*Numbers in the item description refers to Mcmaster-Carr numbers

Assembling guide of the campus robot

Number given to the items	Item	Description	Quantity needed
1	DC-Powered Electromagnet	5698K112*	4
2	Screw no 1	91251A342*	4
3	Magnet ring	Receptacle for the magnet	4
4	Leg		4
5	Link-1	Connects the leg to the motor	4
6	Link-2	Connects the leg to the motor	4
7	Link-3	Connects the leg to the motor	4
8	Motor attachment	Connects the leg to the motor	4
9	Motor	DYNAMIXEL XL430-W250-T	4
10	Motor mount	Receptacle for the motor	4
11	Servo mount	Receptacle for the servomotor	4
12	Servomotor		4
13	Frame	Main piece for carrying the legs	1
14	Servo support	Makes sur the leg is fixed	4

1-foot assembly

- Materials needed for foot:

1 of item 1

1 of item 2

1 of item 3

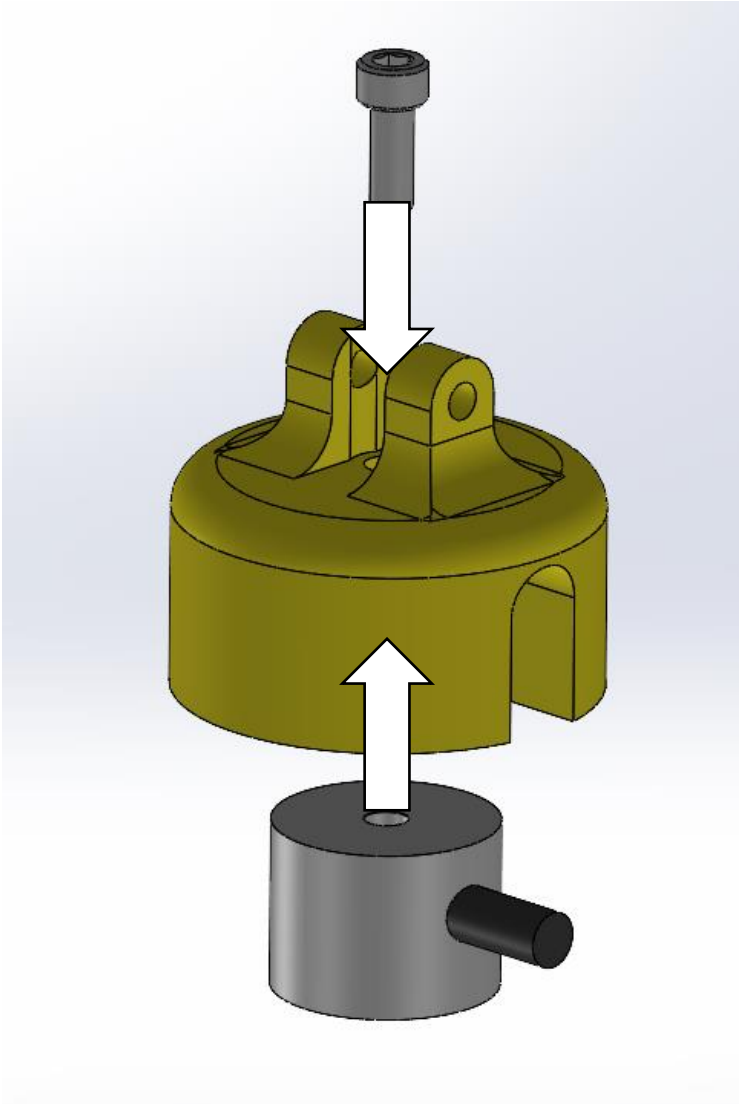
- Instructions:

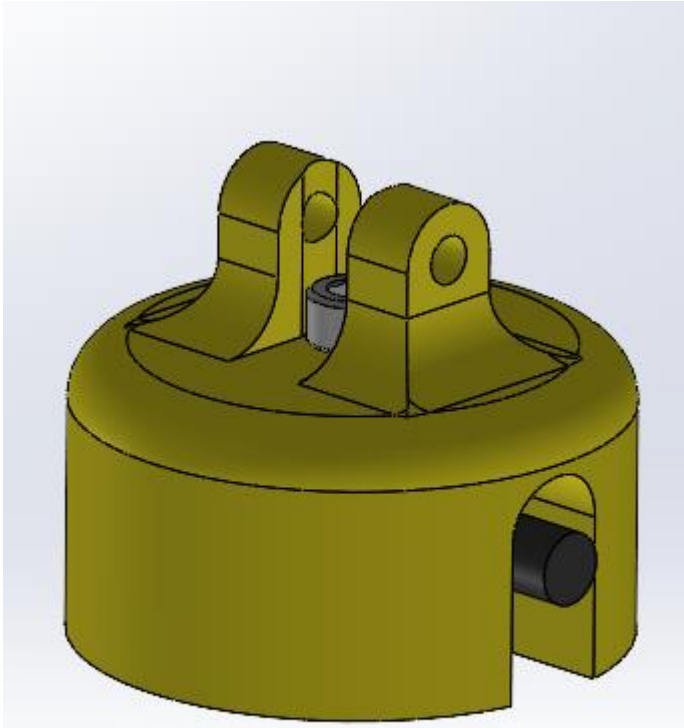
1- Insert the electromagnet in the ring

2-Screw the electromagnet with the ring.

3- Make sure the electromagnet and the ring touches the ground at the same time

4-Repeat 3 other times





*Each part that needs to be screwed and isn't a motor takes a screw of 4mm of diameter. The length used is at your discretion

2-leg assembly part 1

- Materials needed for leg part 1:

