MAKER'S LAB PROJECT

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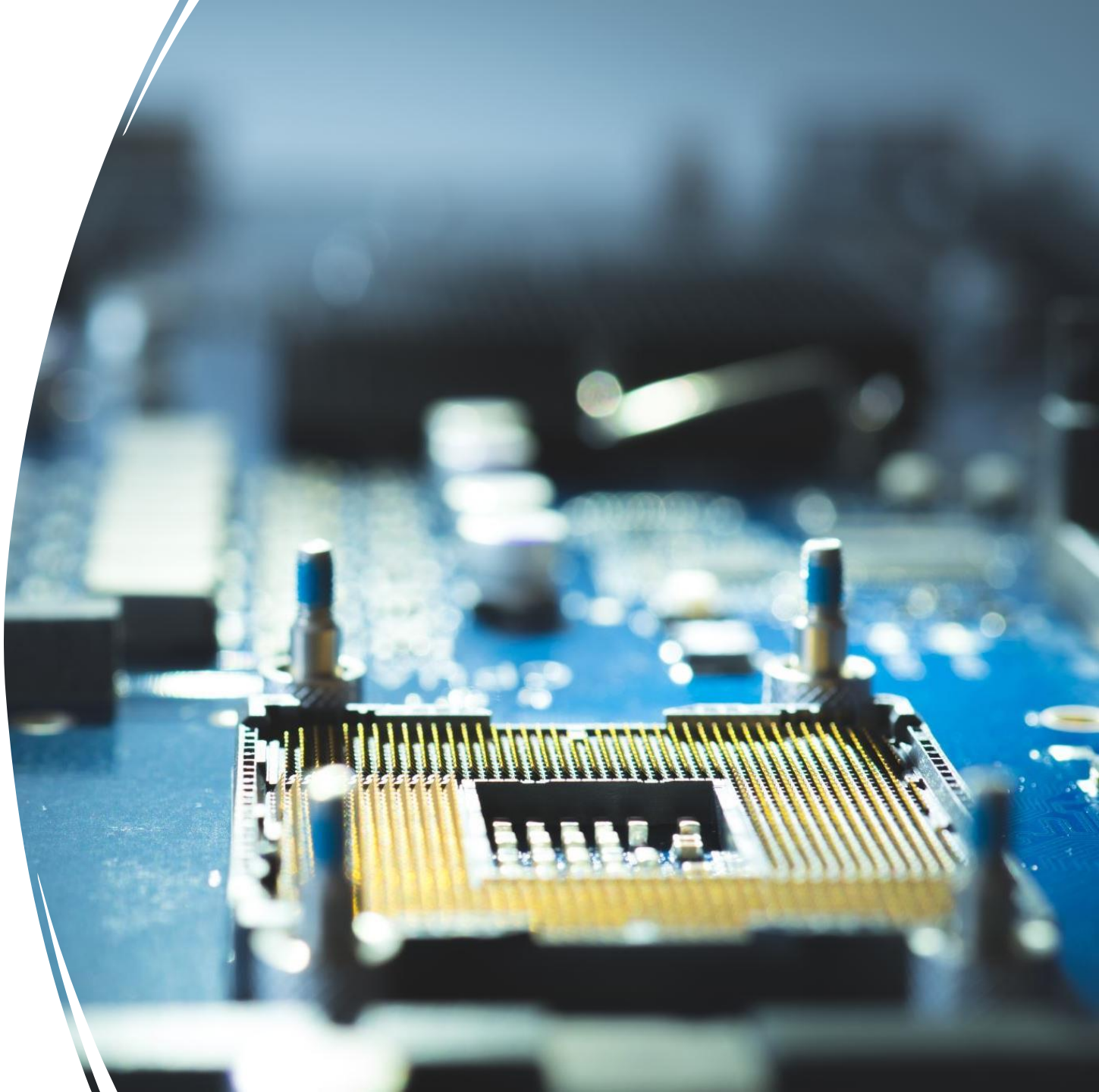
SOLAR TRACKER

- Solar tracker is a device that orients a payload toward the Sun. Payloads are usually solar panels, parabolic troughs, Fresnel reflectors, lenses, or the mirrors of a heliostat.

