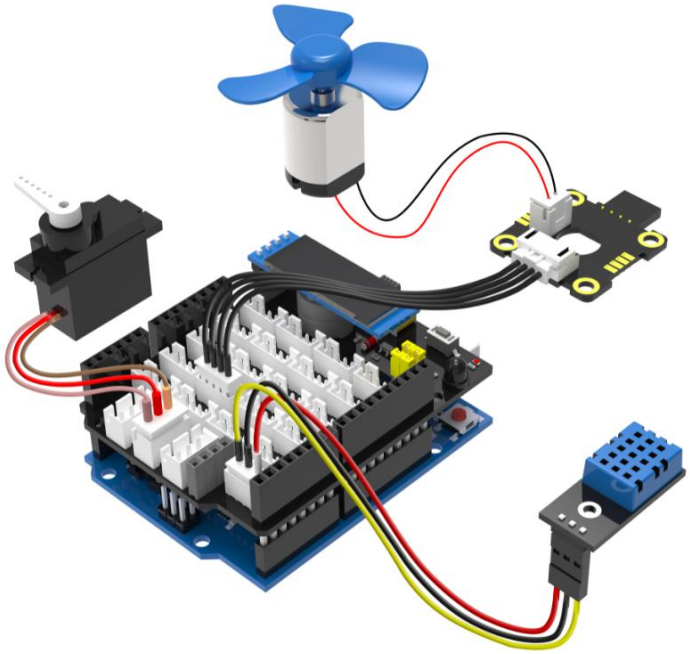
Experimental content: Display the current temperature and humidity environment by OLED. When the temperature and humidity is higher than the set value, the buzzer will alarm and turn on the fan. When the temperature and humidity is lower than the set value, the buzzer will close and turn off the fan.

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

Experimental wiring:

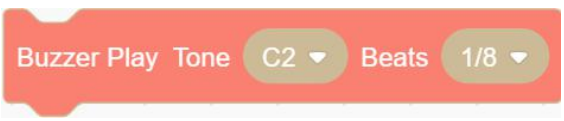


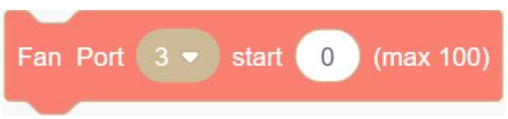
OLED is connected to the interface of the sensor expansion board with silk screen (SDA ,SCL, VCC, GND) .

Servo is connected to the interface of the sensor expansion board with silk screen (~5, 5V, GND).

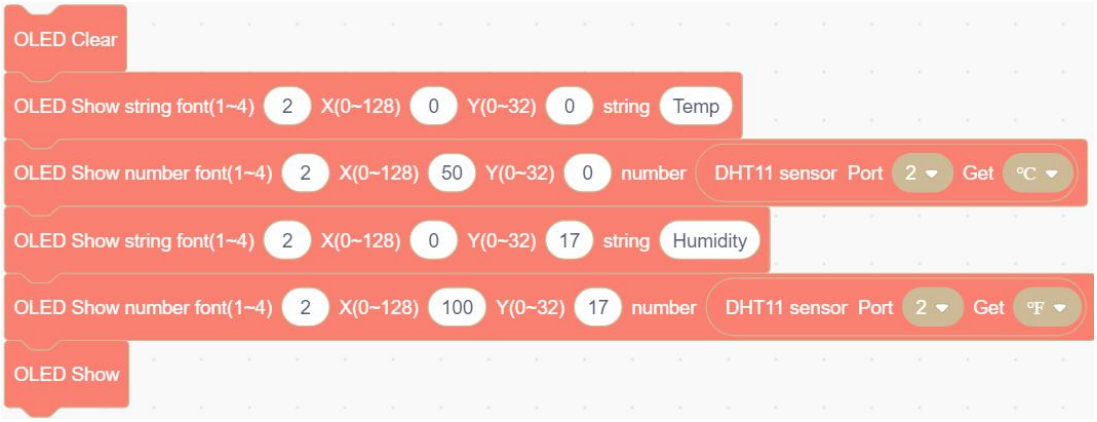
Experimental steps:

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

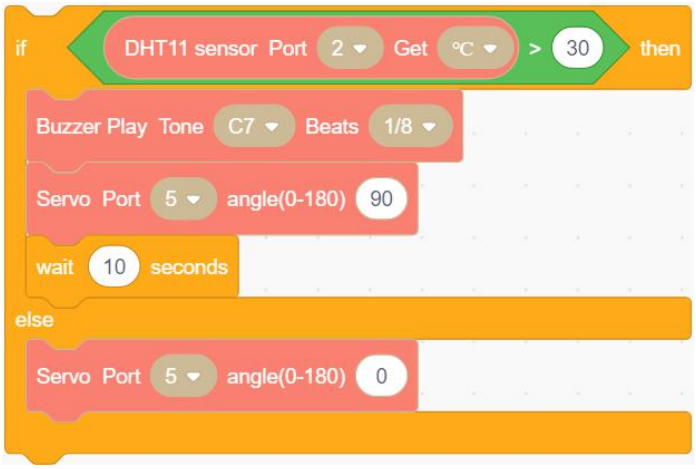




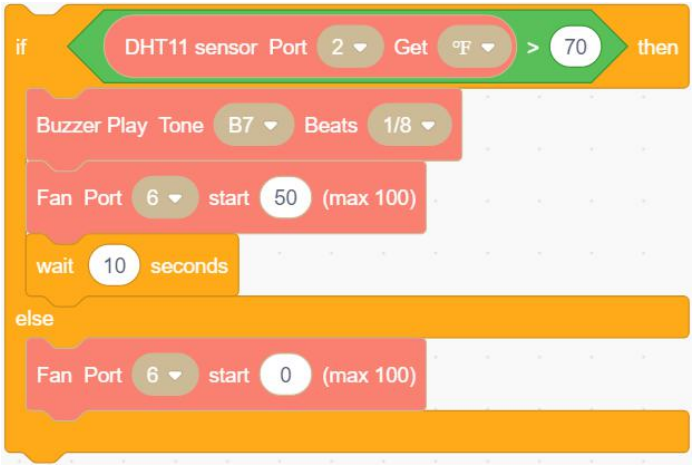
2. The OLED displays the temperature and humidity sensor data, which can be implemented by using only one or two OLED display sensor data block to simultaneously print the string and sensor data. [Note: the starting position of the OLED display humidity block should be set to (0,16)]



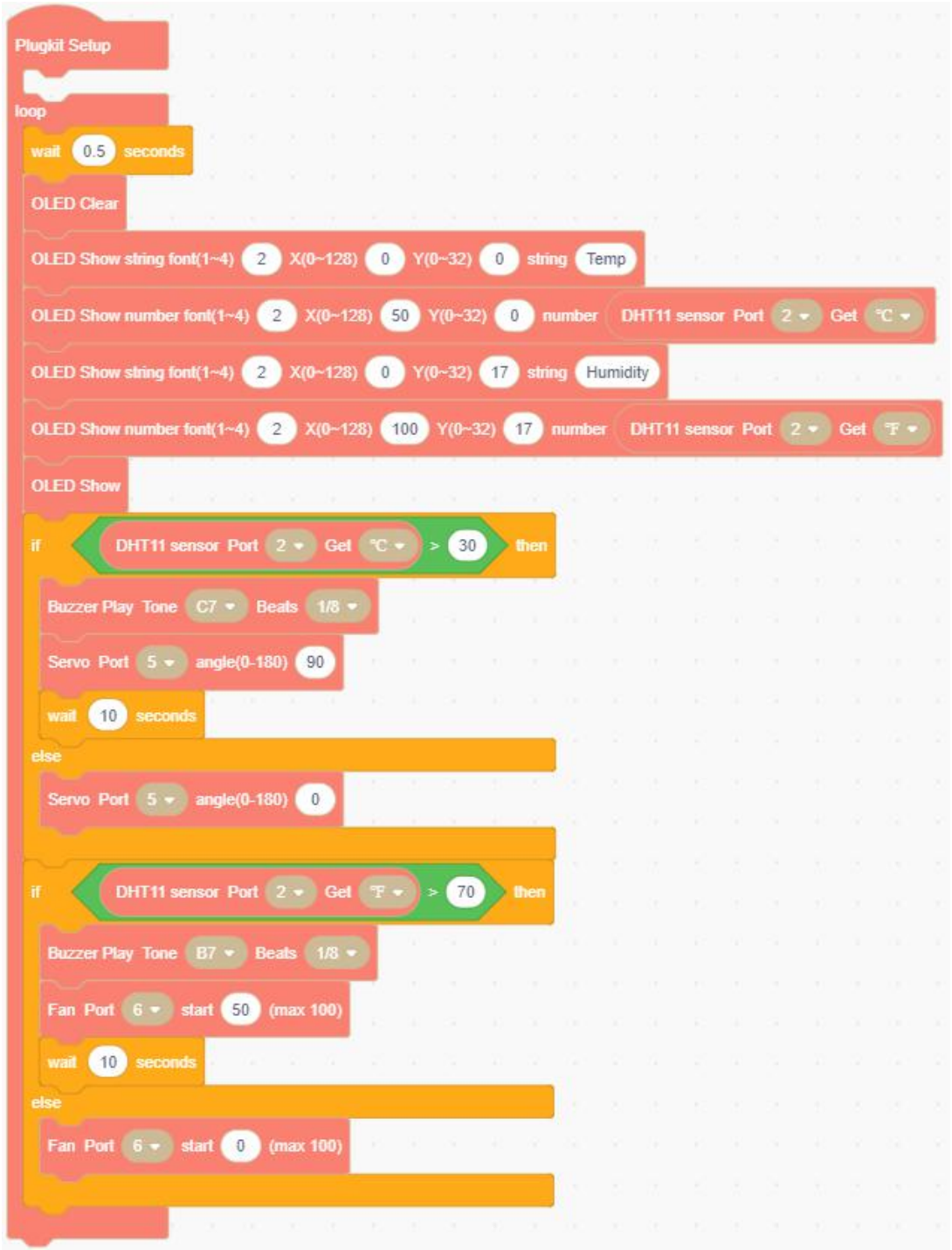
3.If the temperature value collected by the sensor is greater than 30 ° C, the buzzer will emit a C7 tone with 1/8 beat, and the servo will rotate to 90 °, and wait for 10s. Otherwise, the servo will rotate to the 0 °. Because the temperature change is not obvious, we must add waiting for 10s block, to avoid buzzer will always alarm. The temperature and humidity data value on the OLED display will be refreshed every 10 seconds.