1 of item 4

1 of item 5

1 of item 6

1 of item 7

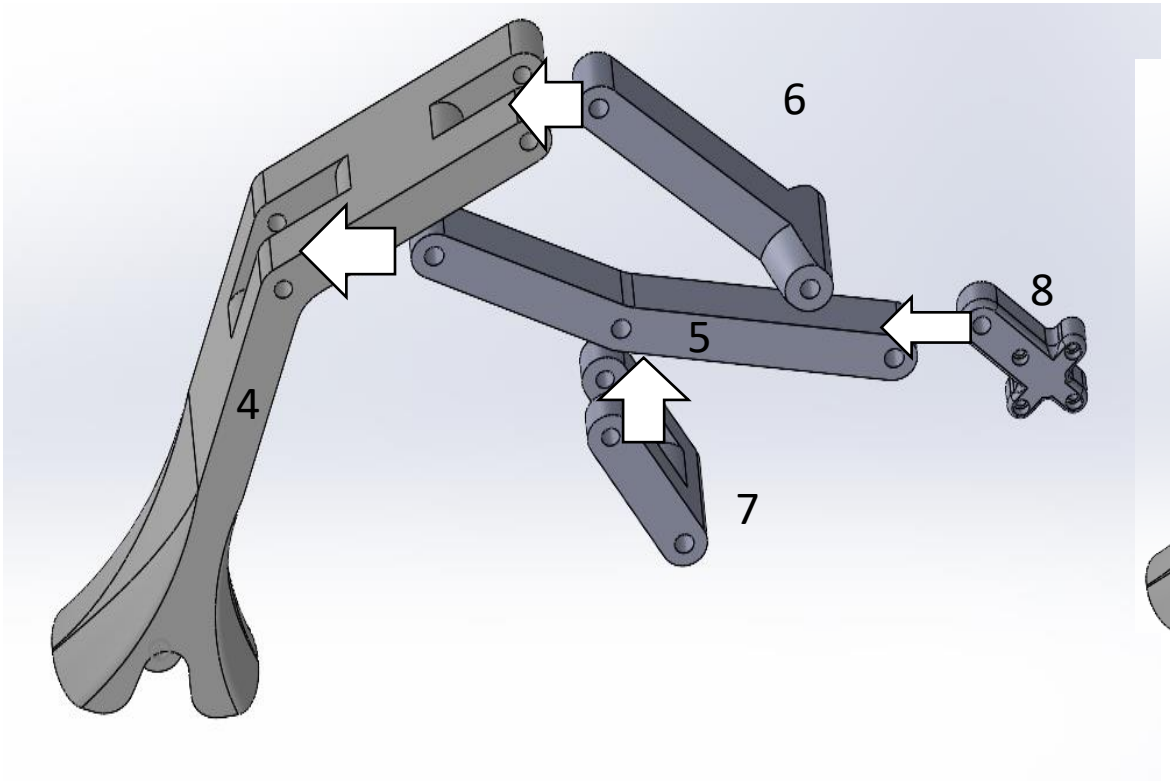
1 of item 8

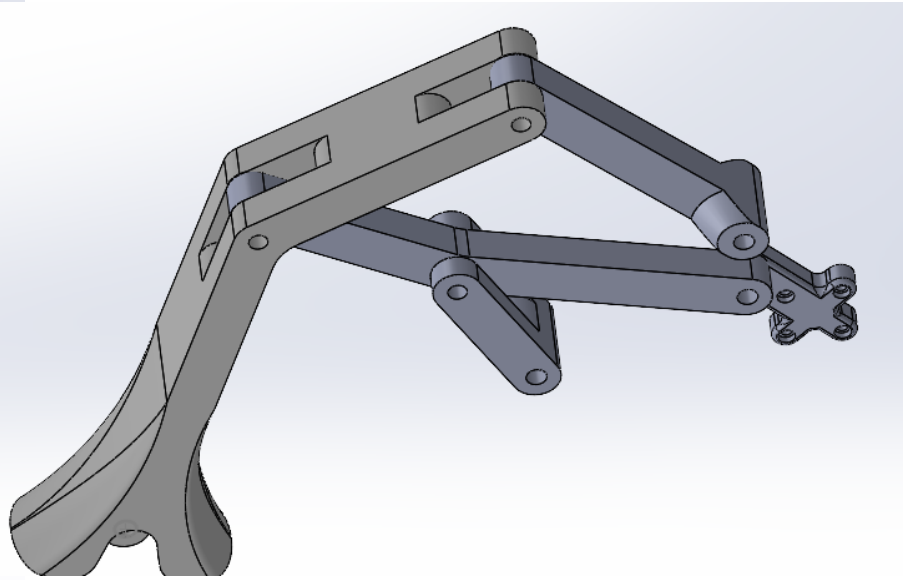
4 screws

- Instructions:

1- Align the correspondant holes of any connected part and screw them together (the order doesnt matter)

2-Repeat 3 other times





*The diameter for all motor and servomotor screws is 2mm

4-leg assembly part 2

- Materials needed for leg part 2:

