Represented by pictures and differents steps, you will discover how to assembly the sensor test bench.

Time required : 4h

Table of content :

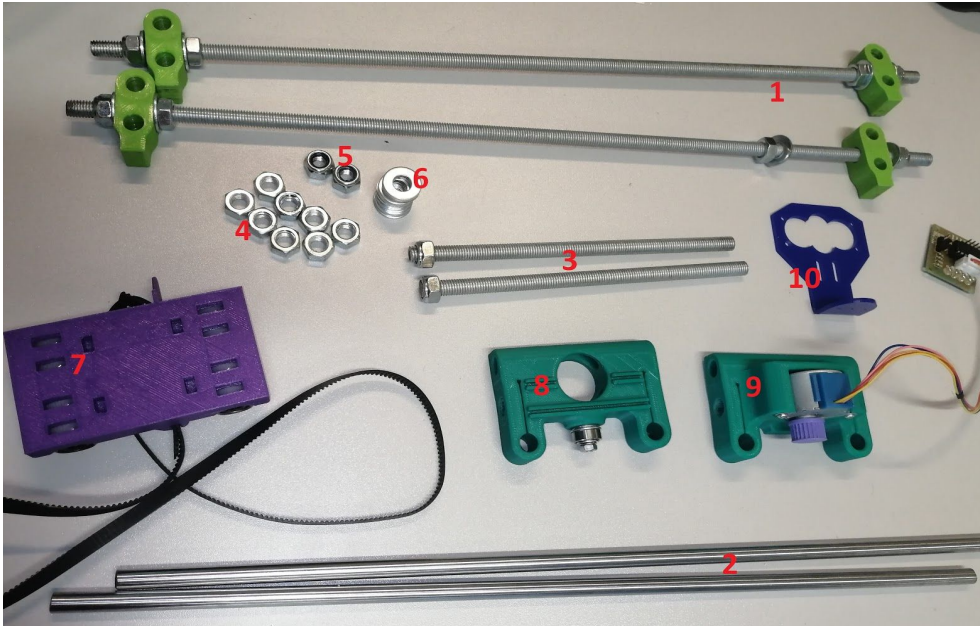| HISTORIQUE DU DOCUMENT			
INDICE	DATE	MODIFICATIONS	VISA
A	12/02/20	Création du document	
B	04/03/20	Première édition	

TEST BENCH ASSEMBLY

Here is the list of the disassembly elements :

- 19 washer (6)
- 8 nuts (4)
- 2 limit switch nuts (5)
- 2 threaded rods 45 cm (1)
- 2 threaded rods de 17 cm (3)
- 1 printed piece carrying the DC motor (9)
- 1 printed piece carrying the test bench (8)
- 2 smooth rods (2)
- 1 printed piece that will do the treadmill (7)
- 1 piece carrying the sensor (10)

A 13 wrench is used to tight the nuts.

Step 0 : check if you have all pieces and material mentioned on page 2.

