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## OSOYOO V2.1 Robot car kit Lesson 3: Object follow Robot car

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**NOTE: ALL OSOYOO PRODUCTS FOR ARDUINO ARE THIRD PARTY BOARD WHICH IS FULLY COMPATIBLE WITH ARDUINO**

OSOYOO V2.1 Robot Car for Arduino Lesson 3 : Object follow



### Authorized Online Retailers

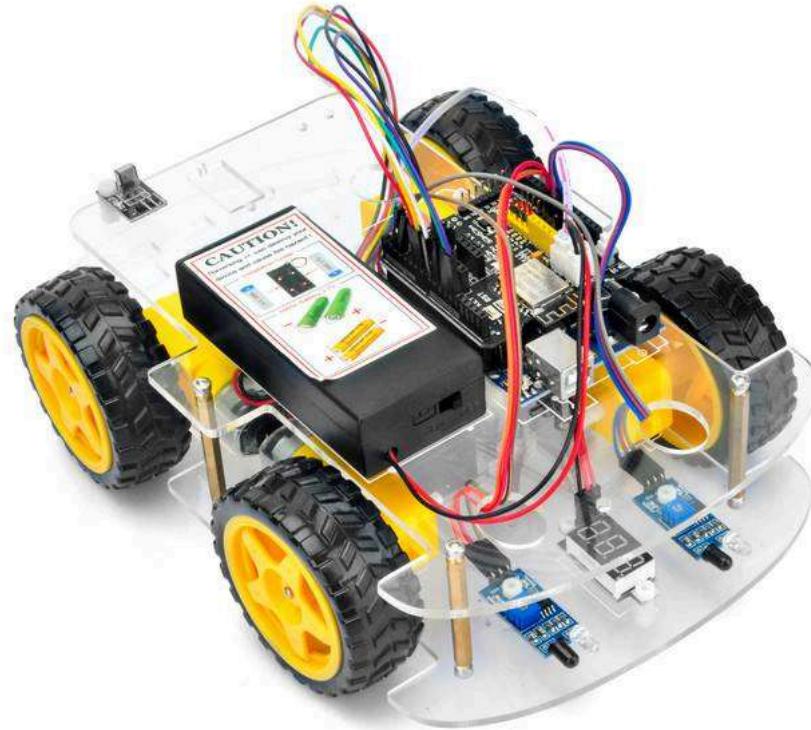
Where to buy the set with 18650 batteries and USB charger

Buy from OSOYOO	Buy from US	Buy from UK	Buy from DE	Buy from IT	Buy from FR	Buy from ES	Buy from E
<a href="#">OSOYOO Store</a>	<a href="#">BUY NOW</a>						

Buy the V2.1 Robot car without Battery and charger:

Buy from OSOYOO	Buy from US	Buy from UK	Buy from DE	Buy from IT	Buy from FR	Buy from ES	Buy from E
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## OBJECTIVE

In this lesson, we will install 2pcs IR distance sensors on robot car and program the car to follow object movements. The this experiment is based on IR distance detection principle. The car receives the signal from the IR distance sensors, and program will drive the car to take actions.

You must complete [lesson 1 \(assembling the car\)](#) before you continue on with this lesson.

## PARTS AND DEVICES:

No.	Picture	Device	Qty.	Accessories	Link
1		IR distance Sensor	2	M3 Plastic Screw x 2 M3 Plastic Nut x 2 M3 Plastic Pillar x 2	<a href="#">Click here to buy</a>
3		20Pin jumper wire Male to female 20cm	some		<a href="#">Click here to buy</a>

