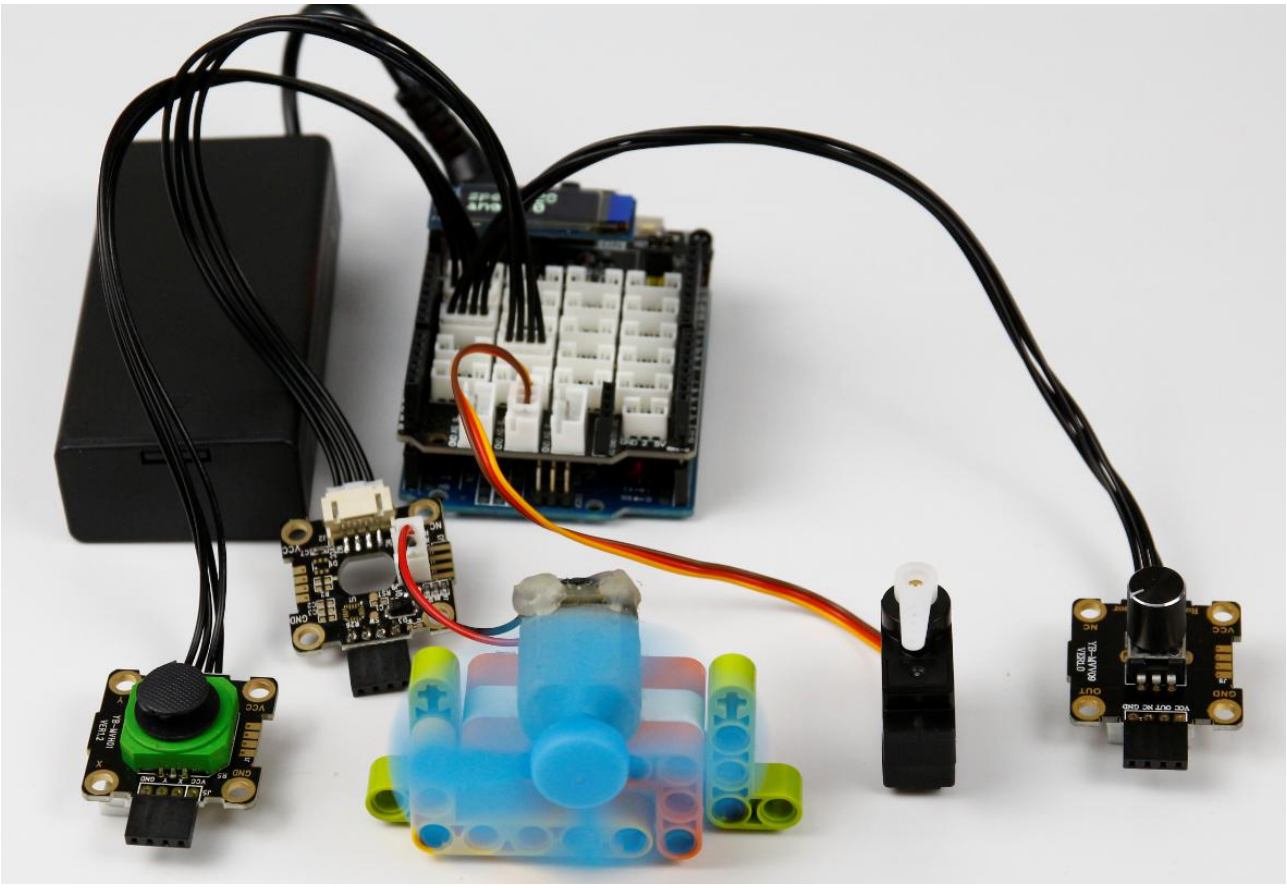
6.Put the initialization part of step 5 into the setup block, and combine the blocks of steps 2, 3, and 4 and put them in the loop block. Because the final program is too long, we only provide program step-by-step. The complete program can refer to the .sb3 file provided by us.



7.Compiling and uploading programs.

Experimental phenomena: Adjust the angle of the servo through the potentiometer module, control the blowing direction of the fan. And adjust the wind speed by turning the rocker module in the X axis direction. Move rocker to the left of to X axis direction to decrease the wind speed. Move rocker to the right of to X axis direction to increase the wind speed.

We can switch the fan mode by moving the rocker module in the Y-axis direction. Move rocker to up of Y axis direction is enter automatic shaking mode, move rocker to down of Y axis direction is enter potentiometer adjustment mode. The OLED displays wind speed and rotation angle in potentiometer adjustment mode.



Note: If a USB data cable is used to power the UNO board and the restart situation is unstable, it recommended use battery box for power.

Expand after class

1.Using the four button module to realize the function of the rocker module.