Step 1 : Take one 45cm threaded rod and one 17cm threaded rod.
Check that two washers and two nuts are already placed around the green piece of the threaded rod of 45cm (1) (2).
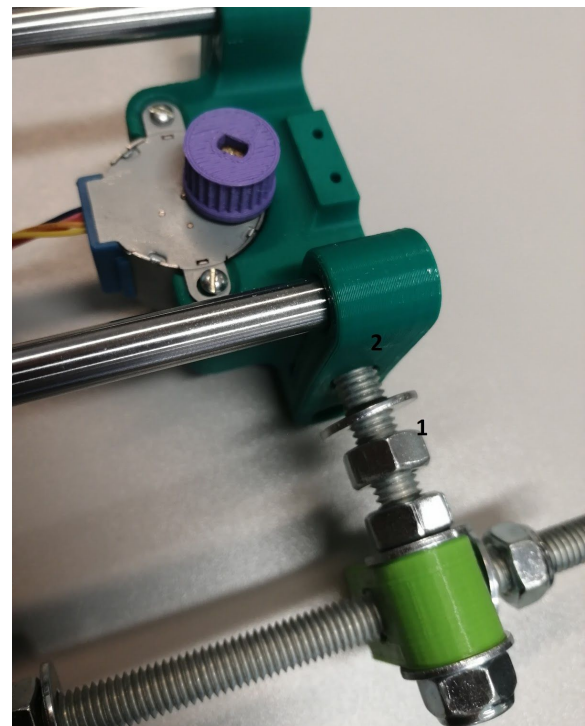Insert the 17cm threaded rod on the top hole of the green piece as represented on the picture (3).
Place one washer and one nut after the green piece on the 17cm threaded rod (4).
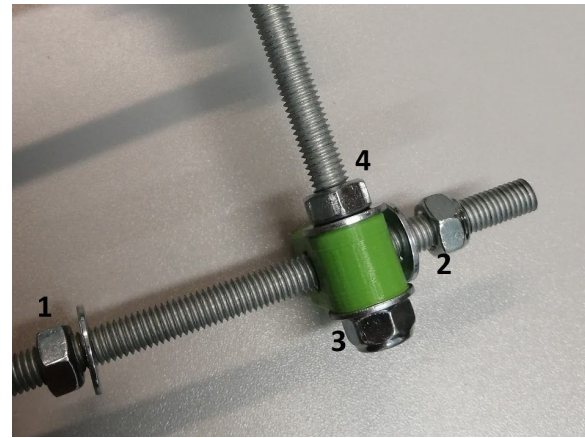
Step 2 : Place one washer and one nut on the 17cm threaded rod used in step one (1).
Then, take the printed piece that is carrying the DC motor and insert the 17cm threaded rod on its lateral hole as on the picture (2).