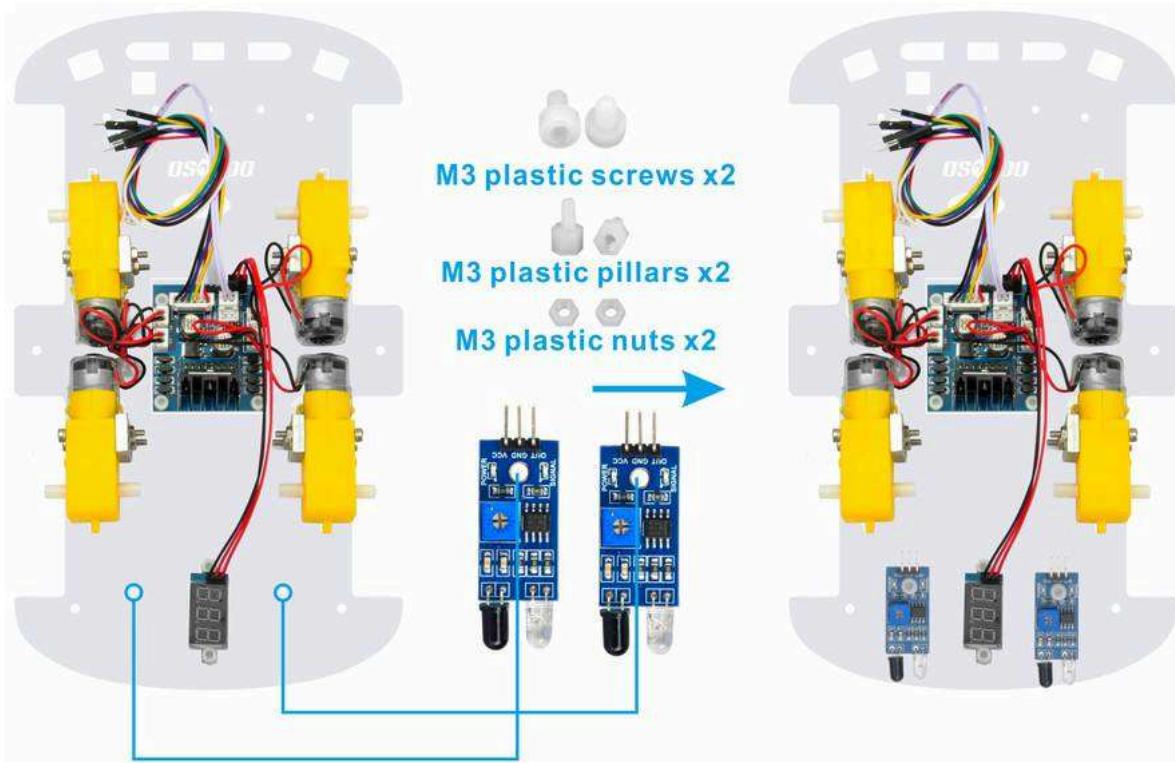
3		Philips screwdriver	1	<a href="#">Click here to buy</a>
4		Hex Screwdriver	1	<a href="#">Click here to buy</a>
5		M3 plastic screw	2	
6		M3 plastic pillar	2	
7		M3 plastic nut	2	

## HARDWARE INSTALLATION

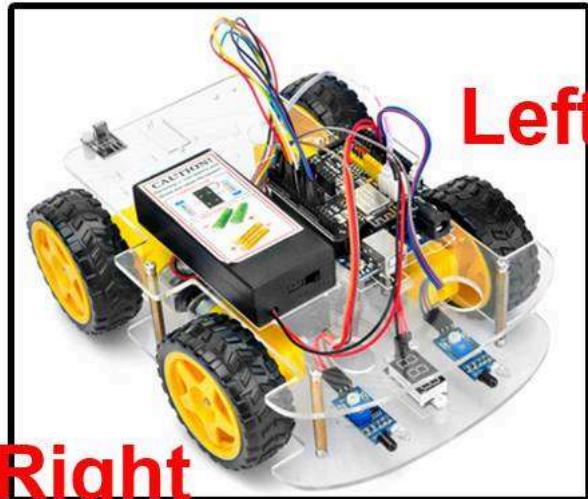
### Install devices

**Step 1:** Install the smart car basic frame work as per [Smart Car Lesson 1](#). If you have already completed installation in Lesson 1 just keep it as is.

**Step 2:** Remove the screws on copper pillars and add 2pcs IR distance sensor onto the car. Install the IR distance sensors using M3 plastic screws, M3 plastic pillars and M3 plastic nuts at the back of low car chassis.



