

# Casă Automatizată

Realizator Proiect : Balazs Zsolt

## Idee inițială

Proiectul are ca scop a realiza o casă automatizată/semi automatizata cu ajutorul unei placi de dezvoltare Raspberry Pi

Contact :  
zsolti35@yahoo.com

Componente  
folosite

Cost Materiale  
469.05 ron

Placa :RASPERRY PI 3 MODEL B+  
Alimentare :AC-DC, 5.1V, 2.5A  
Breadboard 830 puncte  
Cablu convertor HDMI la VGA  
Conector tata pentru Arduino 5.5x2.1  
KIT Breadboard830 + 65xfire jumper  
LED 3mm  
Modul driver dual motor MX1508  
Modul senzor lumina YQZBML  
Motor DC 3V-6V cu reductor FSIGTI  
Rezistor 1/4W 10K + 1K  
Senzor picaturi de ploaie WLONGC\_R  
Senzor temperatura si umiditate digital DHT11  
Stepper Motor pas cu pas 5V DC 28BYJ-48



## Componente necesare pentru rulare

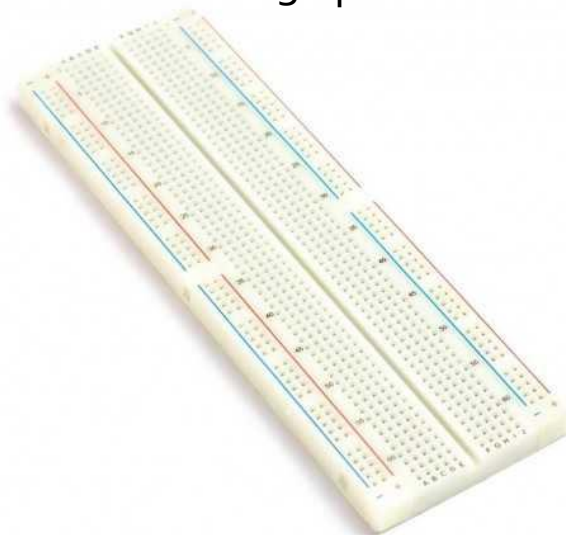
Pentru pornirea sistemului avem nevoie de urmatoarele lucruri :

- 3 prize
- Monitor
- Tastatura
- Maus
- Sd card
- Cabluri de conectare



## Prezentarea componentelor folosite

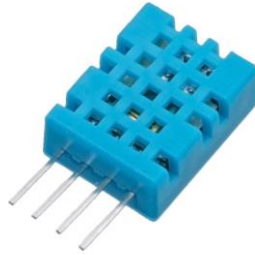
Breadboard 830 puncte



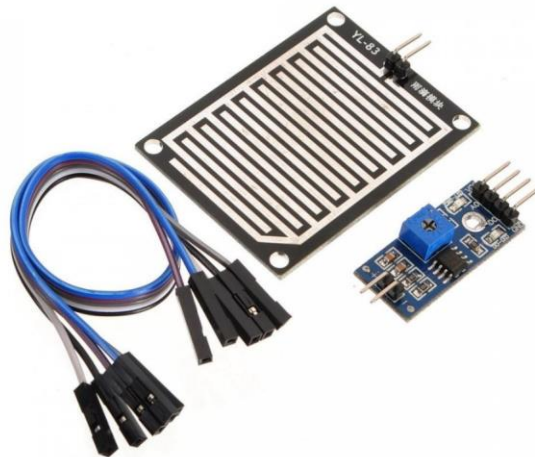
Modul sursa de alimentare 5v - 3.3v breadboard



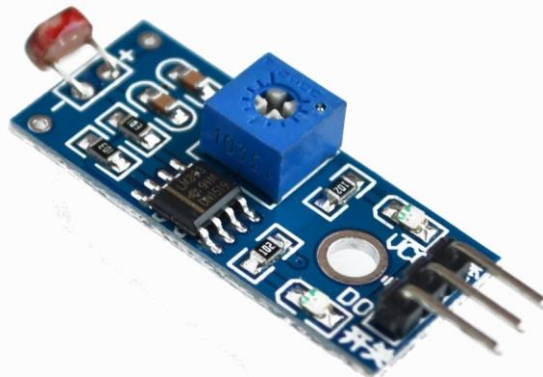
Senzor temperatura si umiditate digital DHT11