Step 3 : Place one washer and one nut on the same 17cm threaded rod next to the other side of the lateral hole of the piece that is carrying the engine (1).
Do the same a second time (2).
Take the another one 45cm threaded rod and check that 2 washers and 2 nuts are already placed around the green piece (3) (4).
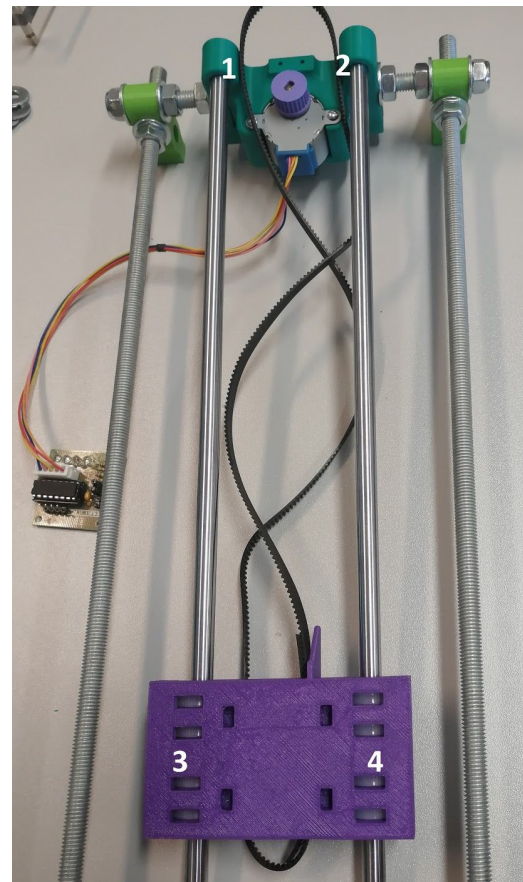Insert the 17cm threaded rod on the top hole of the green piece as represented on the picture (5).
Place one washer and one limit switch nut after the green piece on the 17cm threaded rod (6).
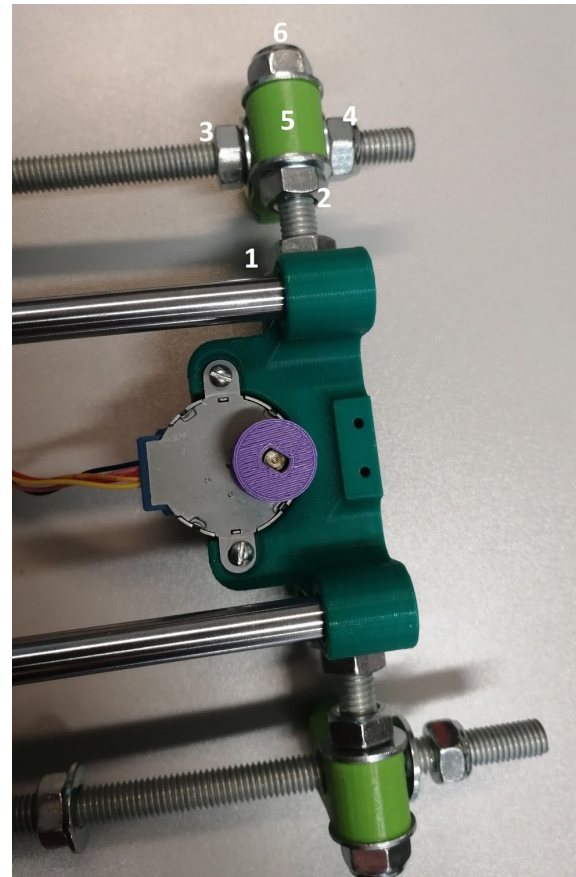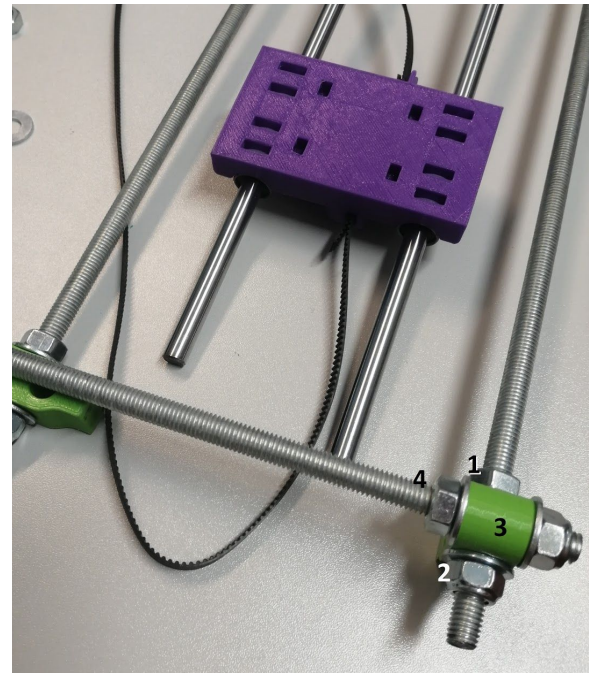

Step 4 : Insert the two smooth rods on the top hole of the piece that is carrying the motor (1) (2).
Insert these two smooth rods on the two holes of the piece that will do the treadmill as represented on the picture (3) (4).

Step 5 : Take one 45cm threaded rod already used and the other one 17cm threaded rod. Check that 2 washers and 2 nuts are already place around the green piece of the threaded rod of 45cm (1) (2).
Insert the 17cm threaded rod on the top hole of the green piece as represented on the picture (3).
Place one washer and one nut after the green piece on the 17cm threaded rod (4).