**Step 3:** Connect 2pcs IR distance sensors modules as below connection diagram (Remember : DO NOT remove any ex installed in Lesson 1 ) :



**Right**

IR Obstacle Avoidance Module	OSOYOO Uart Wifi shield V1.3
VCC(left)	5V
GND(left)	GND
Out(left)	D3
VCC(right)	5V
GND(right)	GND
Out(right)	D2

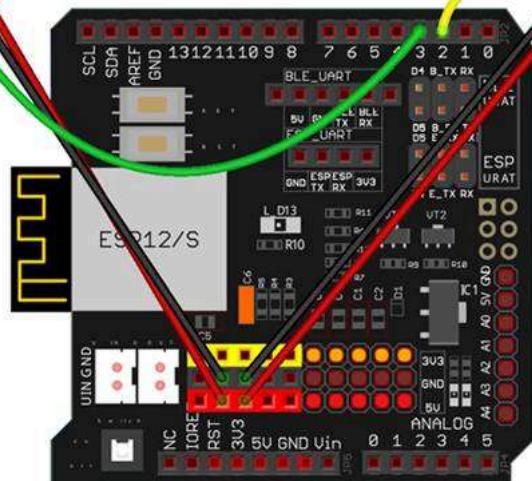
**IR Obstacle Avoidance Module (Left)**



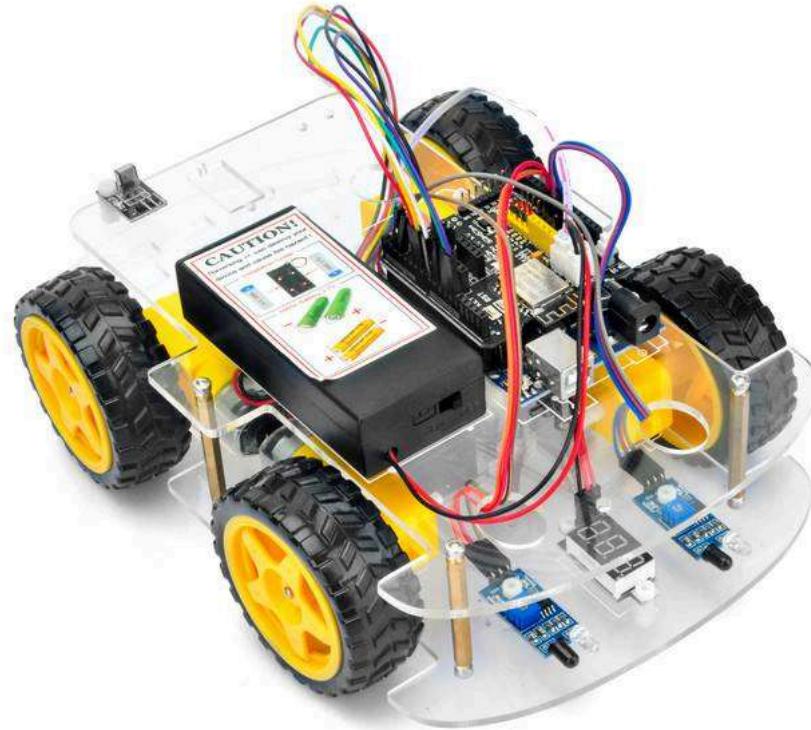
**IR Obstacle Avoidance Module (right)**