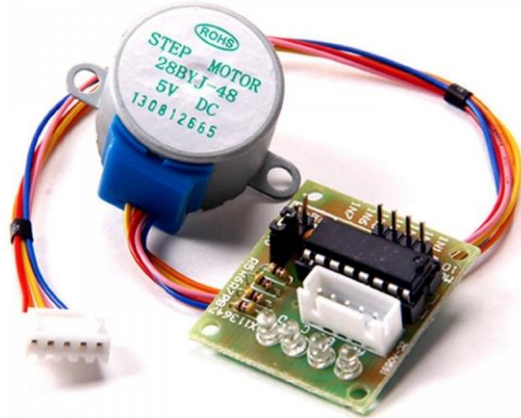
Senzor picaturi de ploaie



Modul senzor lumina



Stepper Motor pas cu pas 5V DC 28BYJ-48  
cu reductie + driver



Motor DC 3V-6V cu reductor 1:48



Modul driver dual motor MX1508



# Cod

## Programarea Componentelor

Programarea plăci de dezvoltatoare s-a realizat în 2 programe diferite și în 2 limbaje :

- Programarea de baza s-a realizat în Thony în limbaj Python

- Asamblarea fragmentelor de cod s-a realizat prin Scratch prin programare vizuala



# Program suport

Feladatok Jelmezek Hangok

kattintásakor

szóköz lenyomásakor

küldj üzenetet: gipiaoserveron

mindig

küldj üzenetet: lumsen.py