Step 6 : Place one washer and one nut on the 17cm threaded rod before to insert the piece that will carrying the test bench (1).
Then, insert this piece on the 17cm threaded rod as on the picture and insert the two smooth rods on the top holes of the piece (2) (3).
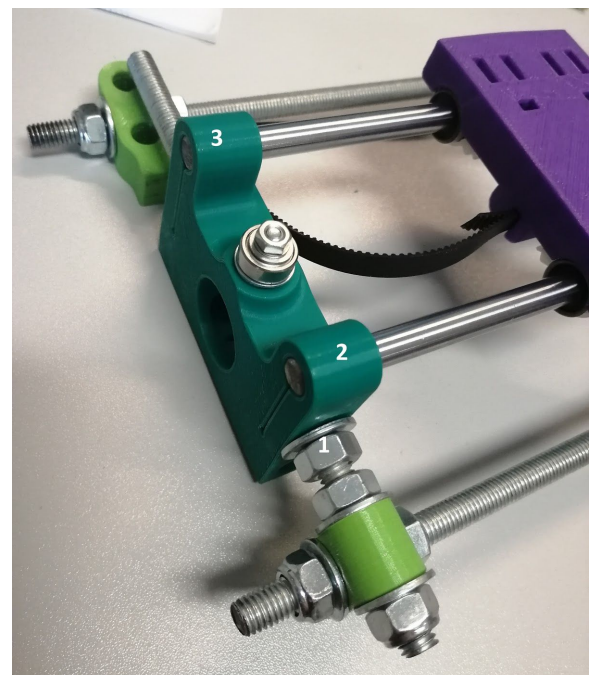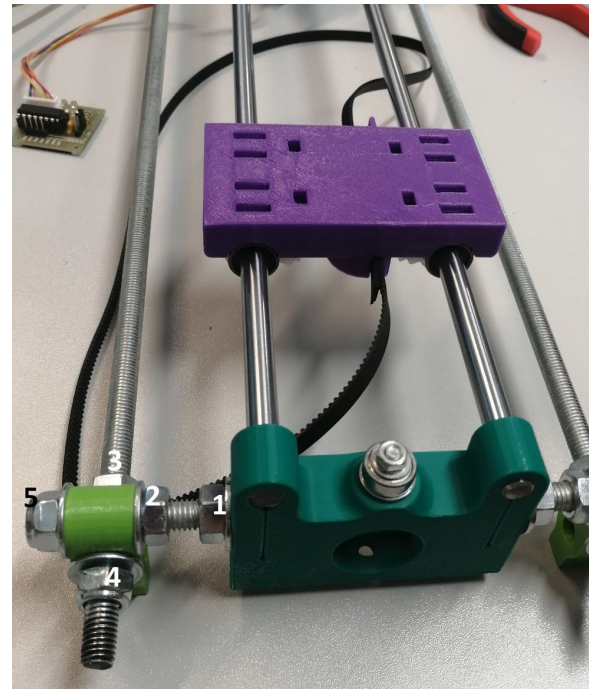
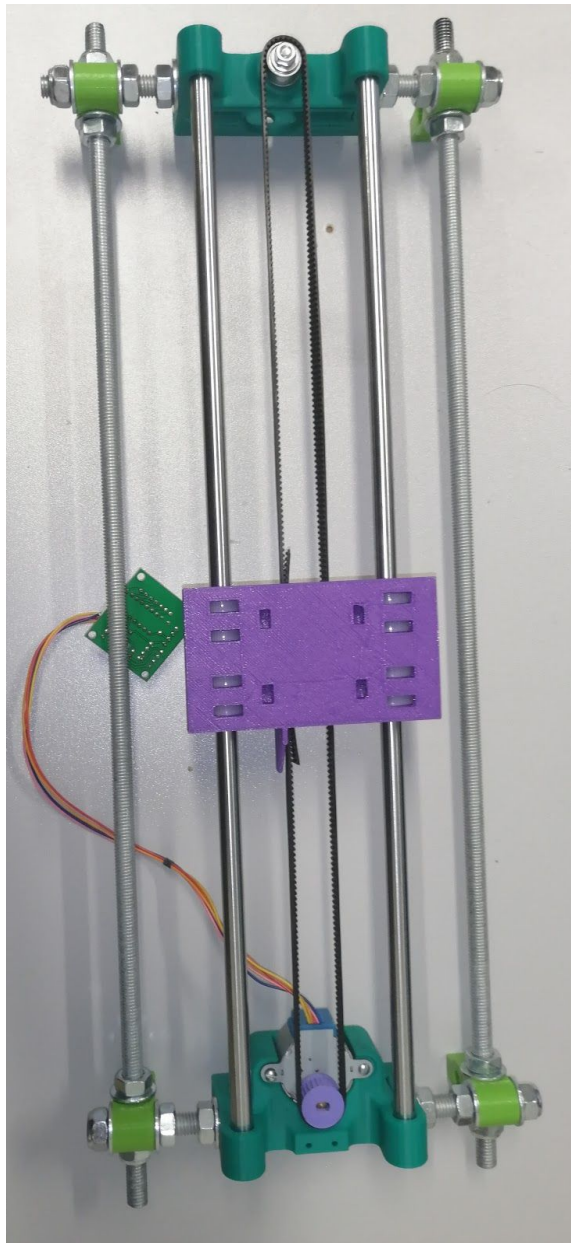|	
Step 7 : Place one washer and one nut on the same 17cm threaded rod next to the other side of the lateral hole of the piece that is carrying the test bench (1). Do the same a second time (2). Take the second 45cm threaded rod and check that 2 washers and 2 nuts are already placed around the green piece (3) (4). Insert the 17cm threaded rod on the top hole of