**OSOYOO Uart WIFI shield V1.3**



**Step 4:** Fix the screws on copper pillars to connect upper chassis to lower chassis.



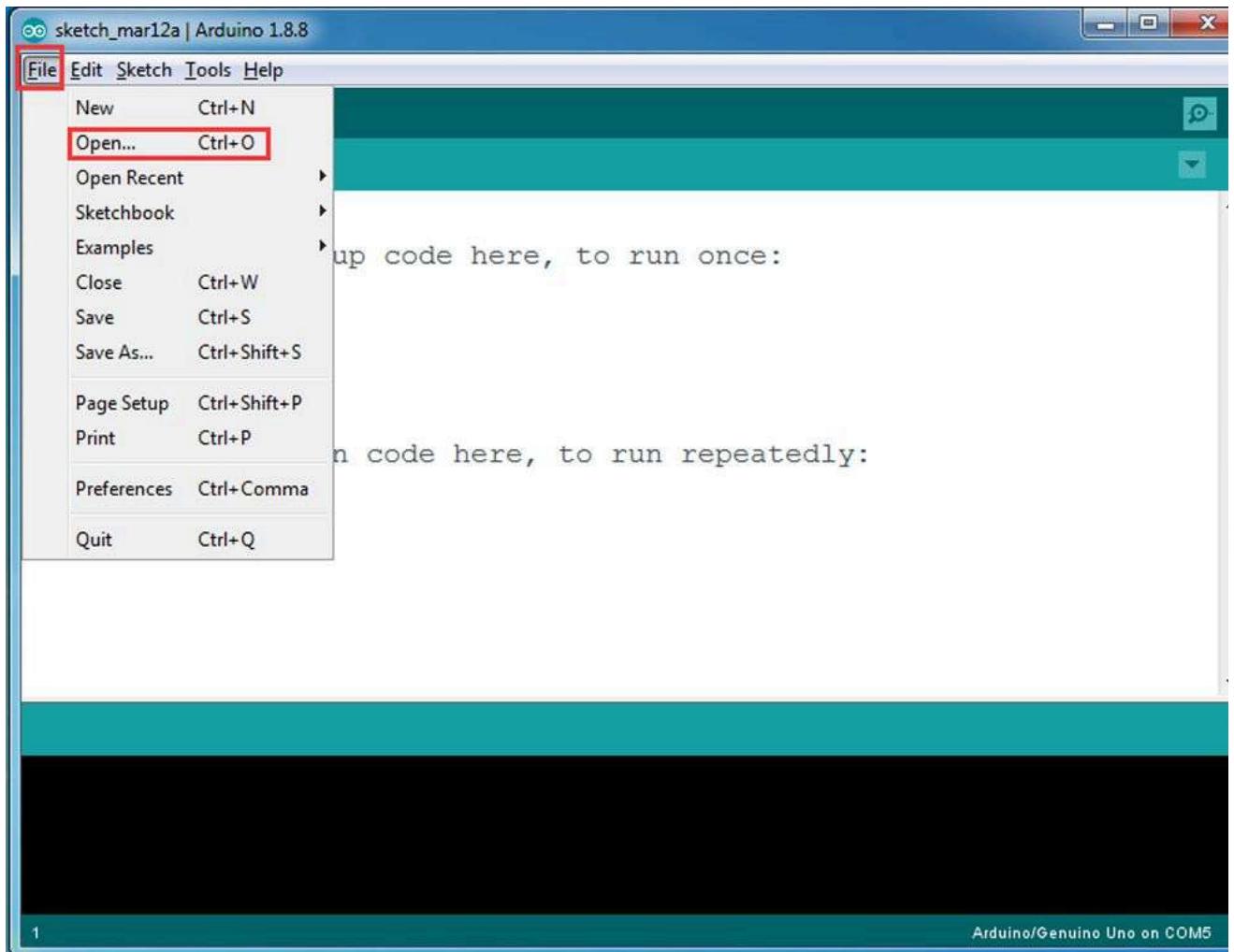
#### SOFTWARE INSTALLATION:

Open-source Arduino Software(IDE)		Download IDE here: <a href="https://www.arduino.cc/en/Main/Software?setlang=en">https://www.arduino.cc/en/Main/Software?setlang=en</a>
7 zip is a free zip utility that un-zips zip files		Download 7zip here for free <a href="https://www.7-zip.org/">https://www.7-zip.org/</a>