Components Required

- Arduino/ Microcontroller
- PCB Board
- LCD(Liquid Crystal Display)
- LDR(Light detecting resistor)
- RGB, LED'S
- Servo motor big
- Servo motor small
- PCB components
- RMC base and wires
- Soldering kit and tool kit
- Multimeter, power adapter



DUAL AXIS SOLAR TRACKER MODEL

WHAT IS TO BE DONE:

3D Printing components

Soldering on PCB Board

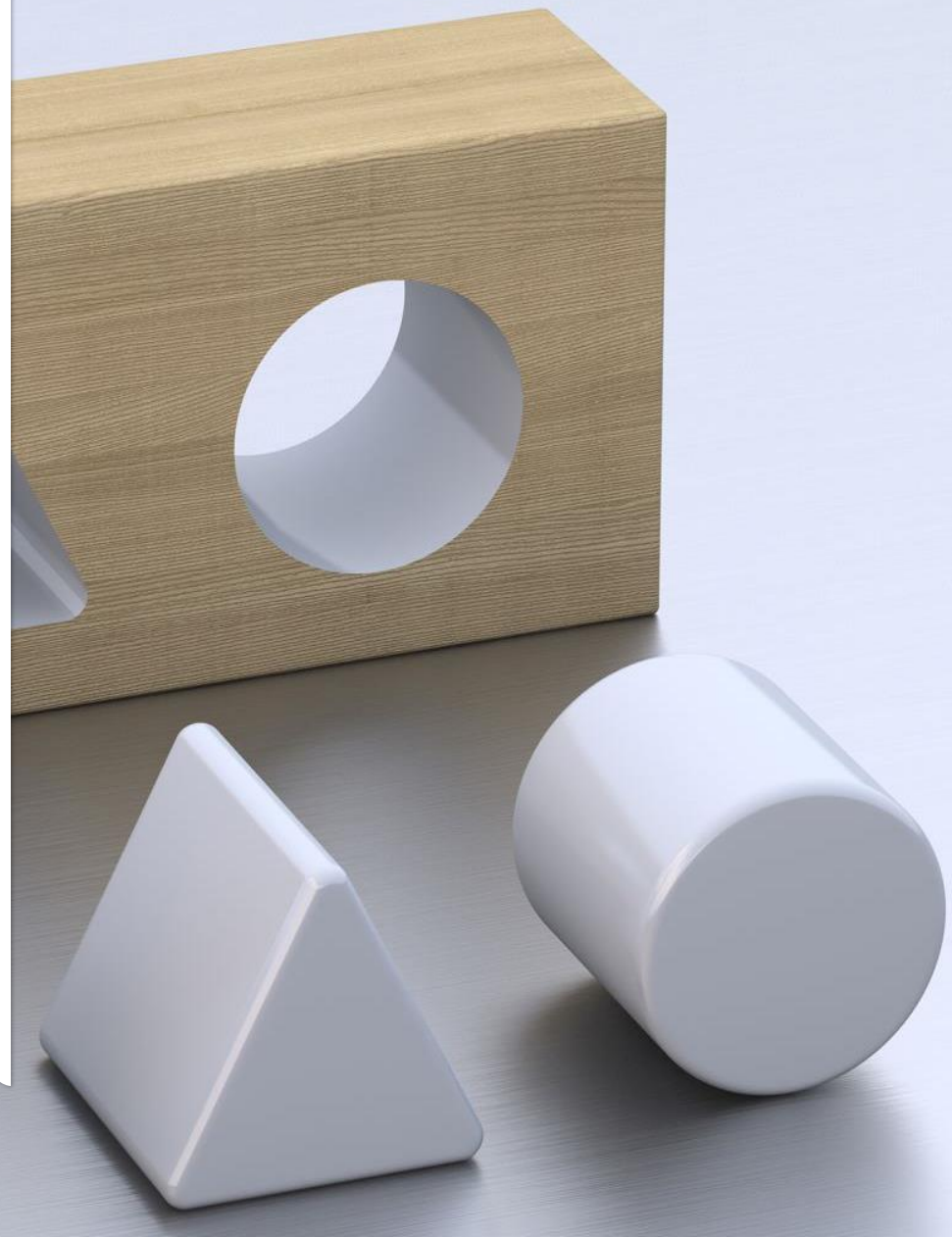
Coding in Arduino

Connections

3D Printing

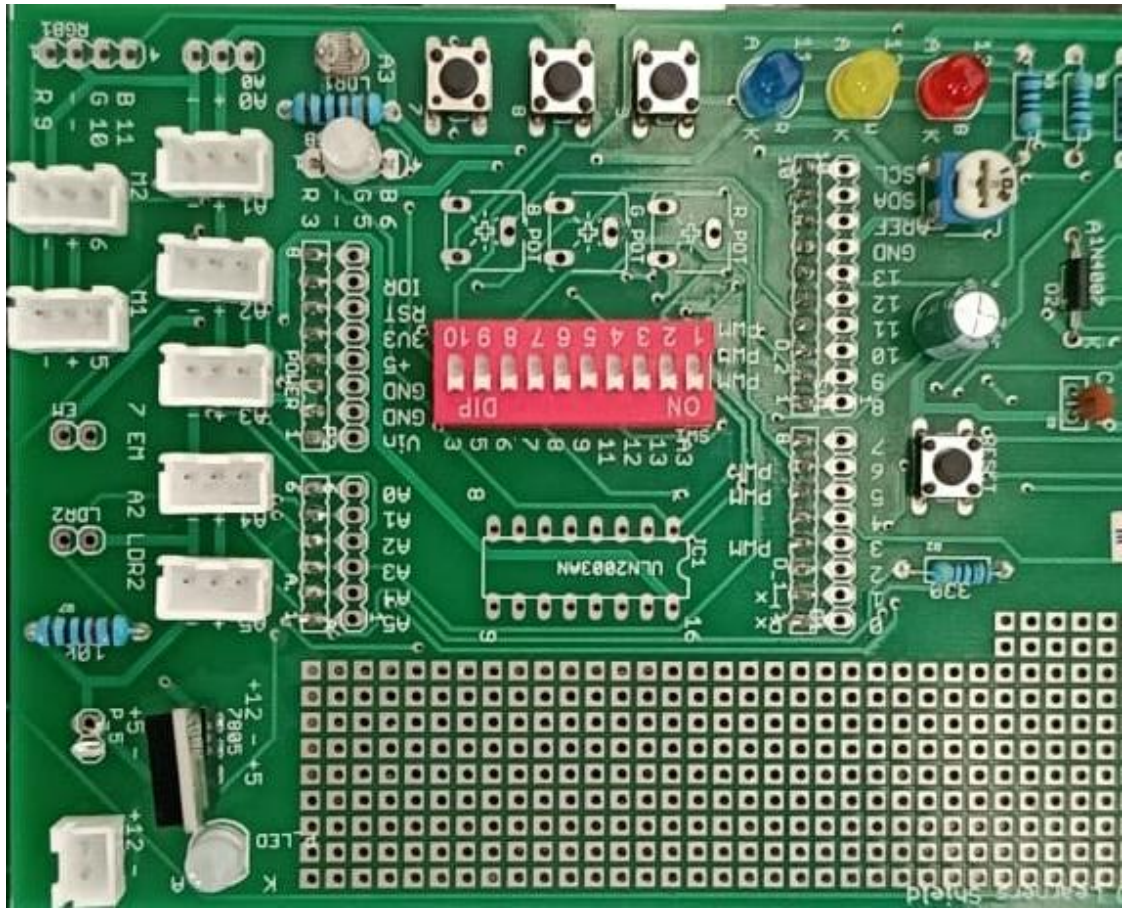
3D printing or additive manufacturing is the construction of a three-dimensional object from a CAD model or a digital 3D model.