the green piece as represented on the picture. Place one washer and one limit switch nut after the green piece on the 17cm threaded rod (5).	
Step 8 : Place the elastique of the piece that will do the treadmill on the two pieces that are carrying the DC motor and the test bench as represented on the picture (1) (2).	
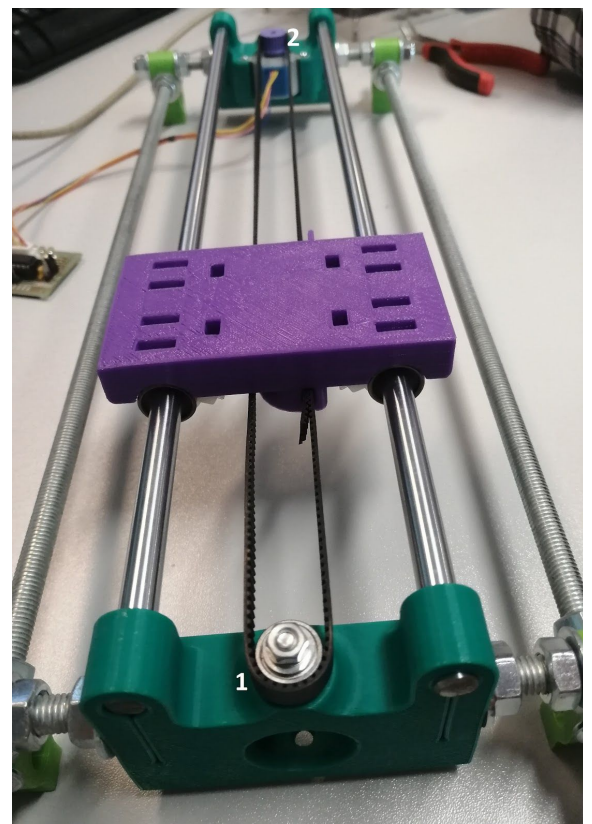
At this point, you must check that everything is corresponding to these 3 pictures. You must have used all washer and nuts, and all kind of rods and printed pieces.
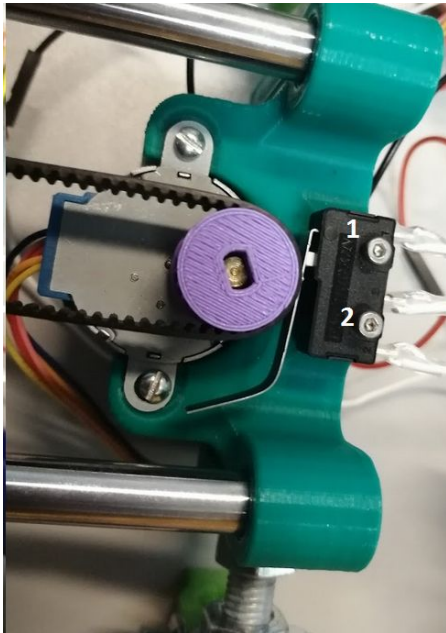Only the piece that will carrying the sensor is not used.
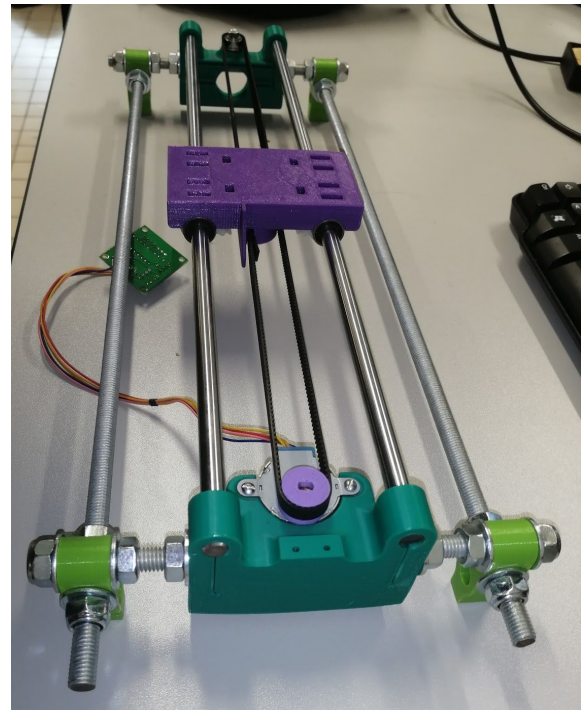
View from the DC motor piece.
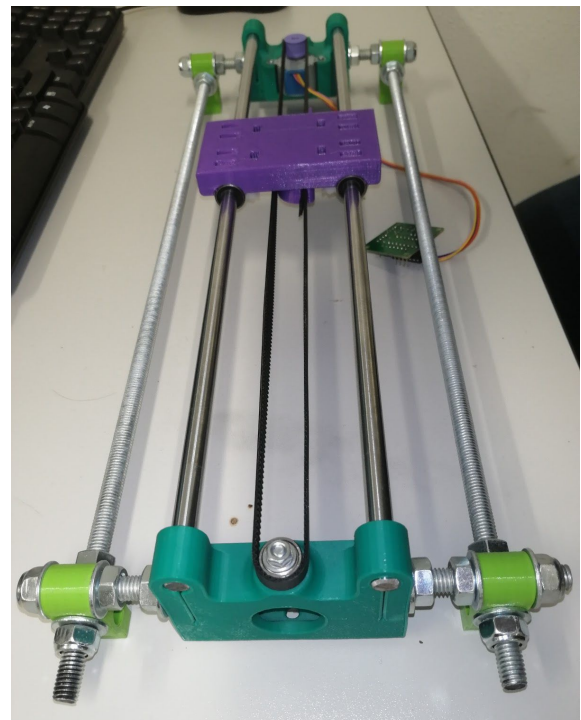
View from the top.