1 leg from part 1

1 of item 9

1 of item 10

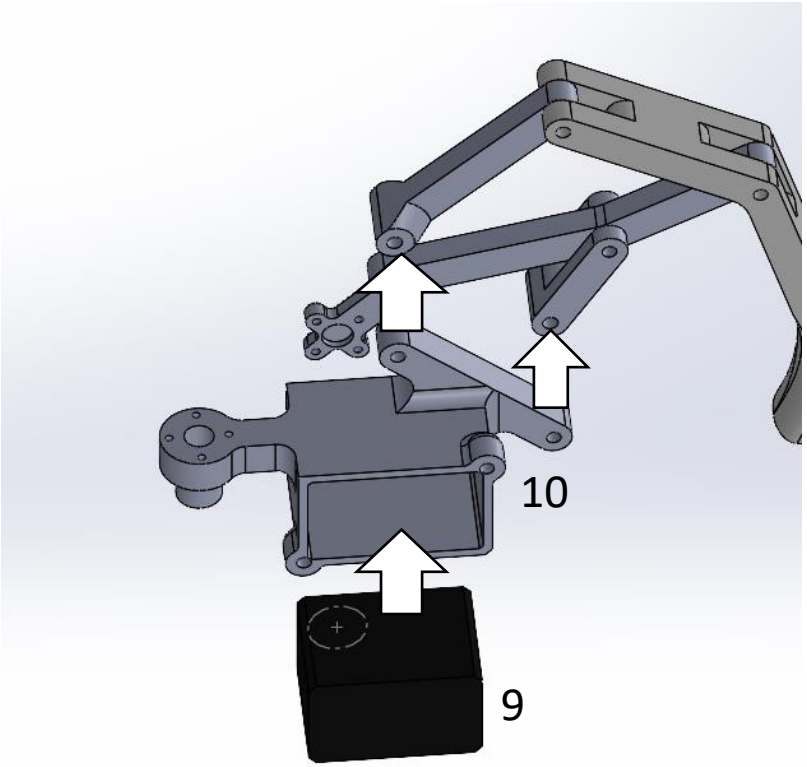
4 screws

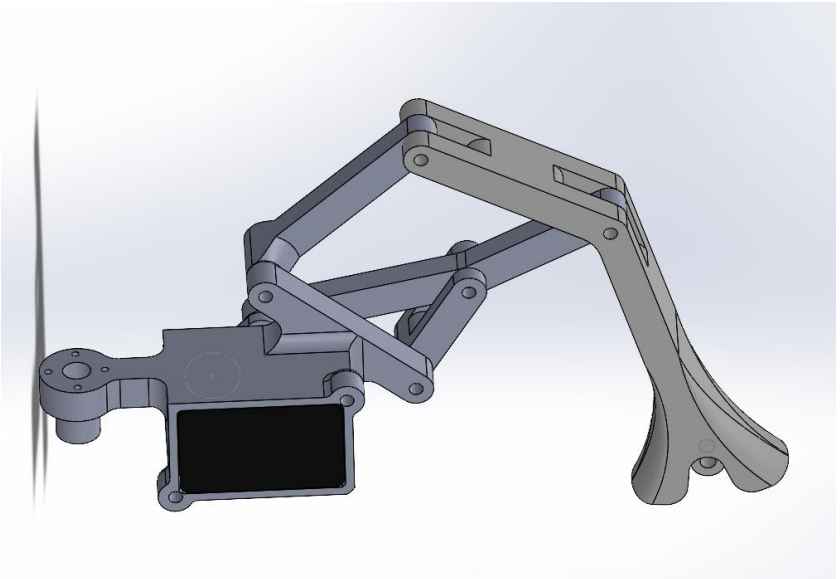
- Instructions:

1- Insert the motor in the receptacle

2- Align the correspondant holes of any connected part and screw them together (the order doesnt matter)

3-Repeat 3 other times





5-leg assembly part 3

- Materials needed for leg part 3:

1 leg from part 2

1 of item 11

1 of item 12

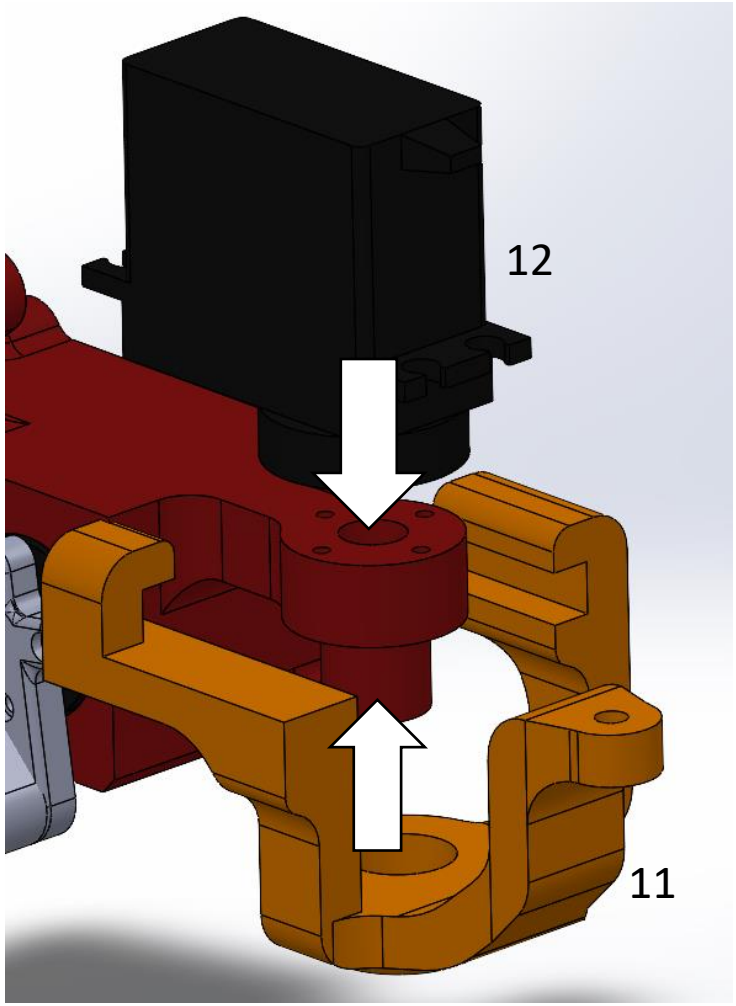
4 screws

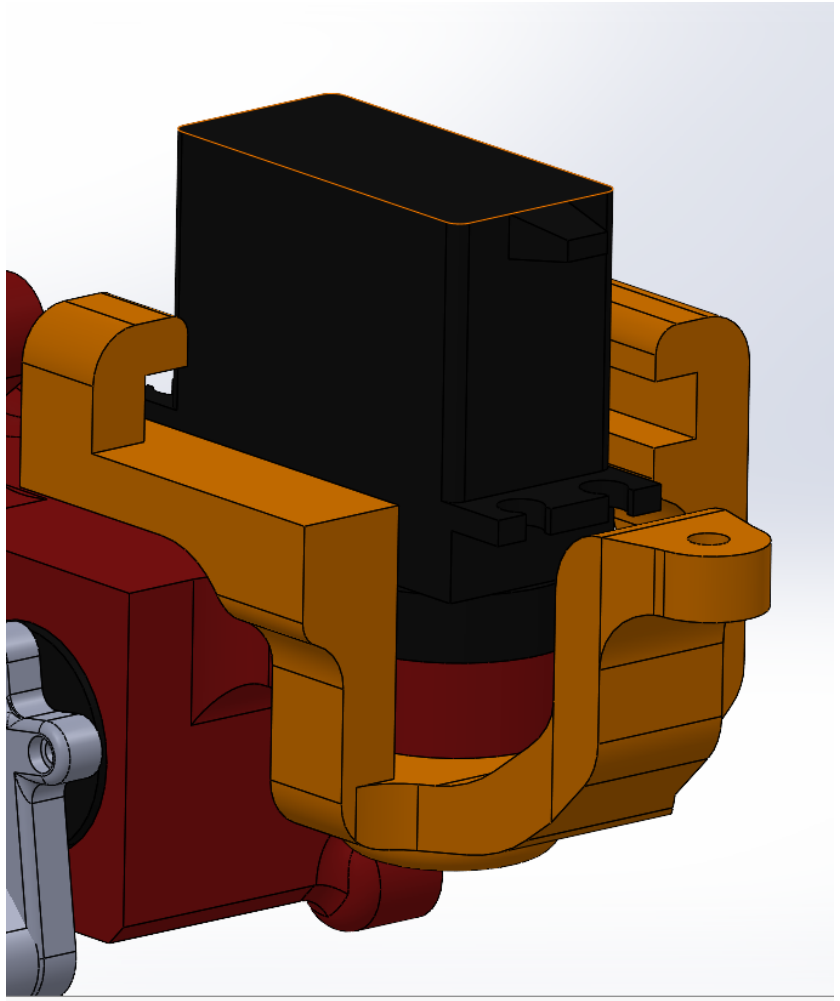
- Instructions:

1- Tight fit the servo mount with the motor mount

2- Align the correspondant holes of any connected part and screw them together (the order doesnt matter)

3-Repeat 3 other times





6-leg assembly part 4

- Materials needed for leg part 3:

1 leg from part 3

1 of item 13

1 of item 14

6 screws

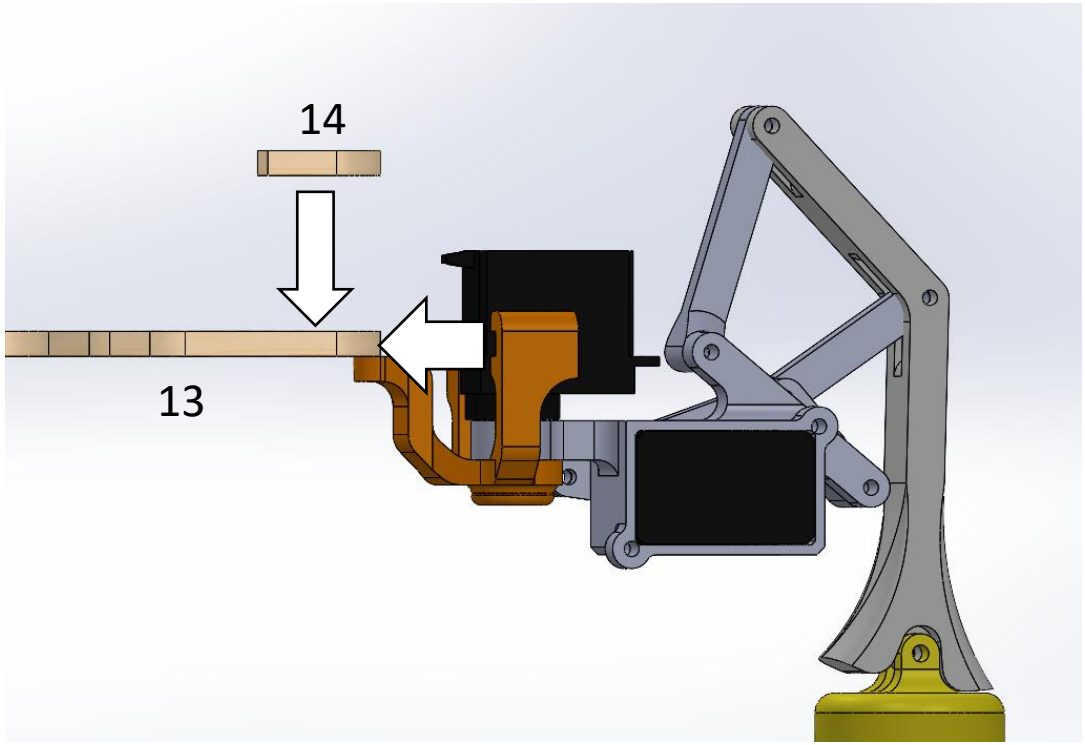
- Instructions:

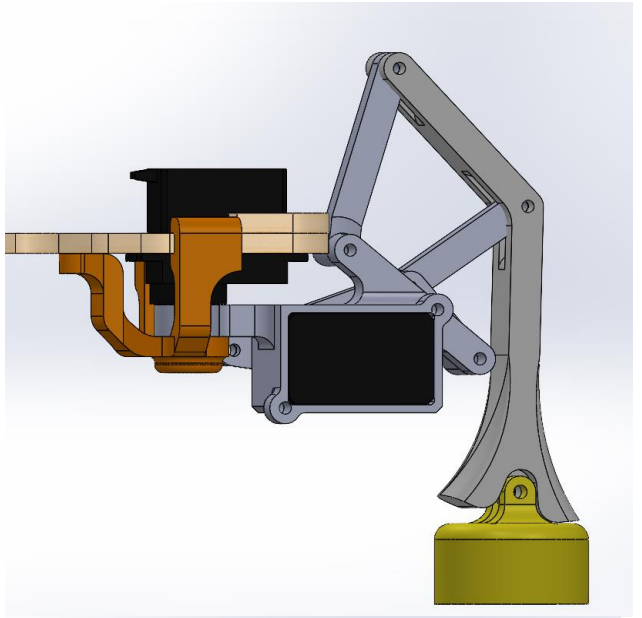
1- Slide the servo mount through the frame so the servomotor is in the dedicated spot

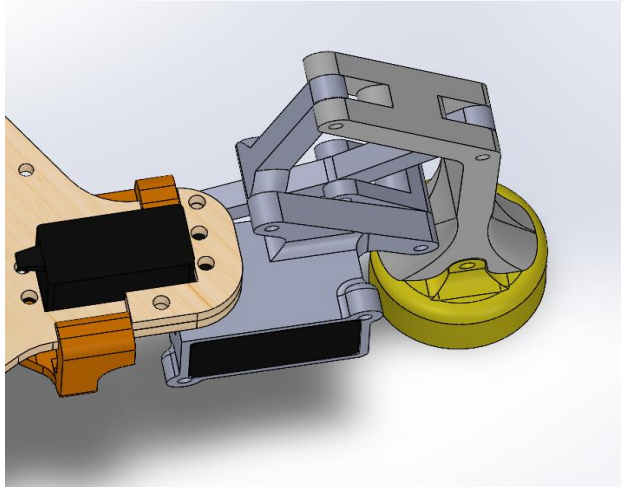
2-Put the servo support down ont the servomotor

3- Align the correspondant holes of any connected part and screw them together (the order doesnt matter)

