Assembling & RUN a robot arm

- مهمة ميدانية –

1- Assembling the part of robot (link\joint)

2- Connect the servo motor on the Arduino and running it before starting run of the robot arm

3- Connect & Test each motor individually by using Arduino & breadboard

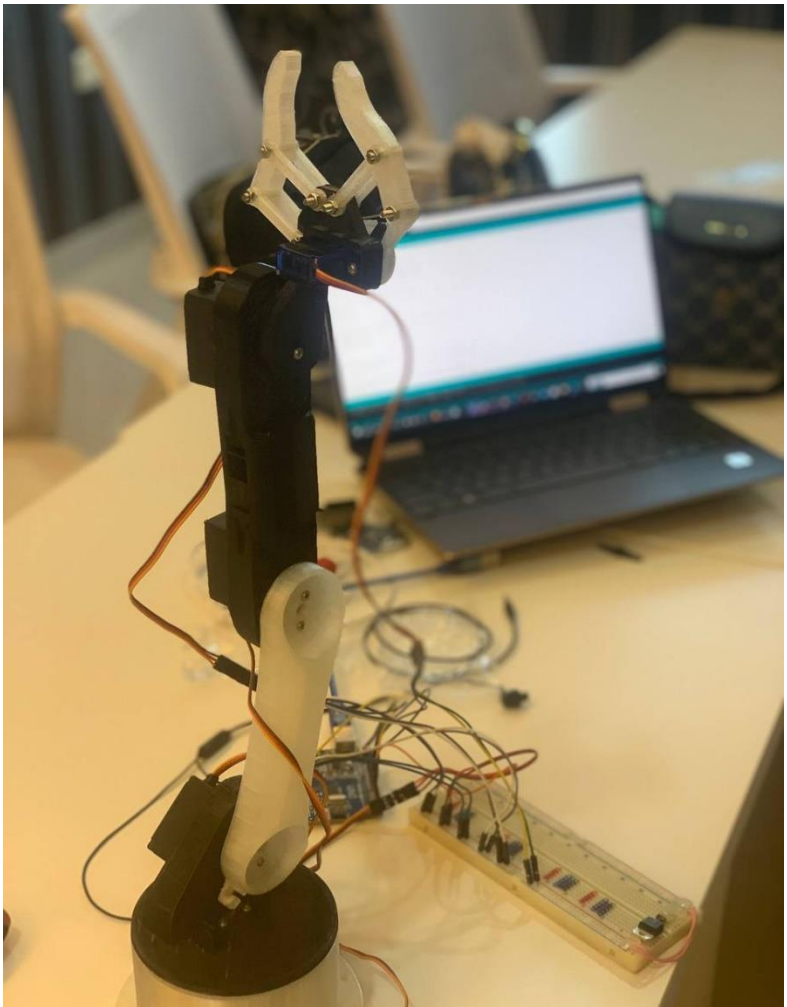
4- Connect all the 5 motors in the breadboard and move the arm via the Arduino IDE

- CODE to run the SERVO motor in Arduino:

```
#include <Servo.h>
Servo myservo;  // create servo object to control a servo
twelve servo objects can be created on most boards //

int pos = 0;    // variable to store the servo position

void setup() {
myservo.attach(9);  // attaches the servo on pin 9 to the servo object
{

void loop() {
for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees
in steps of 1 degree //
myservo.write(pos);              // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{
for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees
myservo.write(pos);              // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{
{
```

- pictures of robot arm BEFORE assembling :

- pictures of robot arm AFTER assembling :



- CODE to run the robot arm :

```
#include <Servo.h>
Servo myservo;  // create servo object to control a servo
Servo myservo1;  // create servo object to control a servo
Servo myservo2;  // create servo object to control a servo
Servo myservo3;  // create servo object to control a servo
Servo myservo4;  // create servo object to control a servo

twelve servo objects can be created on most boards //
// default positions
int pos = 0;    // variable to store the servo position
int pos1 = 60;
int pos2 = 90;
int pos3 = 30;
int pos4 = 30;

void setup() {
myservo.attach(8);  // attaches the servo on pin 9 to the servo object
myservo1.attach(9);
myservo2.attach(10);
myservo3.attach(11);
myservo4.attach(12);
{

void loop () {
for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees
in steps of 1 degree //
myservo.write(pos);              // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{
```

```
for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees
myservo.write(pos);              // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{

for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees
in steps of 1 degree //
myservo1.write(pos1);            // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{
for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees
myservo1.write(pos1);            // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{

for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees
in steps of 1 degree //
myservo2.write(pos2);            // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{
for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees
myservo2.write(pos2);            // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{

for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees
in steps of 1 degree //
myservo3.write(pos3);            // tell servo to go to position in variable 'pos'
delay(15);                       // waits 15 ms for the servo to reach the position
{
for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees
```

```
myservo3.write(pos3);           // tell servo to go to position in variable 'pos'
delay(15);                      // waits 15 ms for the servo to reach the position
{

for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180 degrees
in steps of 1 degree //
myservo4.write(pos4);           // tell servo to go to position in variable 'pos'
delay(15);                      // waits 15 ms for the servo to reach the position
{
for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees
myservo4.write(pos4);           // tell servo to go to position in variable 'pos'
delay(15);                      // waits 15 ms for the servo to reach the position
{



{
```

- Finally : we move the all robot arm parts together😻.