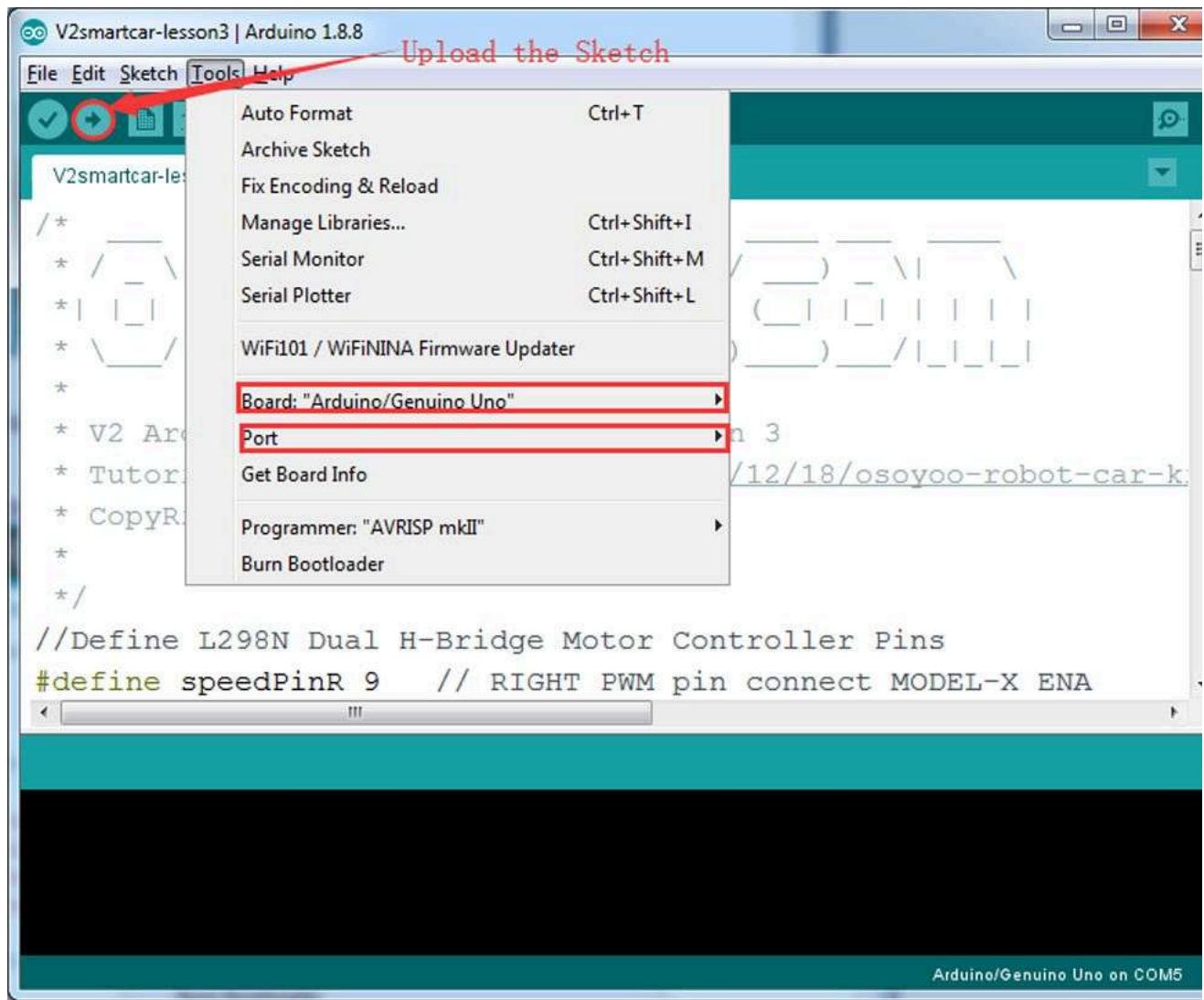
**Step 1:** Install latest IDE (If you have IDE version after 1.1.16, please skip this step) Download IDE from <https://www.arduino.cc/en/Main/Software?setlang=en>, then install the software.

**Step 2:** Download Lesson 3 sample code from <https://osoyoo.com/driver/v2smartcar-lesson3.zip> , unzip the download zip v2smartcar-lesson3.zip, you will see a folder called v2smartcar-lesson3 .

**Step 3:** Connect OSOYOO basic board to PC with USB cable, Open Arduino IDE -> click file -> click Open -> choose code "v2smartcar-lesson3.ino" in v2smartcar-lesson3 folder, load the code into your board.