várj 1 mp-et

ha lumsen < 200

küldj üzenetet: DCUp.py

küldj üzenetet: Dcle.py

ha ploaie > 10

küldj üzenetet: servoL.py

küldj üzenetet: gpio5on

küldj üzenetet: servoR.py

küldj üzenetet: gpio5off

ha ploaie < 10 és lumsen < 200

küldj üzenetet: DCUp.py

küldj üzenetet: servoR.py

küldj üzenetet: Dcle.py

küldj üzenetet: servoL.py

ha temp > 30 és ploaie < 10

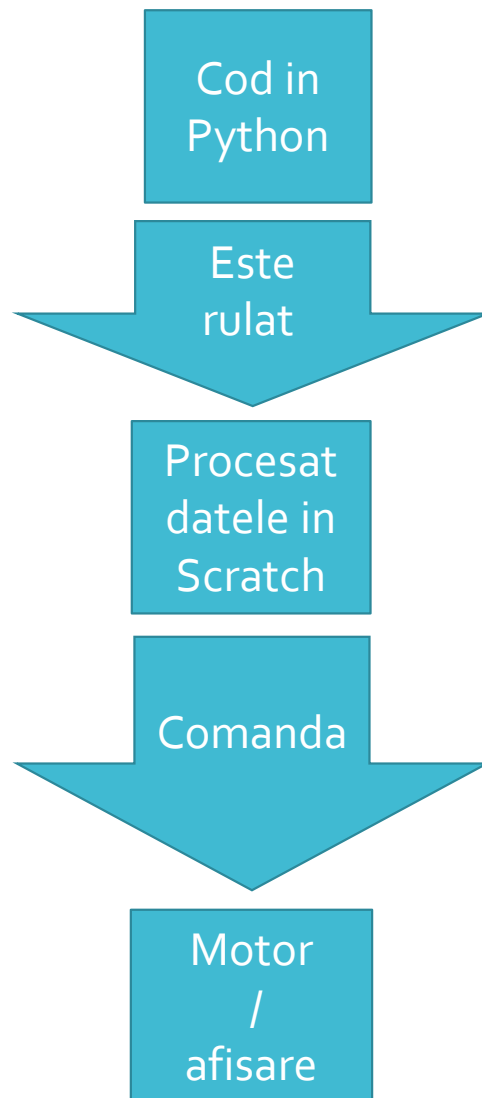
küldj üzenetet: servoR.py

ha cputemp > 60

mindent állíts le

## Descriere Program Suport

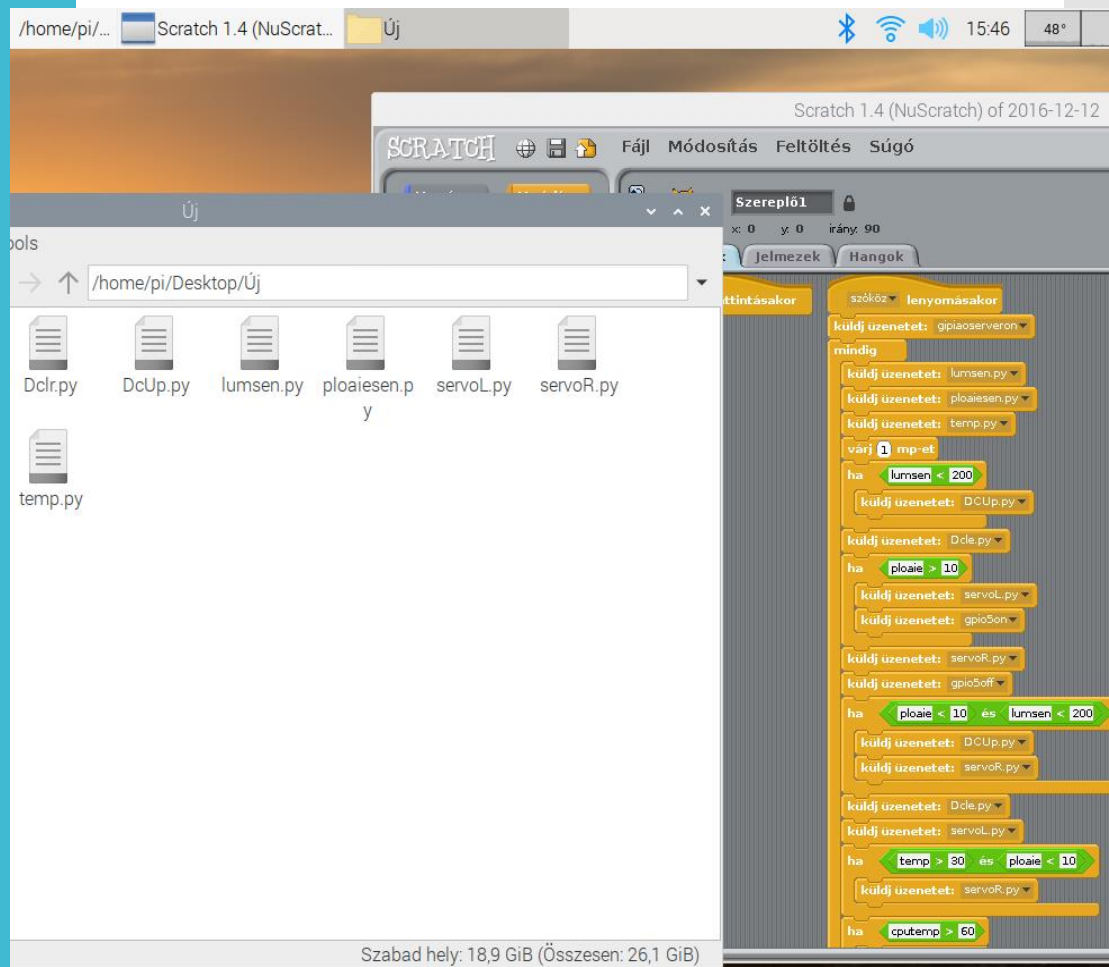
Programul Suport are rolul principal de a porni programele scrise in Python si a le rula si a prelua valori .