View from the test bench piece.

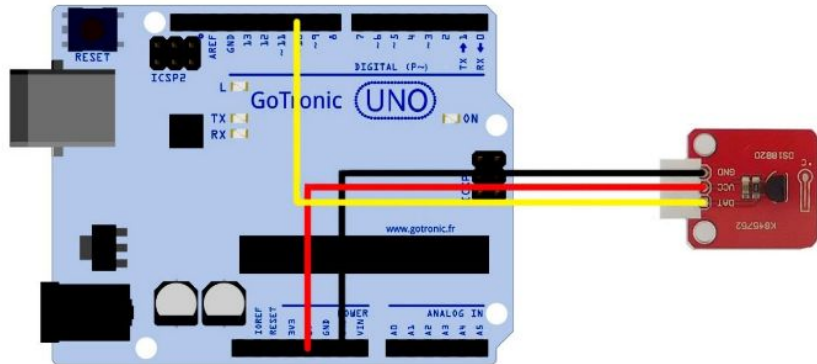To assembly a limit switch sensor, it is possible to screw it to the DC motor printed piece (1) (2).
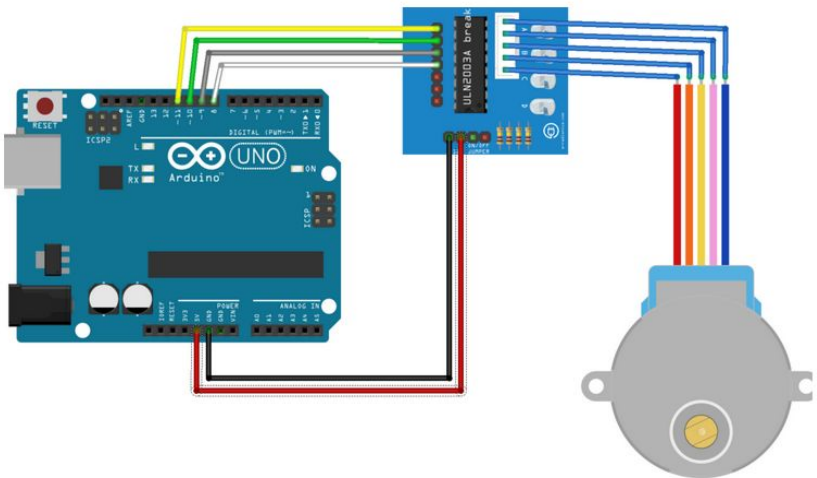
ELECTRICAL ASSEMBLY

