

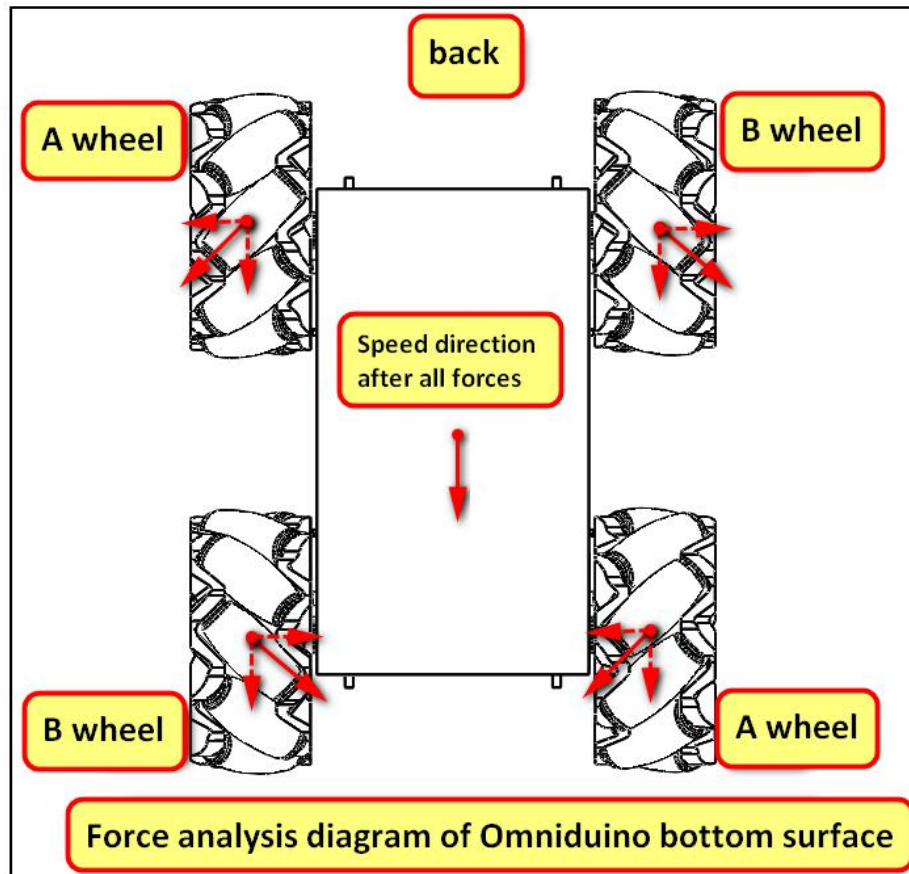
CarRun

1. Learning goal

On the basis of the previous lesson, the function of multi-directional movement such as the front, back, left, and right of the car is added.