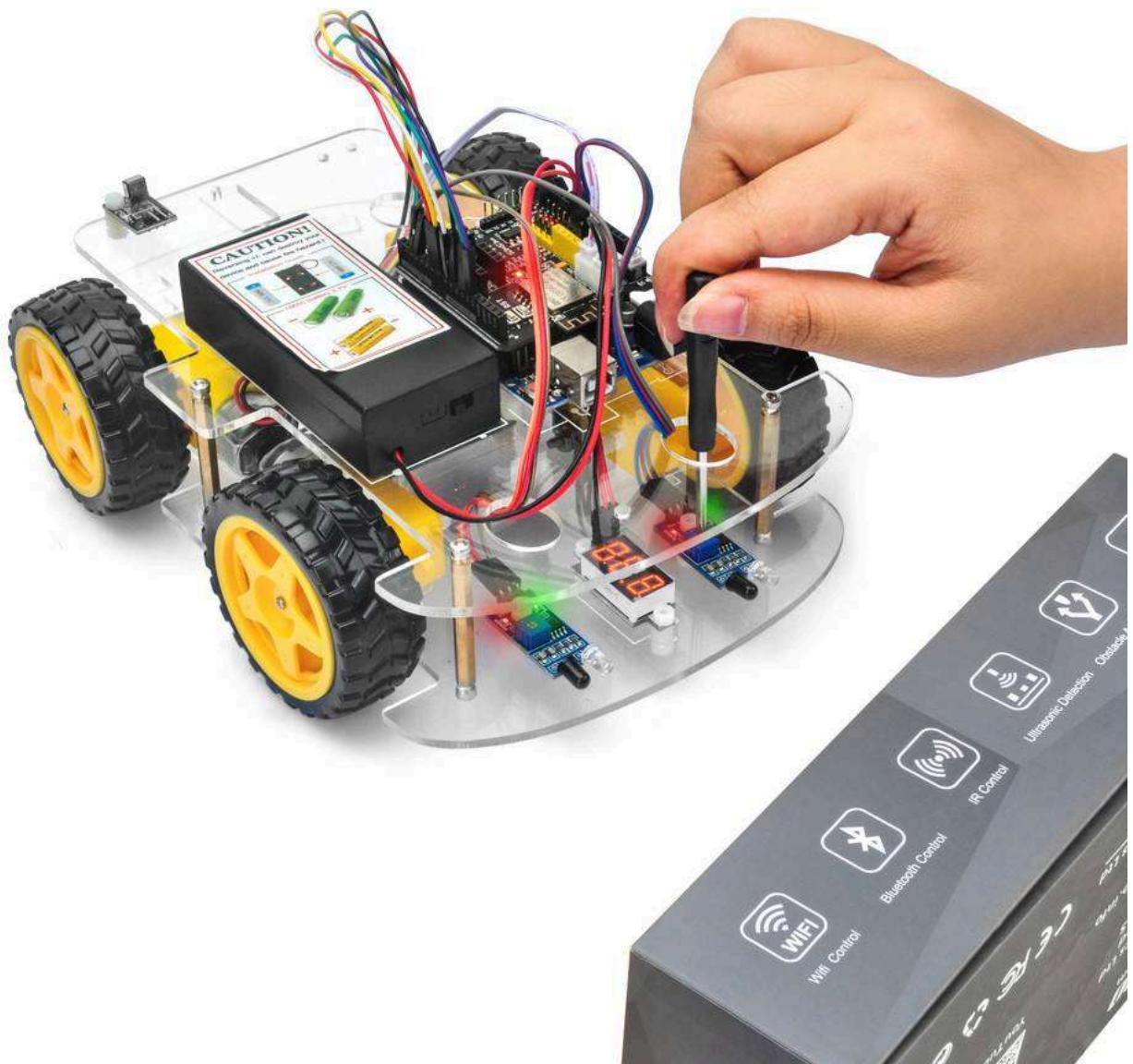


**Step 4:** Choose corresponding board/port for your project,upload the sketch to the board.



**Step 5:** Turn on the car, put object about 10cm ahead of each IR distance sensors and adjust potentiometer on IR distance sensors to or your hand.