Anumite funcții sunt controlate in mod direct de programul suport

Părțile sunt scrise în Python și ele la rândul lor folosesc biblioteci prescrise

Părți de  
program



Dcle.py

```
import RPi.GPIO as GPIO
```

```
RpiMotorLib import RpiMotorLib
```

```
GpioPins = [26, 19, 13, 6]
```

```
mymotortest = RpiMotorLib.MXMotor("MyMotorOne", "MX1508")
```

```
mymotortest.motor_run(GpioPins ,  
1.7, 1000, False, False, "half", 0.5)
```

```
GPIO.cleanup()
```

```
import RPi.GPIO as GPIO
```

```
RpiMotorLib import RpiMotorLib
```

```
GpioPins = [6, 13, 19, 26]
```

```
mymotortest = RpiMotorLib.MXMotor("MyMotorOne", "MX1508")
```

```
mymotortest.motor_run(GpioPins ,  
1.7, 1000, False, False, "half", 0.5)
```

```
GPIO.cleanup()
```

```
#GPIO16  
from YQZBML import YQZBML  
  
lumsen=0  
  
YQZ = YQZBML(debug=True)  
#print(YQZ.lux())  
  
lumsen=YQZ.lux()
```

lumsen.py

```
#GPIO12  
from time import sleep  
from gpiozero import InputDevice  
ploaie=0  
no_rain = InputDevice(12)  
  
if not no_rain.is_active:  
    #print("Ploua!")  
    ploaie=no_rain  
    sleep(1)
```

ploaiesen  
.py

servoL.py

```
import RPi.GPIO as GPIO
```

```
RpiMotorLib import RpiMotorLib
```

```
GpioPins = [18, 23, 24, 25]
```

```
mymotortest =  
RpiMotorLib.BYJMotor("MyMotorOne",  
"28BYJ")
```

```
mymotortest.motor_run(GpioPins , 0.1,  
140, False, False, "half", 0.5)
```

```
GPIO.cleanup()
```



servoR.py

```
import RPi.GPIO as GPIO
```

```
RpiMotorLib import RpiMotorLib
```

```
GpioPins = [25, 24, 23, 18]
```

```
mymotortest = RpiMotorLib.BYJMotor(  
"MyMotorOne", "28BYJ")
```

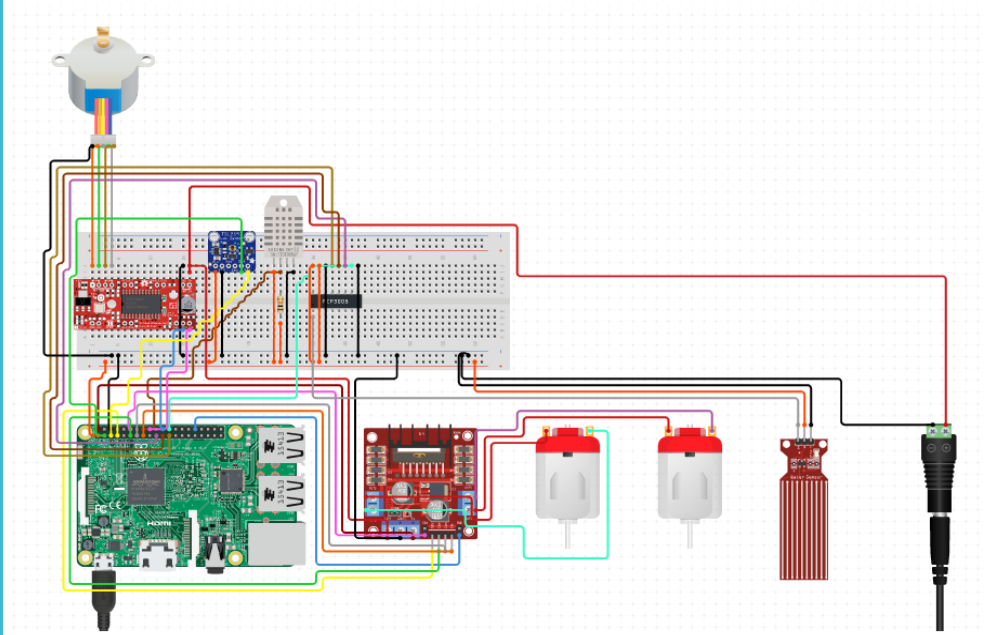
```
mymotortest.motor_run(GpioPins , 0.1,  
145, False, False, "half", 0.5)
```

```
GPIO.cleanup()
```