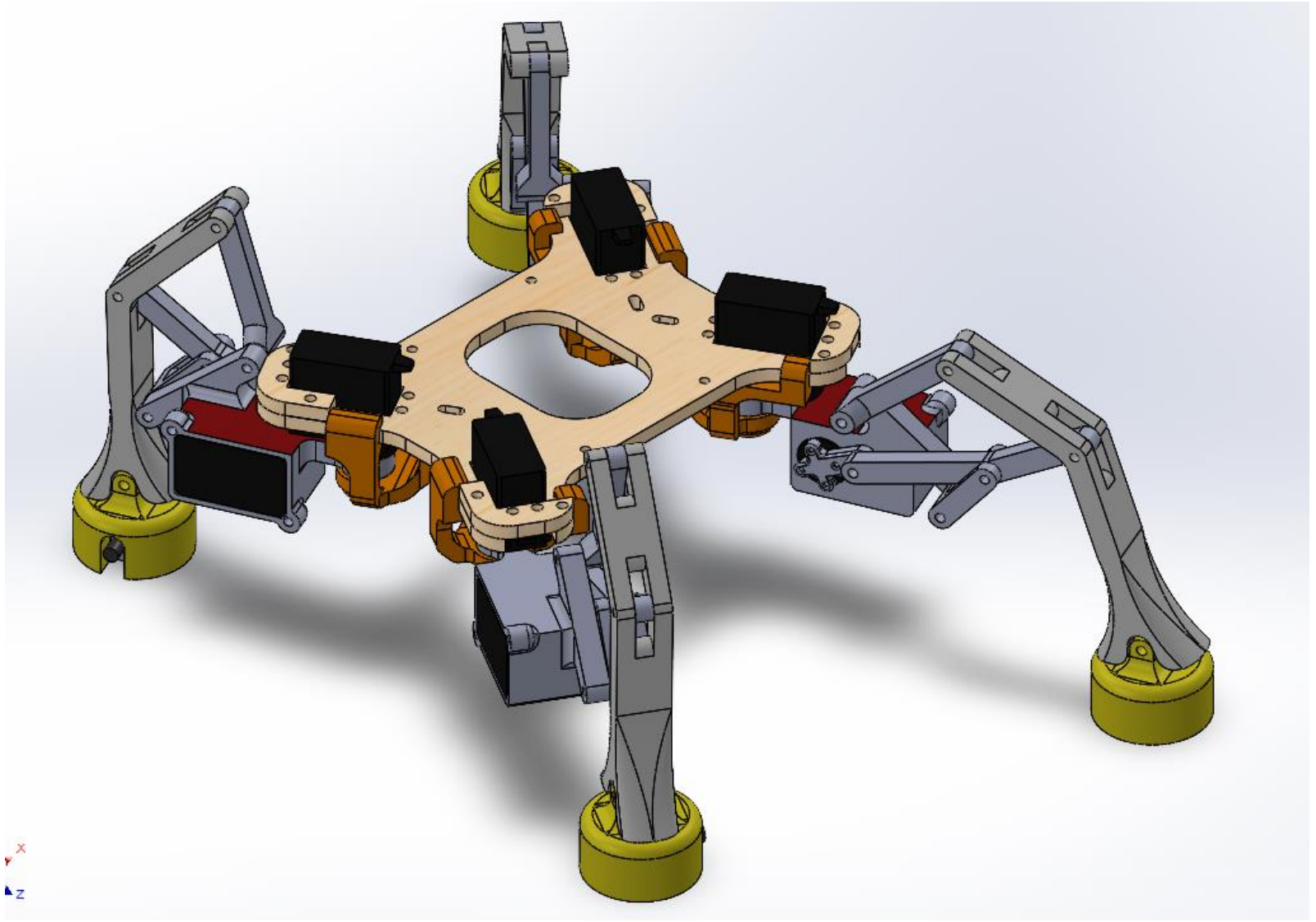
4-Repeat 3 other times



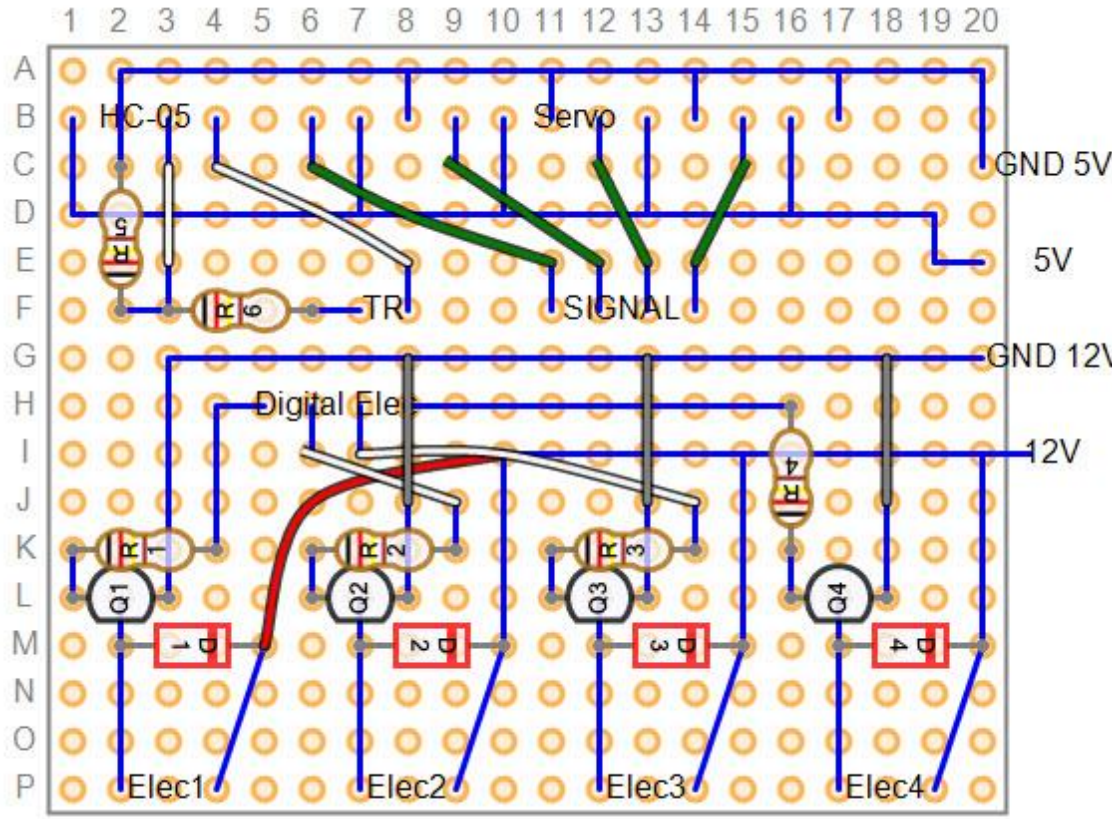


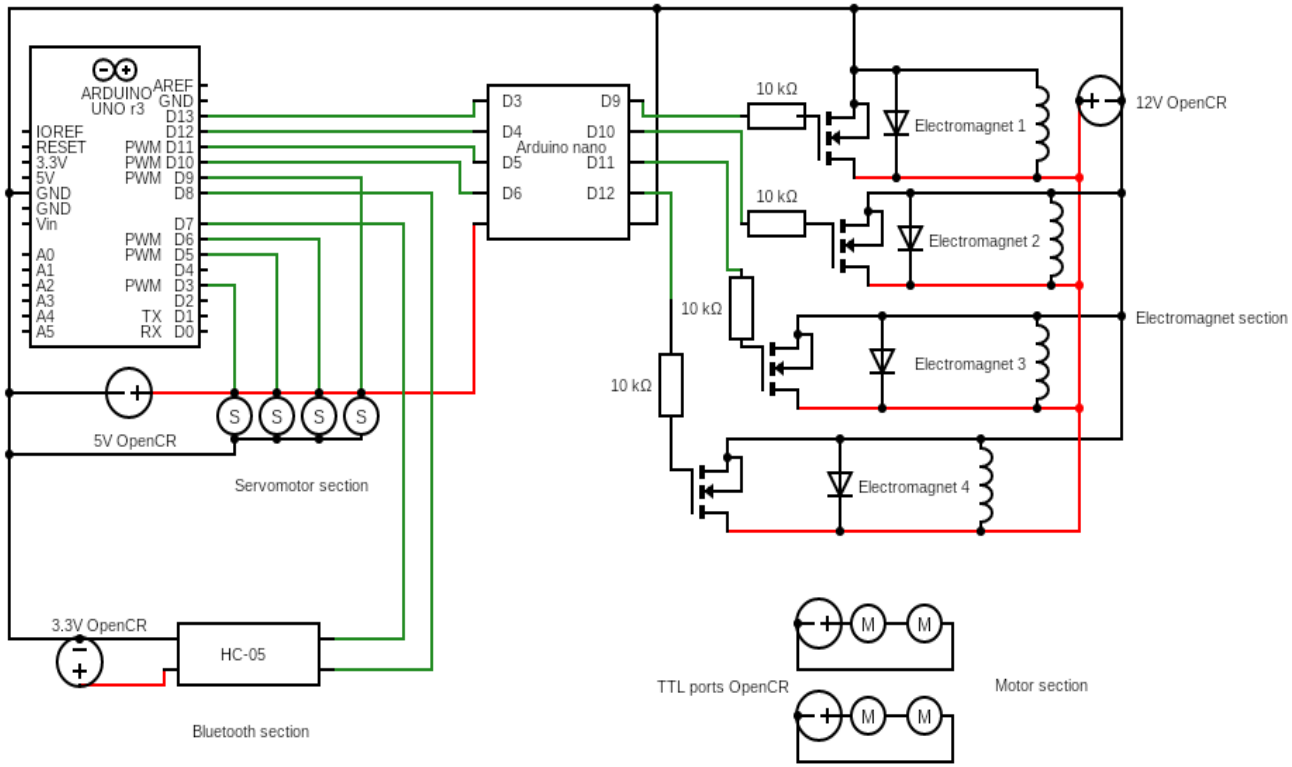


7-Result without open cr card