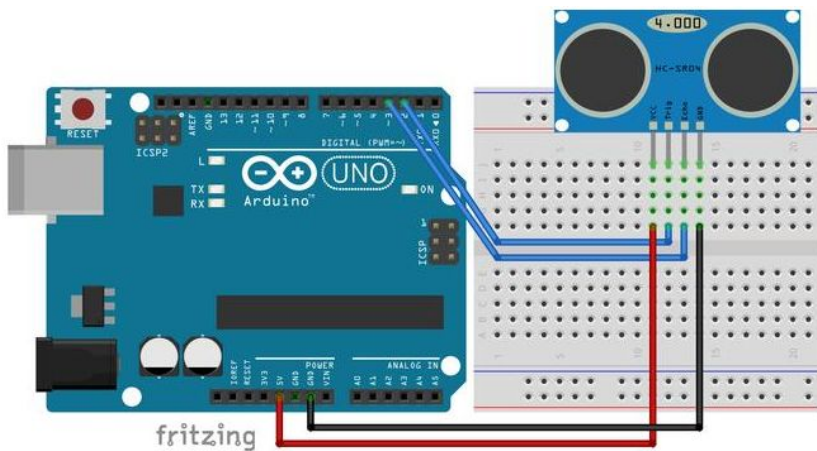|	
Temperature sensor connection to arduino card : • GND to GND • VCC to 5V • DAT to 10	
DC motor connection to arduino card : • GND to GND • 5V to 5V • 1 to 11 • 2 to 10 • 3 to 9 • 4 to 8	
Distance sensor connection to arduino card : • GND to GND • VCC to 5V • trig to 2 • echo to 3	

Final illustration :