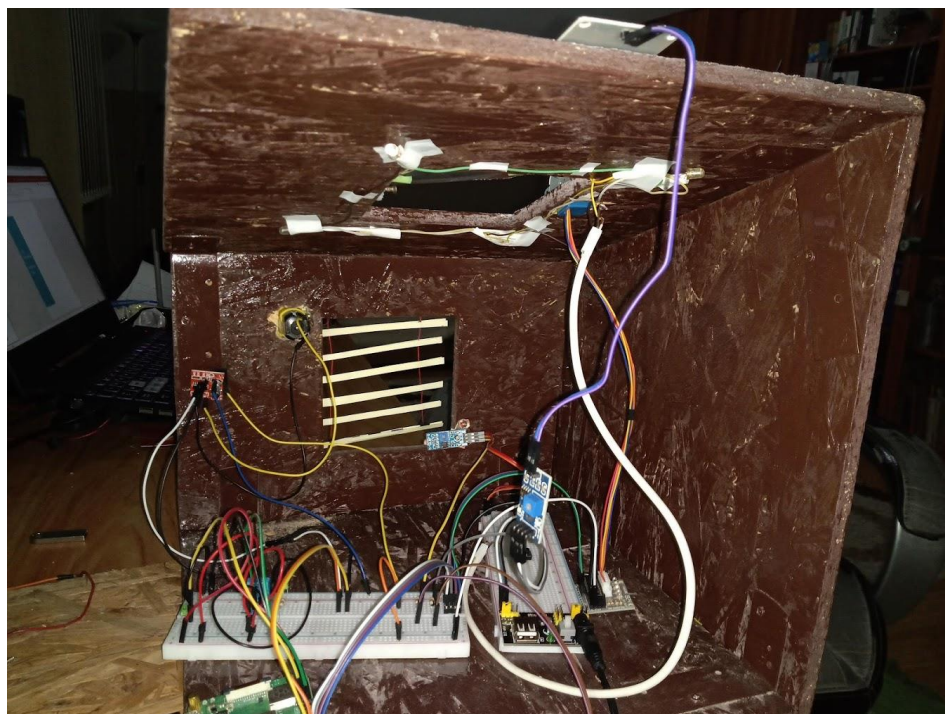
temp.py

```
#GPIO17  
import Adafruit_DHT  
from time import sleep  
sensor=Adafruit_DHT.DHT11  
gpio=17  
  
temp=Temp={0:0.1f}*C  
  
humidity, temperature =  
Adafruit_DHT.read_retry(sensor, gpio)  
  
if humidity is not None and temperature  
is not None:  
    print('Temp={0:0.1f}*C Humidity={1:0.1f}  
%'.format(temperature, humidity))  
    temp=Temp={0:0.1f}*C  
else:  
    print('Failed to get reading. Try again!')  
    sleep(10)  
if humidity is not None and  
temperature is not None:  
    print('Temp={0:0.1f}*C Humidity={1:0.1f}  
%'.format(temperature, humidity))  
    temp=Temp={0:0.1f}*C  
else:  
    print('Failed to get reading. Try again!')
```