Electrical assembly guide



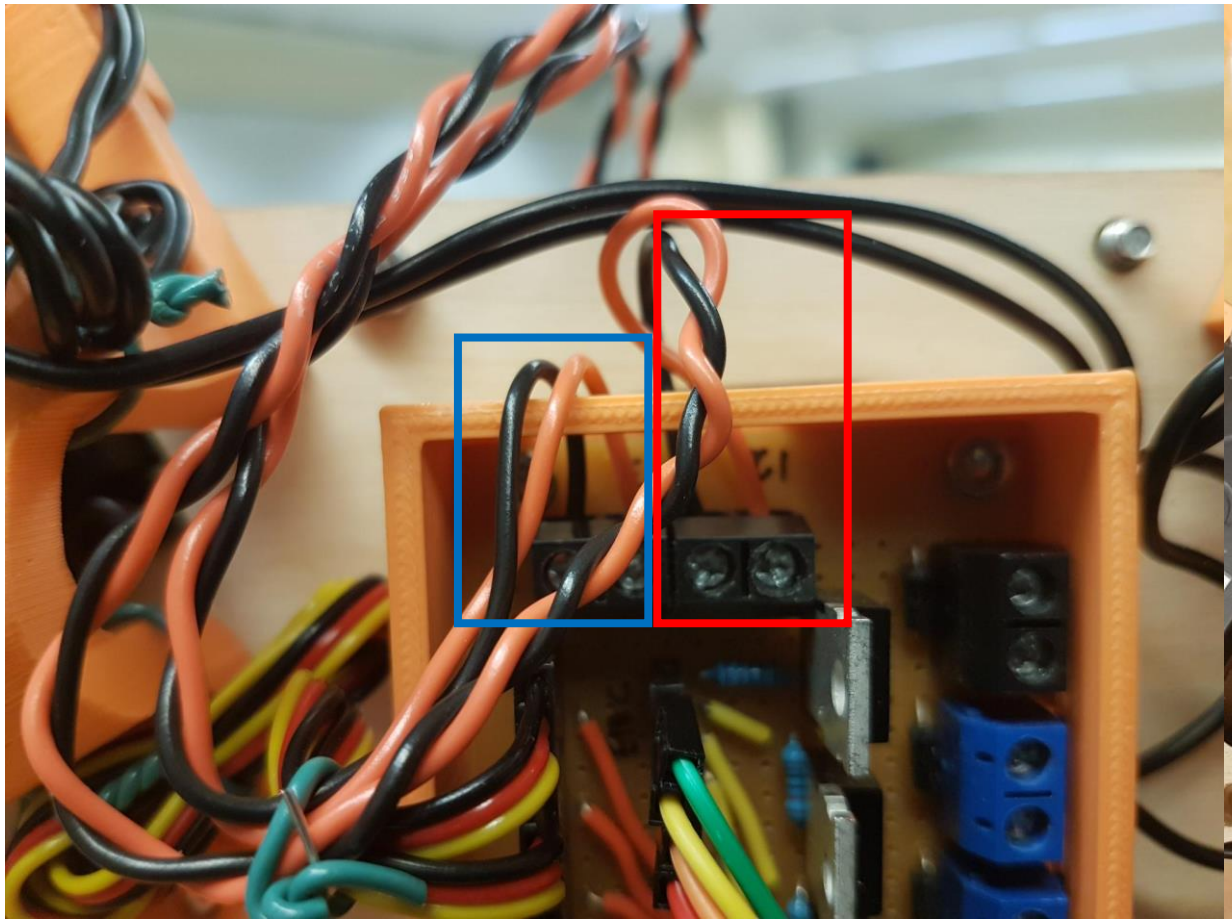


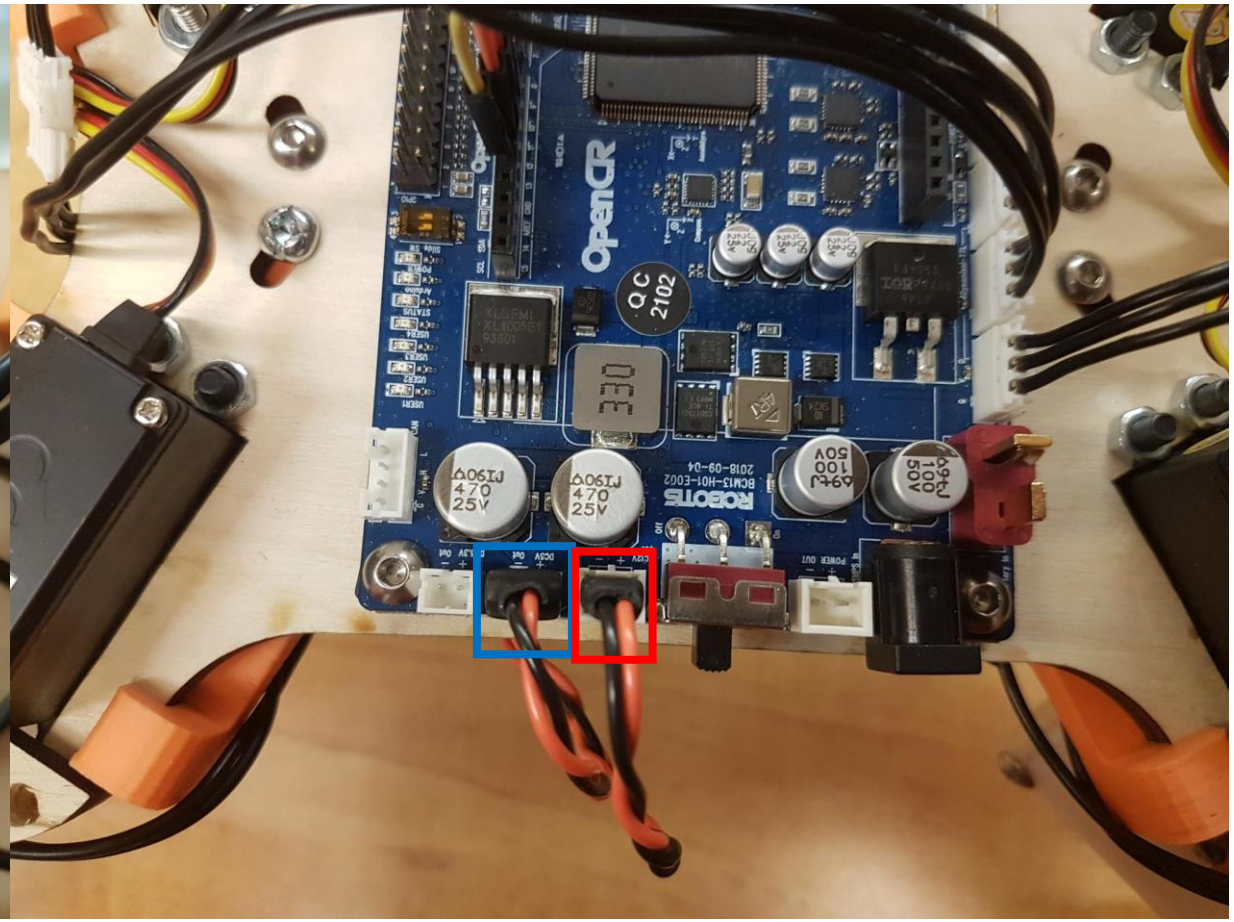
1- Explanations about previous images

- U can base yourself on the previous photos to do the electrical assembly, just mind that depending on your open cr card, some pins might not work. U can change them as necessary, just remember to change the code later depending on your choices.