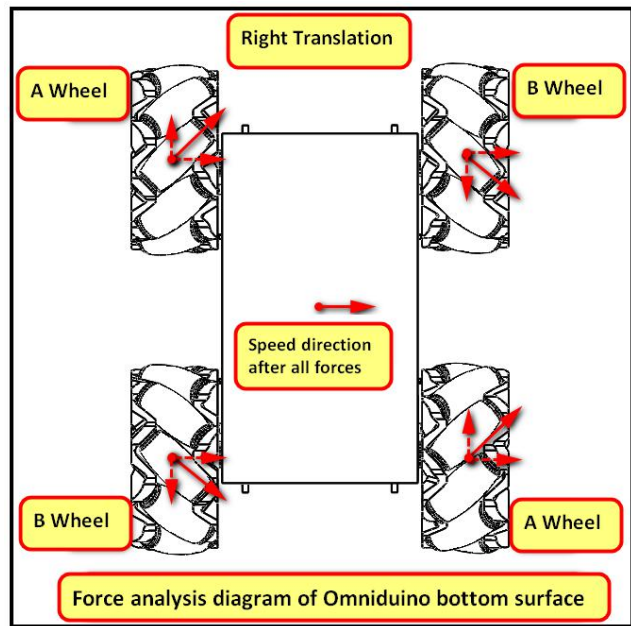
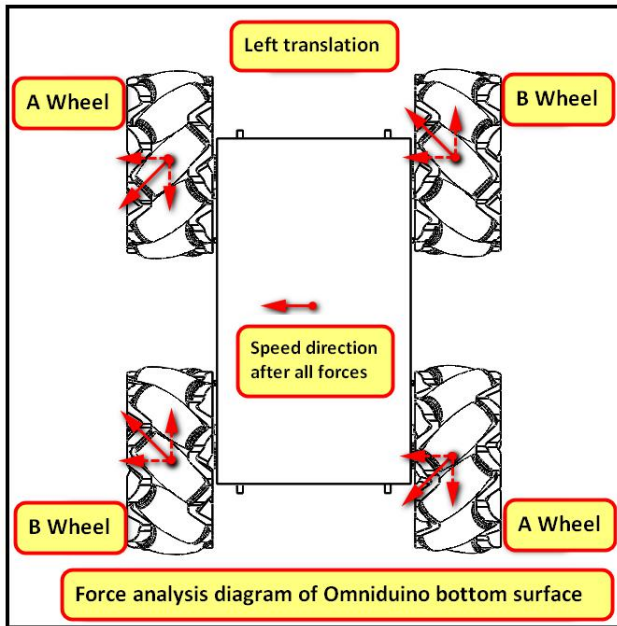
2. Force Analysis:

2.1 According to the characteristics of the Mecanum wheel, if the omniduino car back, the four wheels must rotate reserve. The force analysis diagram is shown below:



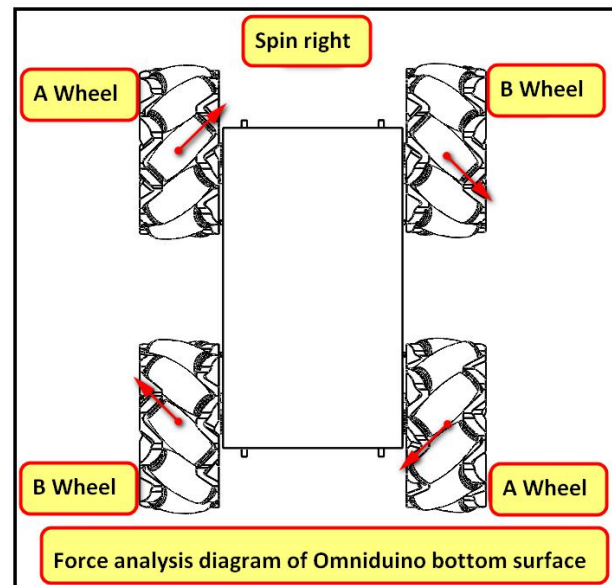
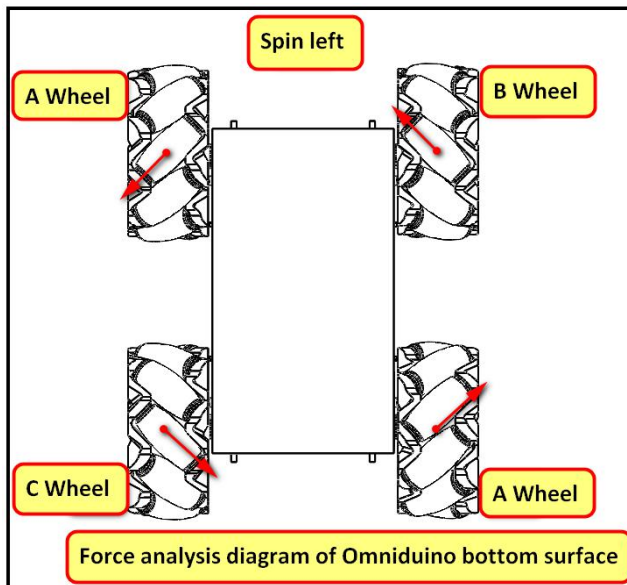
2.2 When A wheel reserve and B wheel forward, car left translation.