Print the necessary dimensions of the parts needed for the project using **CREALITY PRINT SOFTWARE**.



Soldering on PCB Board

- Soldering is a process of joining two metal surfaces together using a filler metal called solder.



Arduino Code

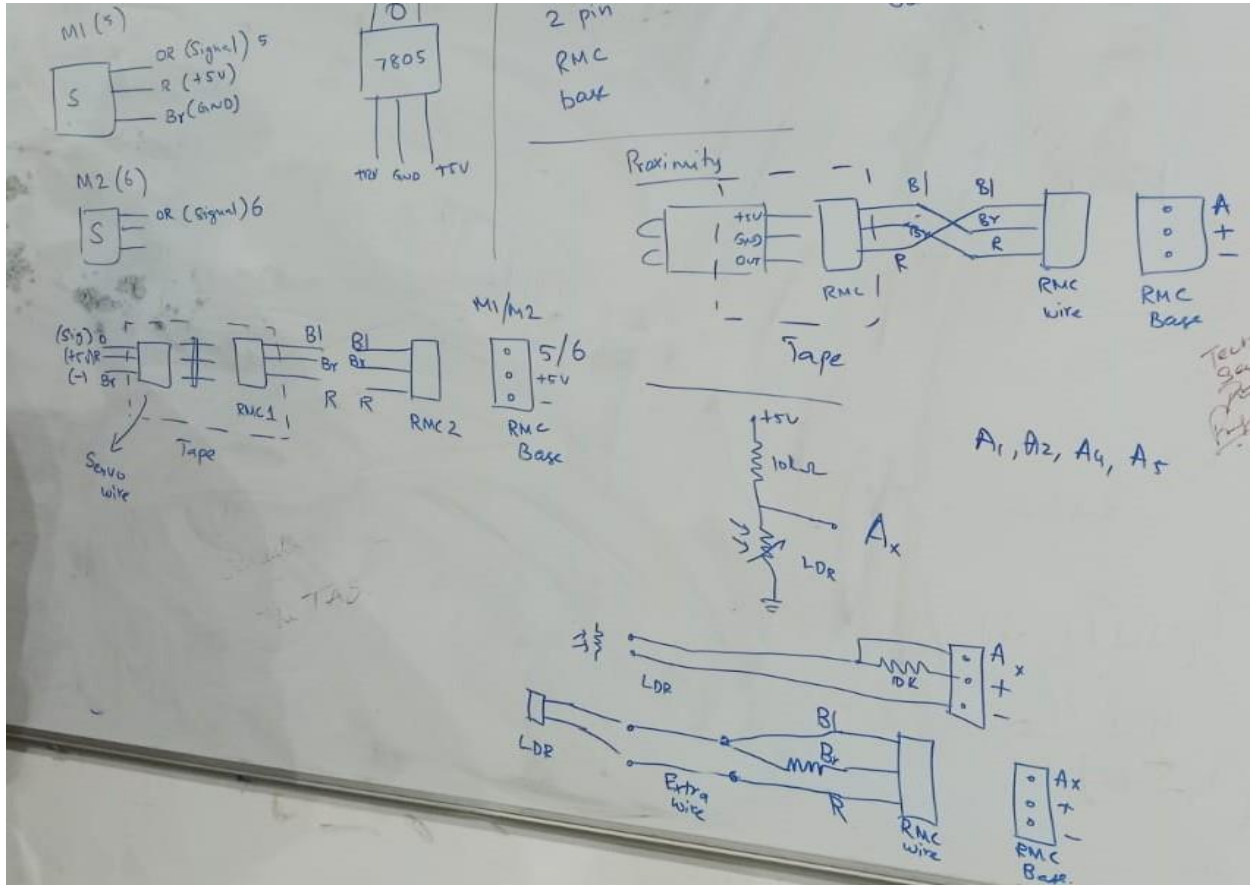
```
#include <Servo.h>

Servo horizontal; //Large motor

Servo vertical; //Small motor

int servoh= 85;

int servohLimitHigh= 170; int servohLimitLow= 0;

int servov= 100;

int servovLimitHigh= 180; int servovLimitLow= 15;

//LDR

 int ldrl= A4;//left

 int ldrr= A5;//right

 int ldrt= A1;//top

 int ldrd= A2;//down
```