Note: When these module detect objects, the power indicator and signal indictor are on. when you move object over detection distance, the power indicator is on. If the signal indictor is always on even though the object is over detection distance, you need to adjust the potentiometer

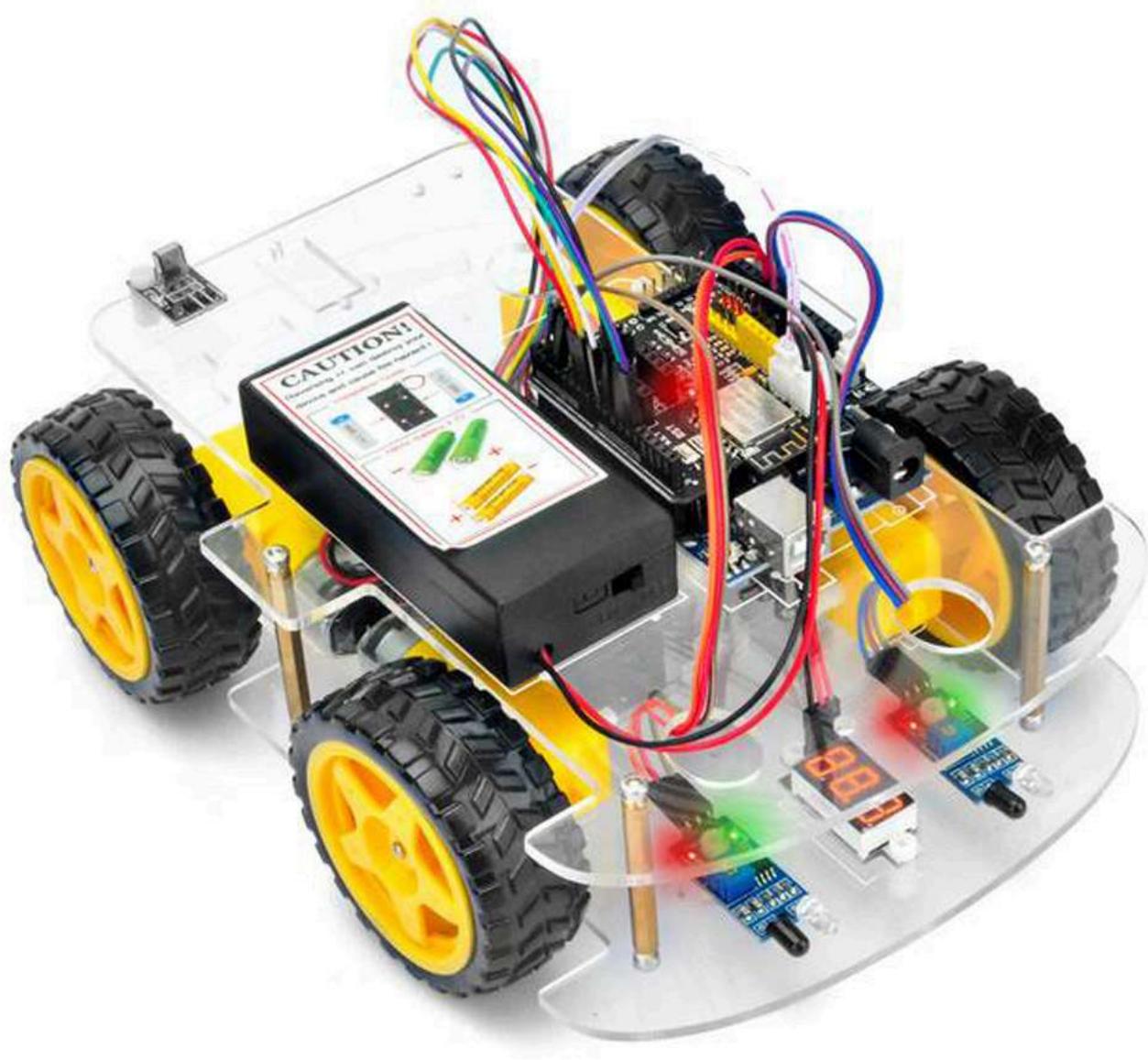


#### FINAL TESTING :

Turn on the car, move object or your hand ahead of car, and then the car will move accordingly: looks like you pull it. It goes when both IR Obstacle Avoidance modules detect object or your hand; it turns right when the right IR Obstacle Avoidance detect object; it turns left when the left IR distance sensors detect object.  
when object or your hand is over 10cm ahead, it will stop.