*Red=12V
*Blue=5V

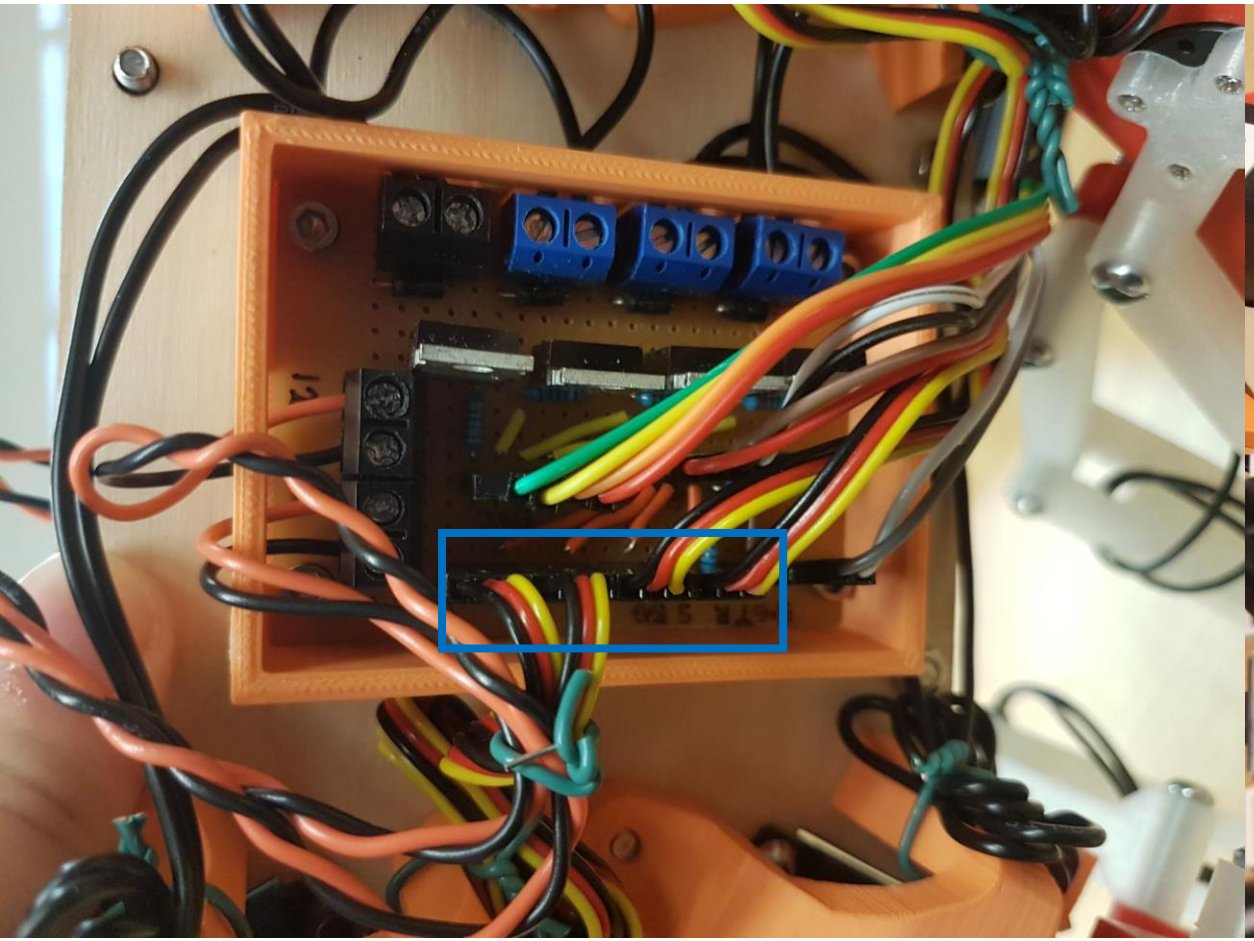
2- IRL demo of the protoboard 1

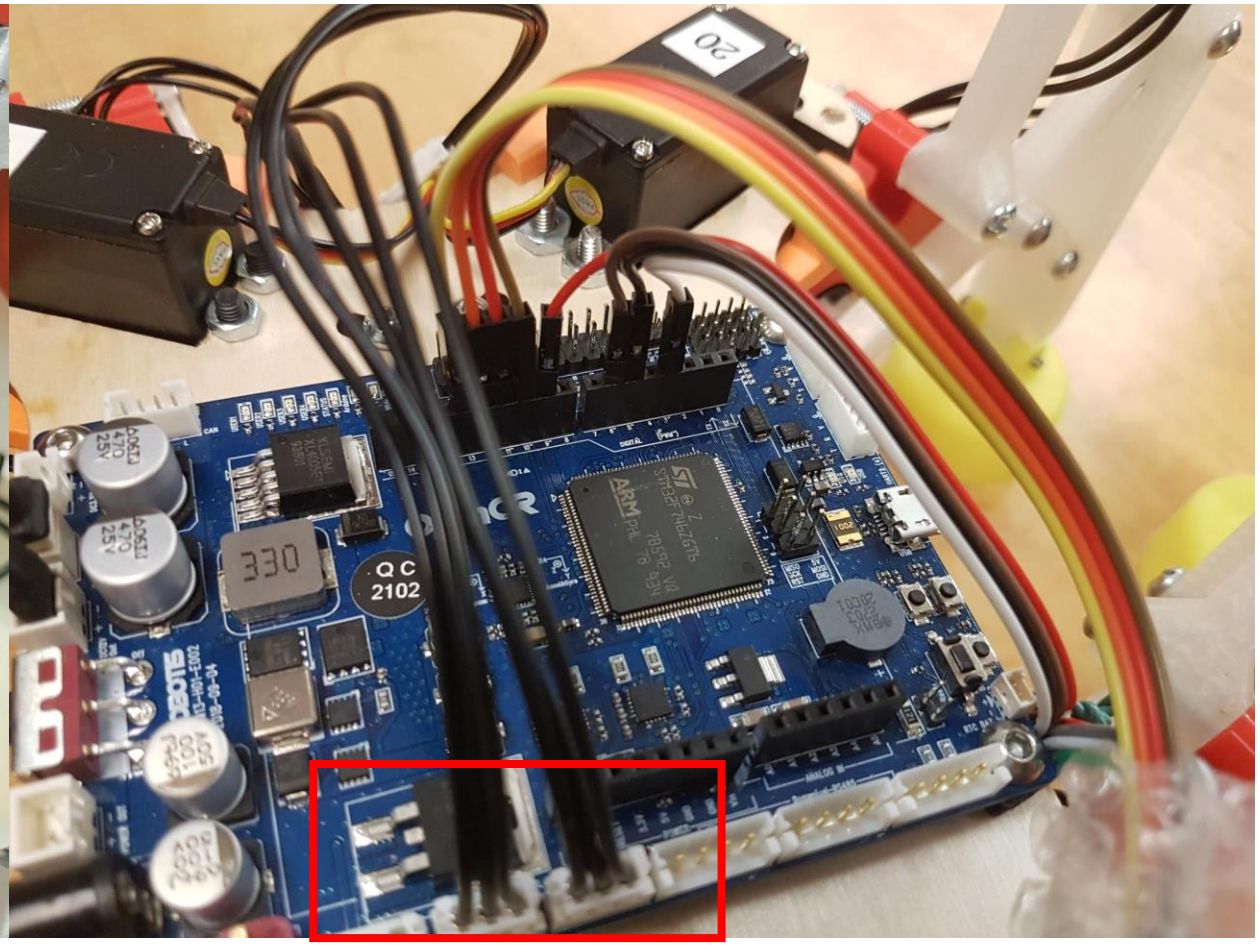




*Red=Motor
*Blue=servomotor

2- IRL demo of the protoboard 2





*Red=signals for the electromagnets
*Blue=signals for the servomotor

2- IRL demo of the protoboard 3