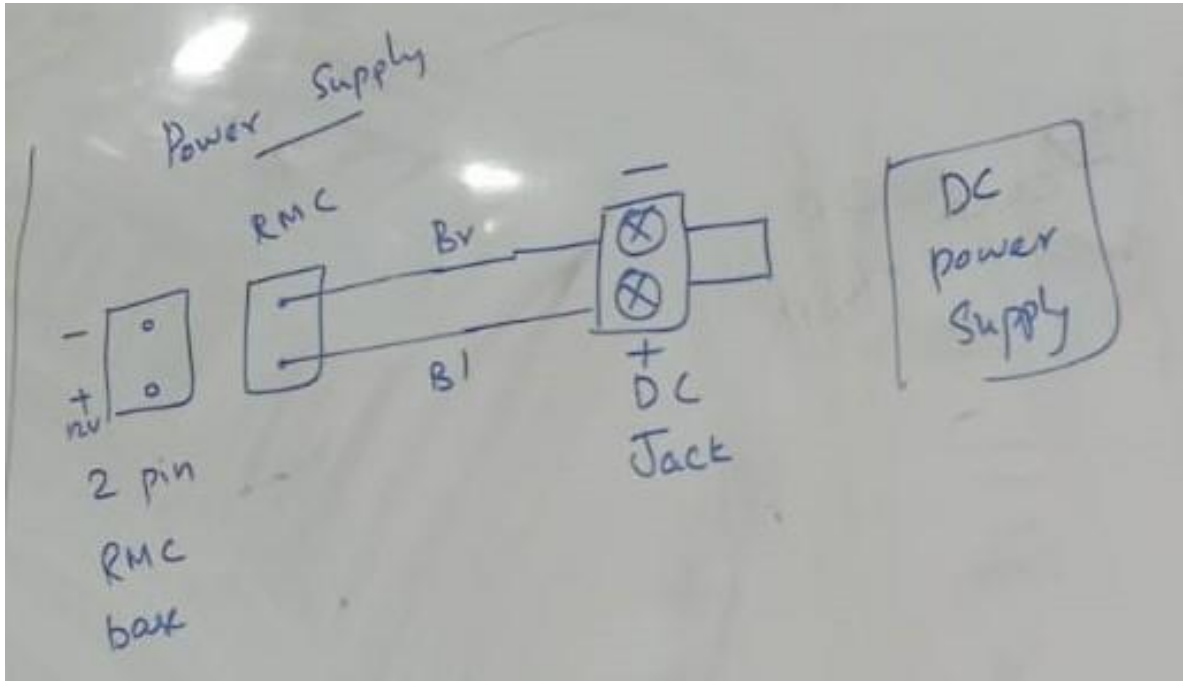
```
//Code variables
 int l=0;//left top
int r=0;//right top
 int t=0;//left down
int d=0;//right down
void setup() {
Serial.begin(9600);
horizontal.attach(5);
vertical.attach(6);
 horizontal.write(70);
 vertical.write(100);
delay(2000); }
```

```
void loop() {
l= analogRead(ldrl);
r= analogRead(ldrr);
t= analogRead(ldrt);
d= analogRead(ldrd);
Serial.print(l);
Serial.print(", ");
Serial.print(r);
Serial.print(", ");
Serial.print(t);
Serial.print(", ");
Serial.println(d);
```