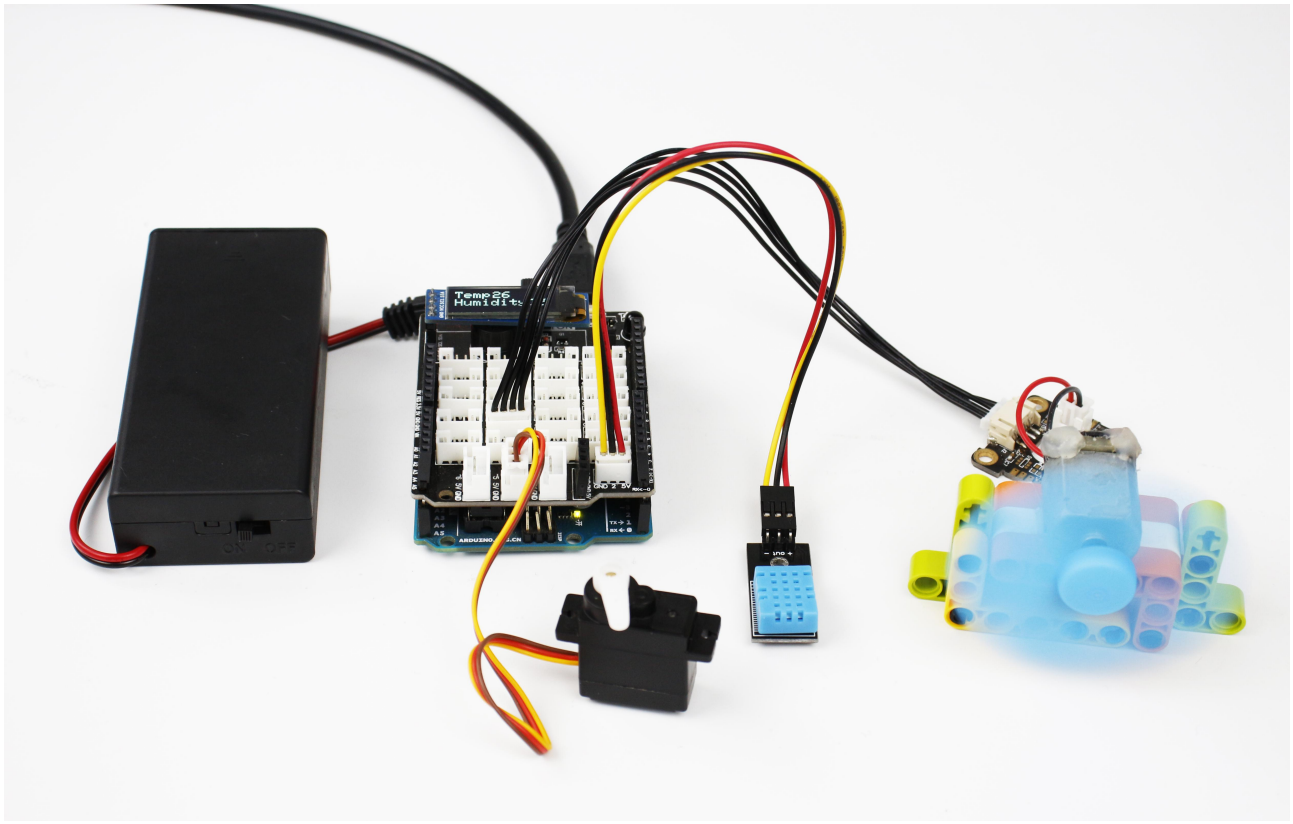
4.If the temperature value collected by the temperature and humidity sensor is greater than 30 ° C, the buzzer will emit a B7 tone with 1/8 beat, and the fan with speed 50. Otherwise, the fan will stop.



5.Put the block combination of step 2,3,4 into the loop block.



6.Compiling and uploading programs.

Experimental phenomena: The OLED display shows Temp: temperature value, Humidity: humidity value. If the temperature is higher than the upper limit of the temperature value, the buzzer will alarm, the servo rotates 90 °, and the window is simulated to open. Otherwise the servo returns to 0 °, and the window is simulated to close. If the humidity is higher than the upper limit value, the buzzer will alarm and fan will rotate, otherwise the fan stop rotating.

Note: If the USB data cable is used for power supply, the UNO board may restart due to unstable voltage. It is recommended to use a battery box for power supply.