2.3 When A wheel forward and B wheel reserve, car right translation.



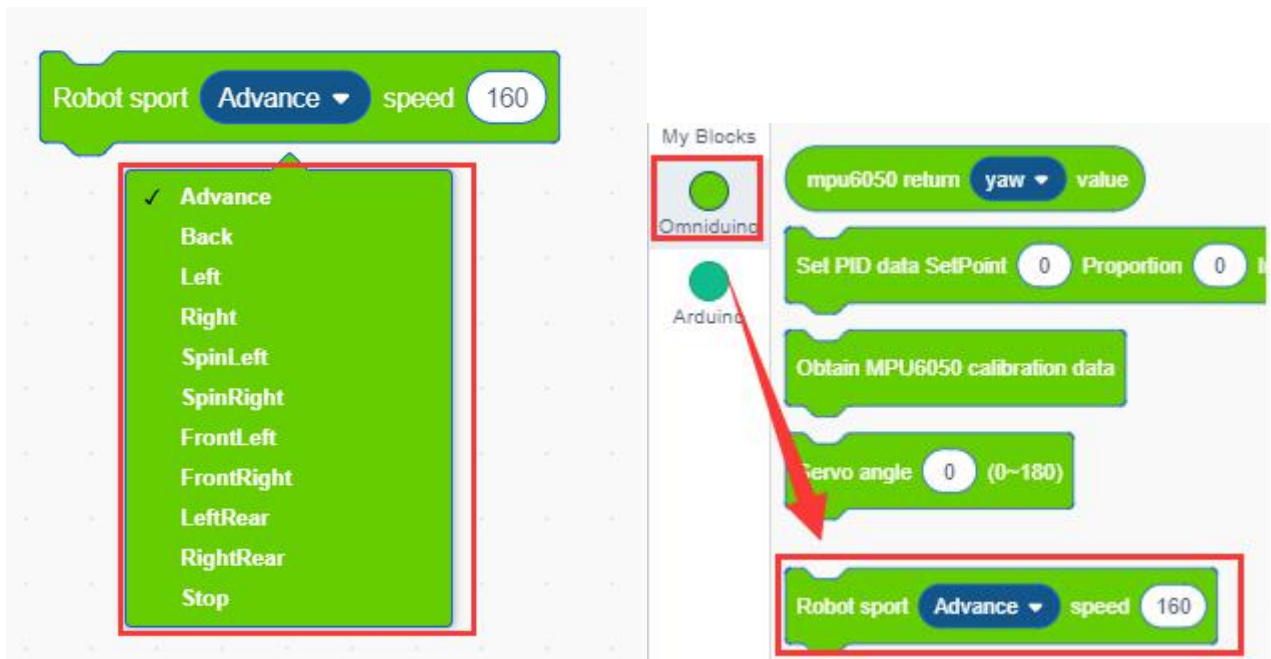
2.4 When left wheel reserve and right wheel forward, car spin left.

2.5 When left wheel forward and right wheel reserve, car spin right.

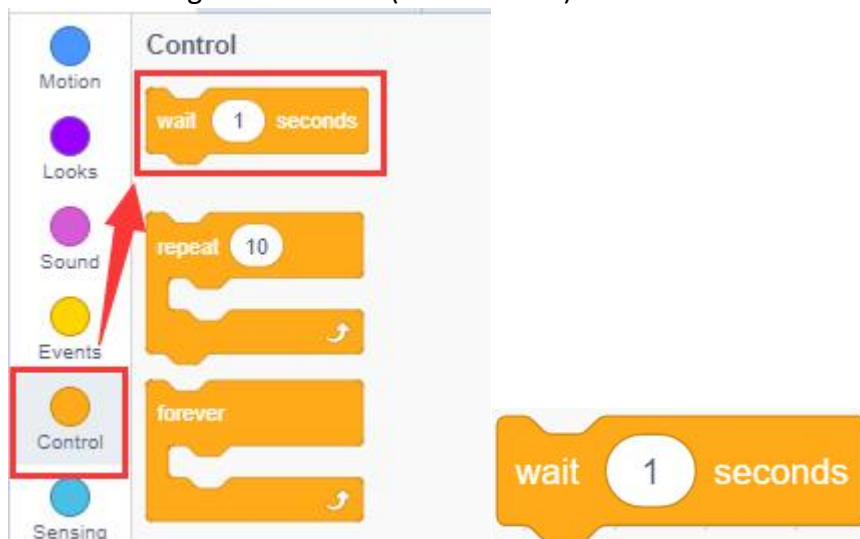


3.Looking for building blocks

1) Robot sport building block, we can choose movement status, the speed is adjustable between 0-160.