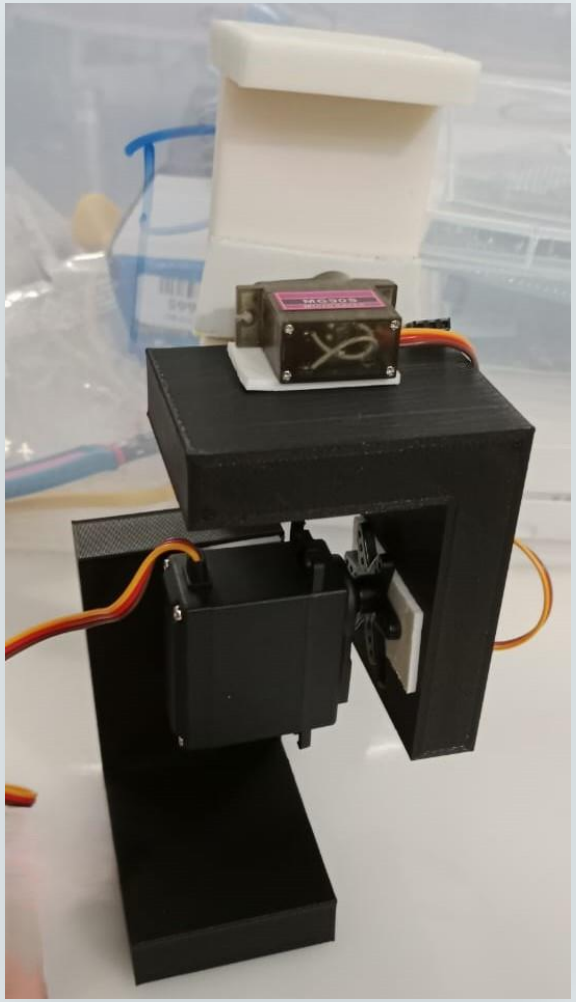
```
if(t-d>50){
      if(servov>servovLimitLow)
         servov-=7; } }
else if(d-t>50){
      if(servov< servovLimitHigh){
         servov+=7; } }
 vertical.write(servov);

if(l-r>50){
      if(servoh>servohLimitLow){
          servoh-=7;}}
else if(r-l>50){
       if(servoh< servohLimitHigh){
           servoh+=7; } }
horizontal.write(servoh);
 delay(250);
}
```

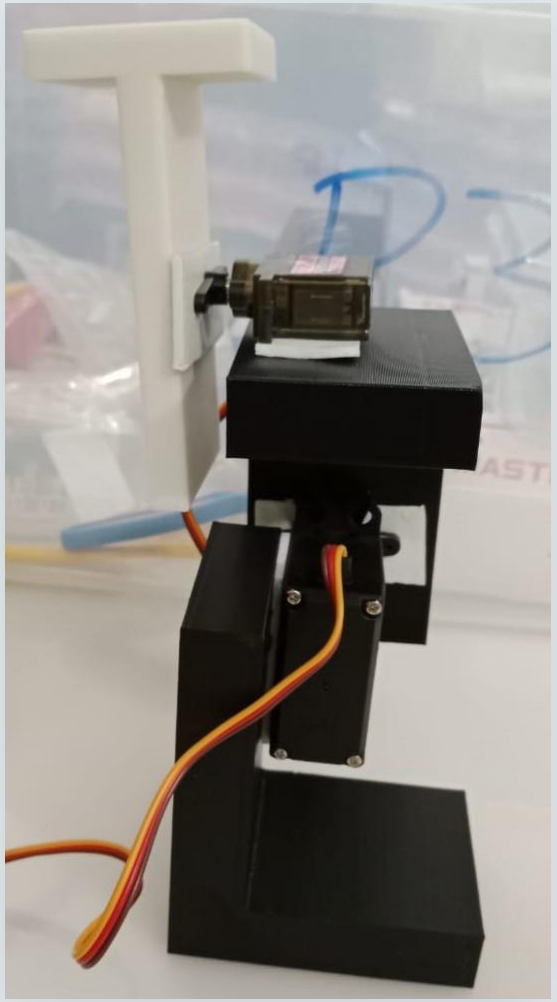
Connections





3D MODEL






THANK YOU