#### Note:

- 1) As IR distance sensors modules are installed at the back of the car, all movement directions are contrary to other courses.
- 2) The car can only move forward, turn right and turn left, but cannot move backward.

[PREVIOUS LESSON](#)[ROBOT CAR V2 HOME](#)[NEXT LESSON](#)

DownLoad Url :

[osoyoo.com](http://osoyoo.com)**15 Comments**

bubba says:

[January 20, 2021 at 10:22 am](#)

Hello, the object sensors are very weak. I have to put a paper about 2 cm to the car to detect it. Any suggestions ?

[Log in to Reply](#)

admin says:

[January 27, 2021 at 1:45 pm](#)you can adjust the sensitivity potentiometer with a screwdriver. see this [https://osoyoo.com/picture/V2.1\\_Arduino\\_Robot\\_Car/Lesson3/3.jpg](https://osoyoo.com/picture/V2.1_Arduino_Robot_Car/Lesson3/3.jpg)[Log in to Reply](#)



Miklanin says:  
August 28, 2021 at 1:20 am

No matter how far I turn the potentiometer or distance from the sensor to an object, I cannot get the left sensor to light the green LED. The right sensor works as it is supposed to. I swapped the left worked and the right did not, so I suspect it is a bad sensor.

I looked in the accessories / sensors section but I did not see the IR Object Avoidance sensors listed.

Can someone please help me order replacements?

[Log in to Reply](#)



Miklanin says:  
August 28, 2021 at 1:29 am

Oh, good grief. Never mind. I completely failed to notice the "click here to buy" link next to the parts list above.

[Log in to Reply](#)



elaine says:  
August 30, 2021 at 2:55 pm

OK, If you get any issue, please contact me again. Thanks.

[Log in to Reply](#)



dannymadu says:  
October 4, 2021 at 1:34 am

Hi,

I just finished installing the Lesson 2 and uploaded the software. When i turned ON the Robot car, i noticed that the tires were running continuously. Please what could be the reason for this?

Kelvin.

[Log in to Reply](#)



elaine says:  
October 8, 2021 at 3:20 pm

Does the software notice successfully?  
Please confirm you download the lesson 2 IR remote car or this commented lesson(lesson3).

[Log in to Reply](#)



max says:  
January 8, 2022 at 4:14 am

First, this is a really great robot kit. Love to play with it. If someone would try, you could improve the object following if you add the ultrasonic module between the two obstacle sensors. It fits b. So you can set the motorspeed according to the distance the ultrasonic sensor reads. You can get a much smoother following. Also it increases the range, ultrasonic sensor can detect your ha a much greater distance. Try it! It's really great fun..

[Log in to Reply](#)



elaine says:  
January 10, 2022 at 12:39 pm

Thank you. Your interest and support make us progress

[Log in to Reply](#)



vince\_bolam says:  
October 15, 2022 at 4:32 am

I have received my kit, got as far as lesson 3 but the right IR unit is faulty. When adjusting the potentiometer the green light comes on and stays on with no object near the sensor, at any other potentiometer the green light goes off even with an object in front of it. The left unit works as it should.

[Log in to Reply](#)



elaine says:  
October 17, 2022 at 11:05 am

Please provide your order No. and address, I'll send the IR to you ASAP.

[Log in to Reply](#)



TheCoder says:  
March 3, 2024 at 4:09 am

I have had this same problem have you managed to sort it out or is a new part needed?

[Log in to Reply](#)



stealthbomber says:  
February 4, 2024 at 4:06 am

elaine its not working both the sensors are showing that there powered but no matter how much i adjust them they do show that there getting a signal what do i do please help

[Log in to Reply](#)



JOJOS1AH says:  
June 1, 2025 at 3:26 pm

Is one of the sensers suppose to have gunk on it?

[Log in to Reply](#)



admin says:  
June 1, 2025 at 11:04 pm

Why do you ask such question? Our sensors should be brand new and clean in the package.

[Log in to Reply](#)

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