2) The function of waiting for the blocks is equivalent to the delay function in the program. We can enter different values according to our needs. (Unit: second)

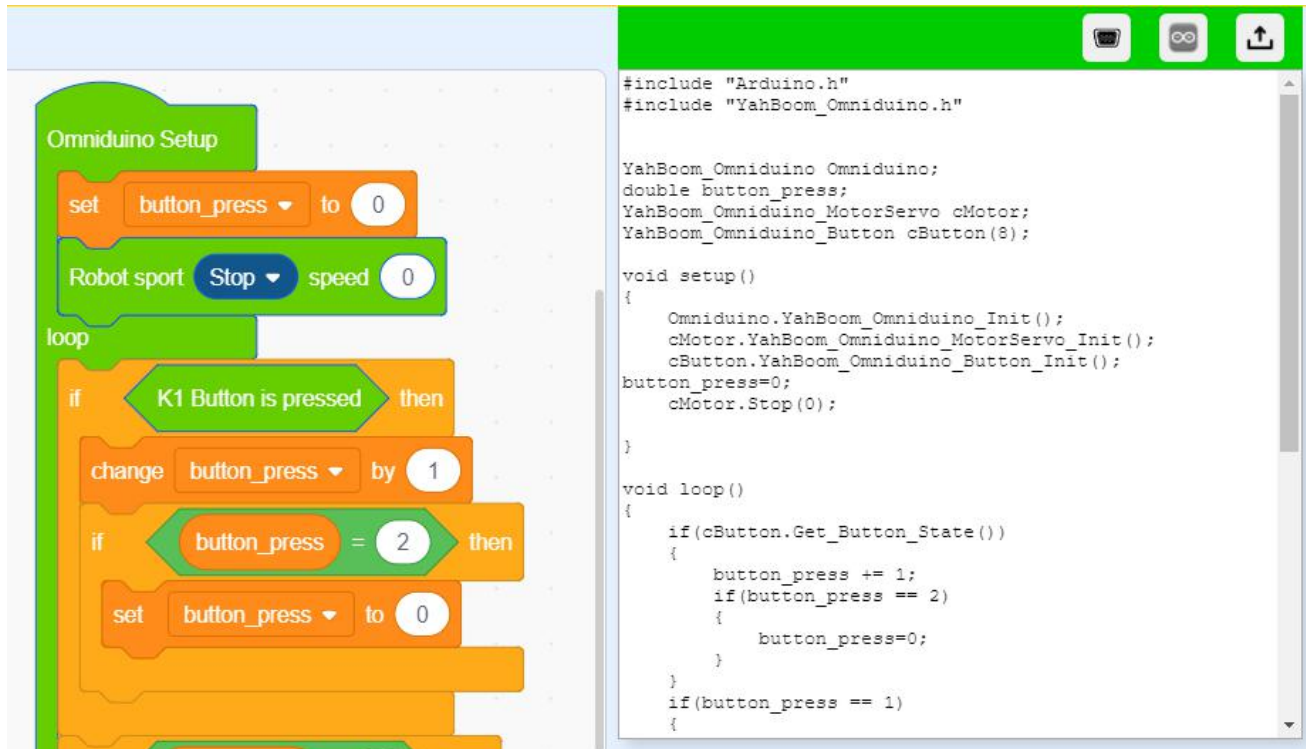


Combine blocks



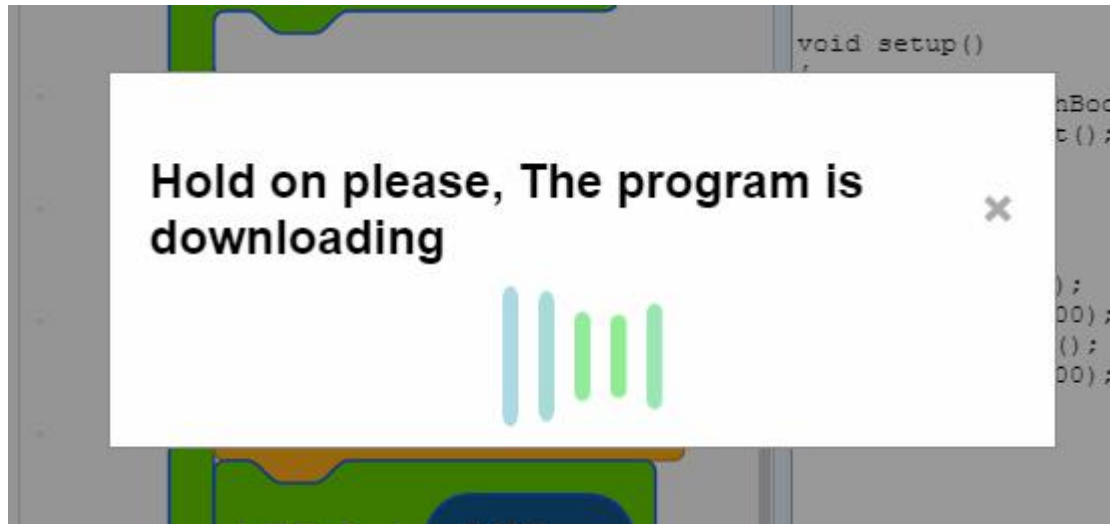
4. Compiling and uploading the program

4.1 After building the blocks, click the **[code mode]** in the upper right corner of the Helloblock programming interface. We can see the corresponding Arduino code.

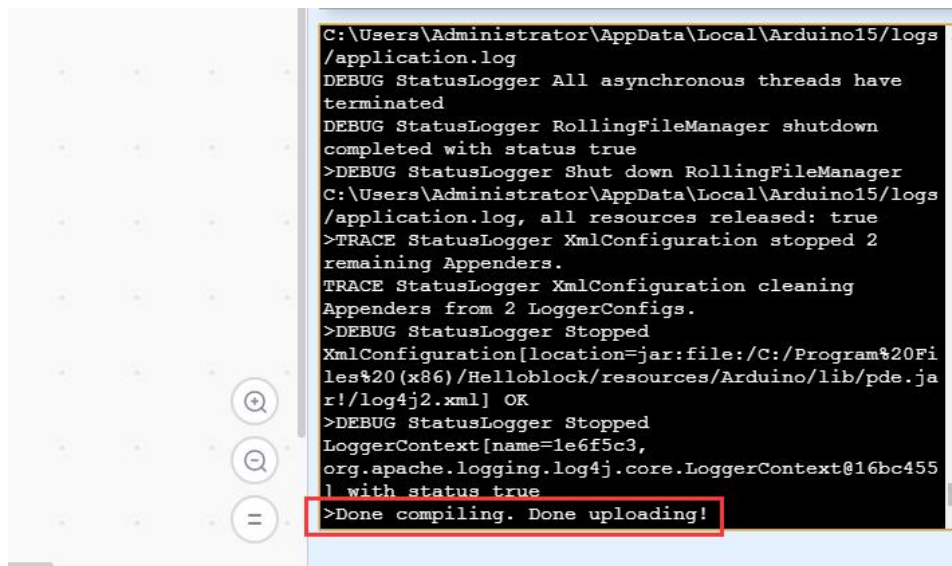


4.2 Then, you need to connect Omniduino car to your computer. Select the CH340 port number identified in the previous step in the upper right corner. Then, click the up arrow to start compiling and uploading the program.





4.3 When the words "**Done compiling Done uploading**" appear in the lower right corner of the programming interface, which means the program has been uploaded.



5. Experimental phenomenon

After the program is downloaded. After we press the K1 button, omniduino car will pan to the right for 1 second --> moves down for 1 second --> pan to the left for 1 second --> moves up for 1 second --> stop for 0.5 seconds. The movement track of the car is similar to a rectangle.

Then, car will turn left for 2 seconds --> stop for 0.5 seconds --> turn right for 2 seconds --> stop.