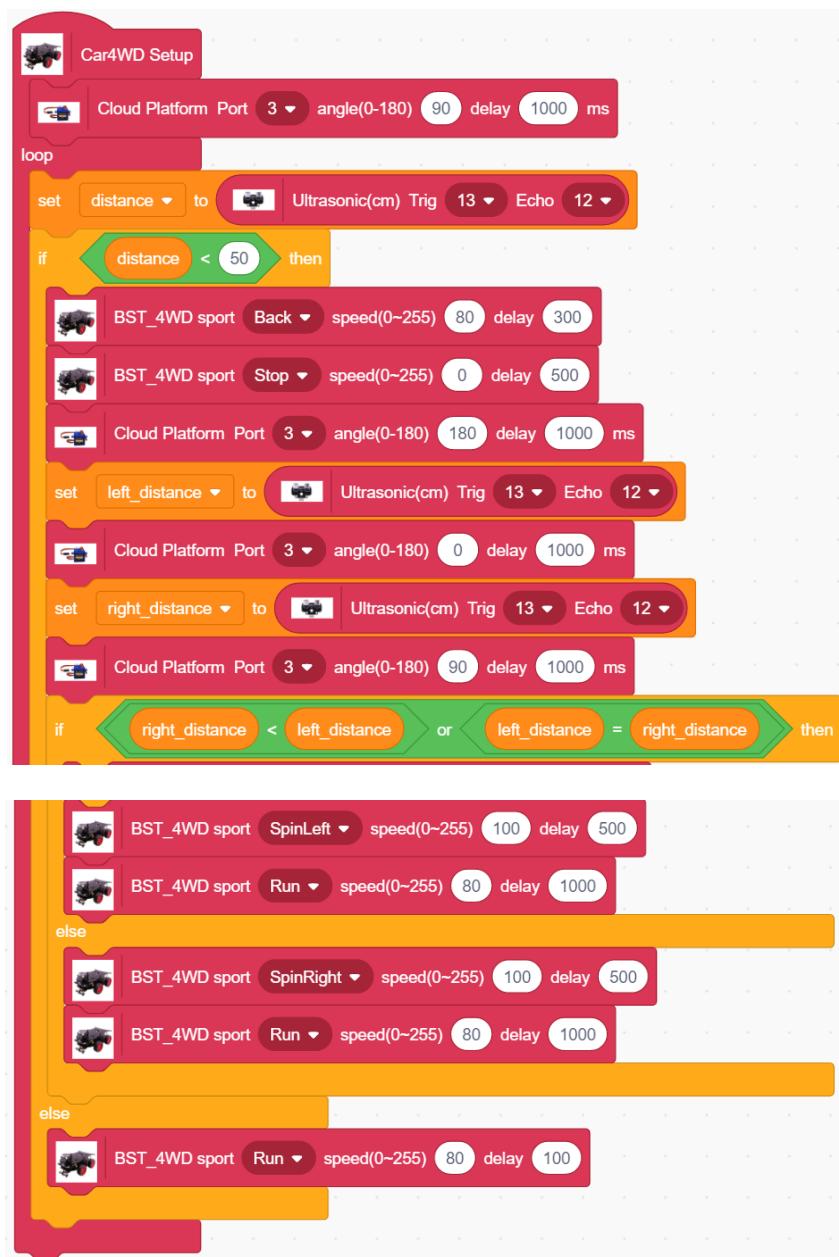


16.Ultrasonic obstacle avoidance with servo

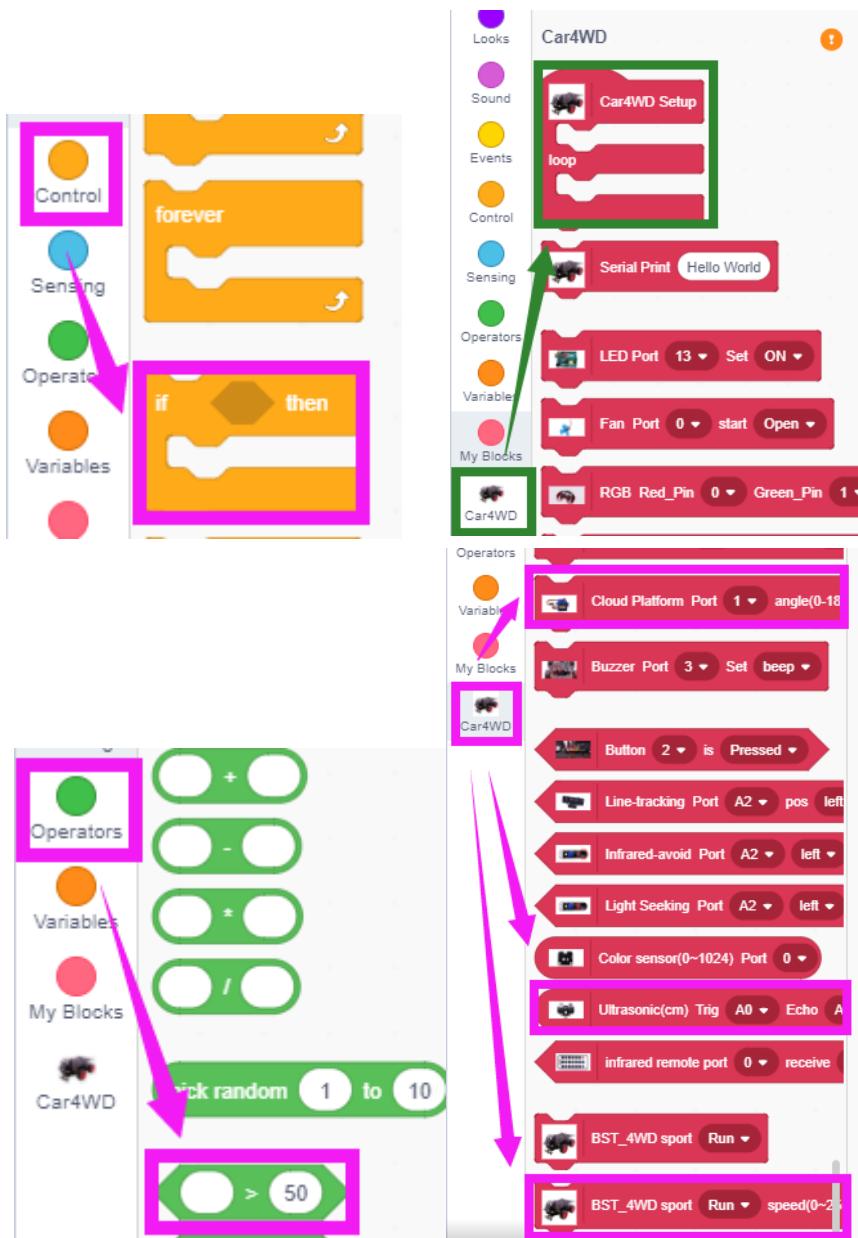
! !Note:

1. It is normal for the ultrasonic module to measure the distance with a certain error.
2. You can modify the time or speed parameter in the program according to your actual situation.
3. Before installing the ultrasonic module, we need to turn on the power switch of the car, make the servo initialize to 90°, then we can install the ultrasonic module on the servo.

The summary program of this experiment is shown below:

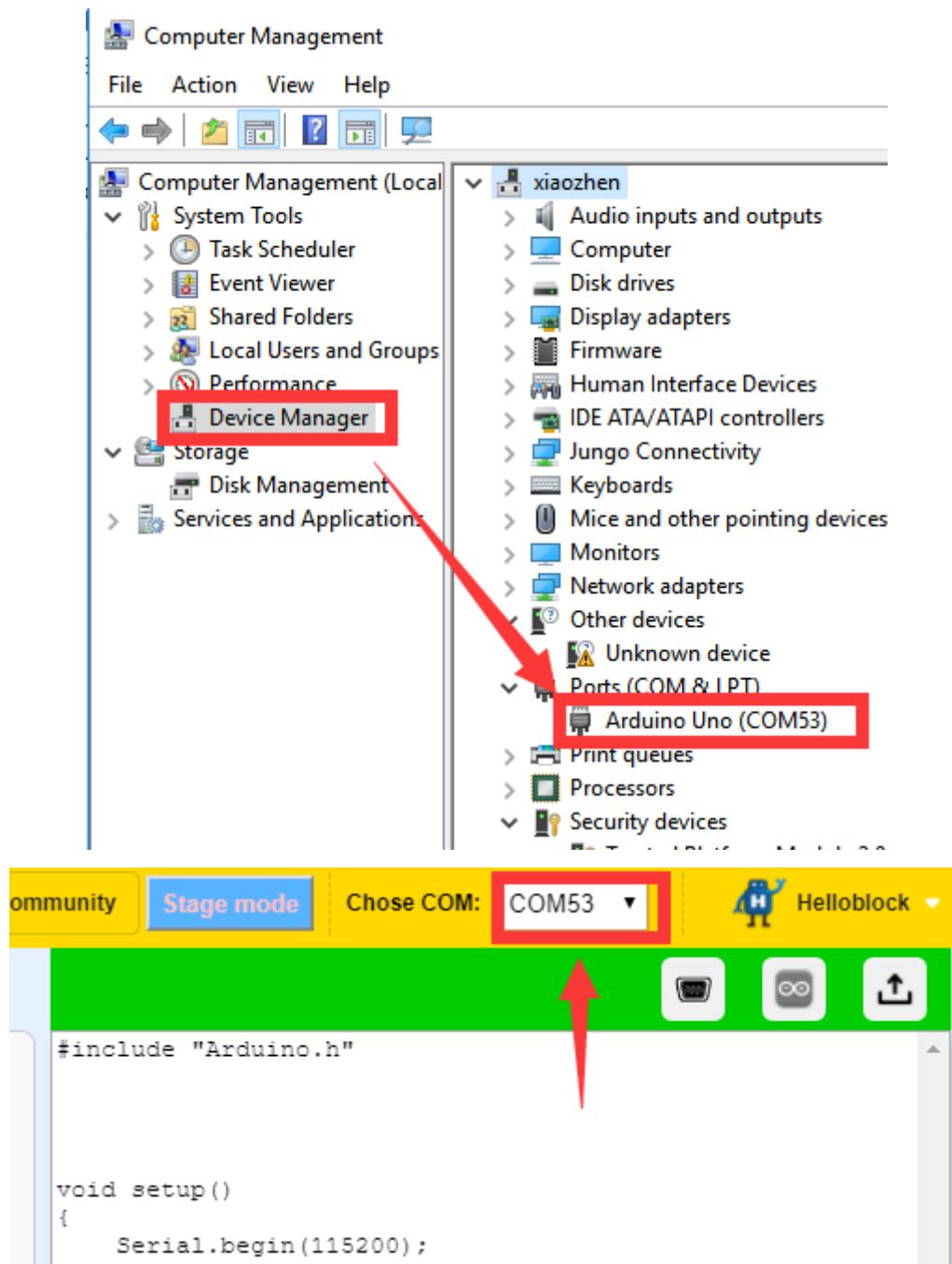


1.Search for blocks

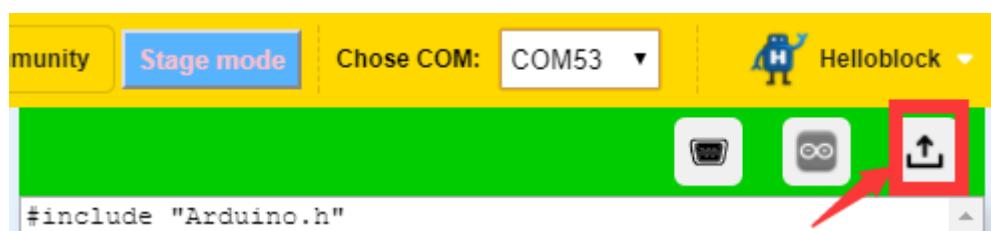


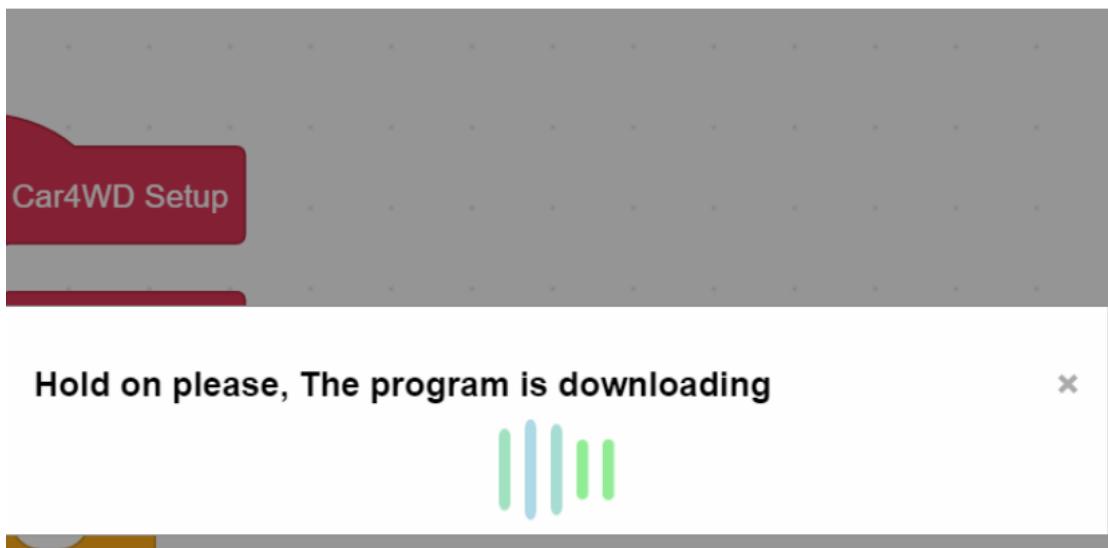
2. Download program

2.1 In the upper right corner of Helloblock, we need to select the port that the serial number displayed by the device manager (for example:COM54) As shown in the figure below.



2.2 Click the up arrow to start compiling and uploading the program. It will take a certain amount of time, we need to wait patiently.





It takes a certain amount of time to compile the program, and everyone needs to wait patiently.

2.3 When the words "Done compiling" "Done uploading" appear in the lower right corner of the programming interface, as shown in the following figure, the program has been uploaded.

```
>C:\Program Files  
(x86)\Helloblock\resources\Arduino\libraries\YahBoo  
m\YahBoom_OMIBOX.cpp:381:6: note: initializing  
argument 1 of 'void  
YahBoom_OMIBOX_Matrix::YahBoom_OMIBOX_Matrix_ShowIc  
on(byte*)'  
  
void  
YahBoom_OMIBOX_Matrix::YahBoom_OMIBOX_Matrix_ShowIc  
on(byte *character)  
  
>Sketch uses 3292 bytes (10%) of program storage  
space. Maximum is 32256 bytes.  
>Global variables use 842 bytes (41%) of dynamic  
memory, leaving 1206 bytes for local variables.  
Maximum is 2048 bytes.  
Done compiling. Done uploading!  
Status for device done.  
-----  
Baud: 115200  
Parity: None
```

3.Experimental phenomena

After the program is downloaded, we need to turn on the power, the car will keep moving forward. When encountering obstacles, the car will back 300 ms, then stop 500 ms, the servos will rotate to 0° and 180°. At the same time, the ultrasonic module will measure the distance between the obstacles on the left and right sides. If the distance on the left side is larger, the car will spin left; If the right side distance is larger, the car will spin right to avoid obstacles. Next, the car will advance