# Structura

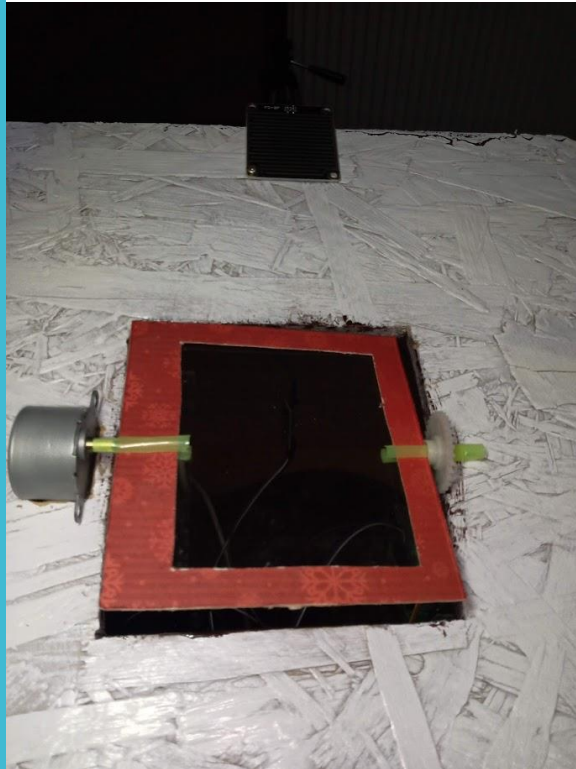


# Structura

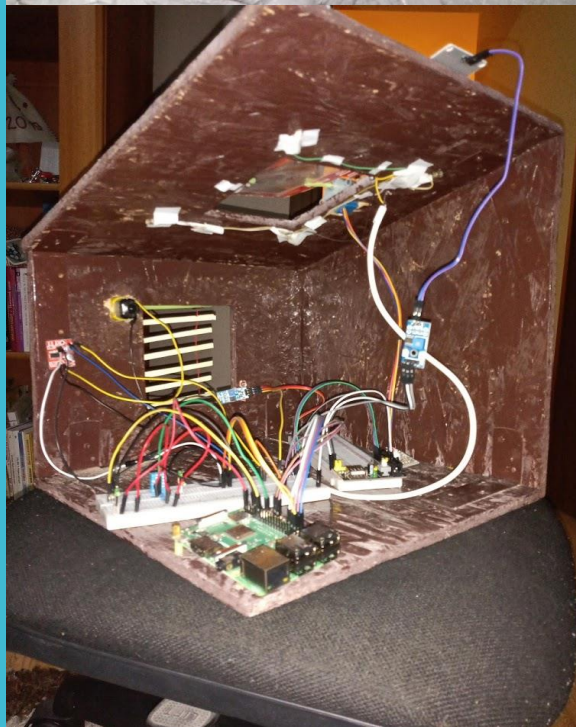


Structura casei e alcătuit din plăci OSB de 8mm geamul de sus e alcătuit din hârtie cartonată și pvc jaluzeaua e alcătuit din ata textil și hârtie cartonată + o greutate din fier.

Puncte  
forte



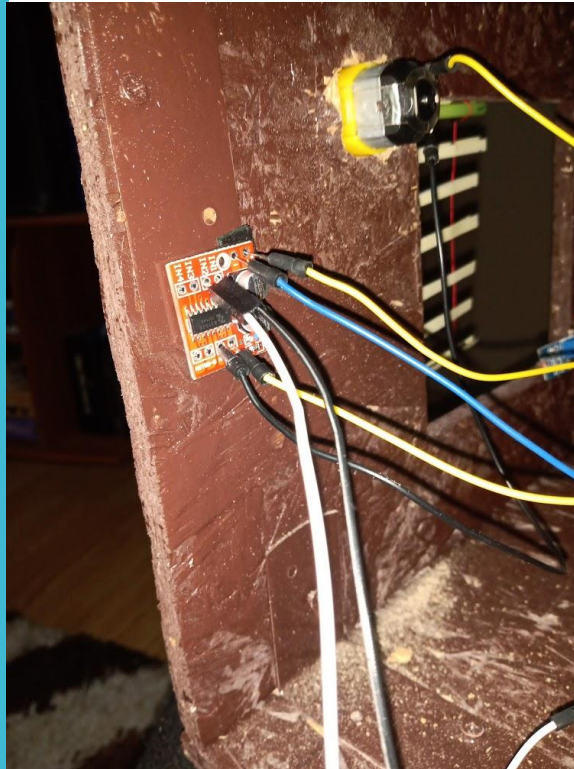
Timp de raspuns  
scazut la  
schimbari



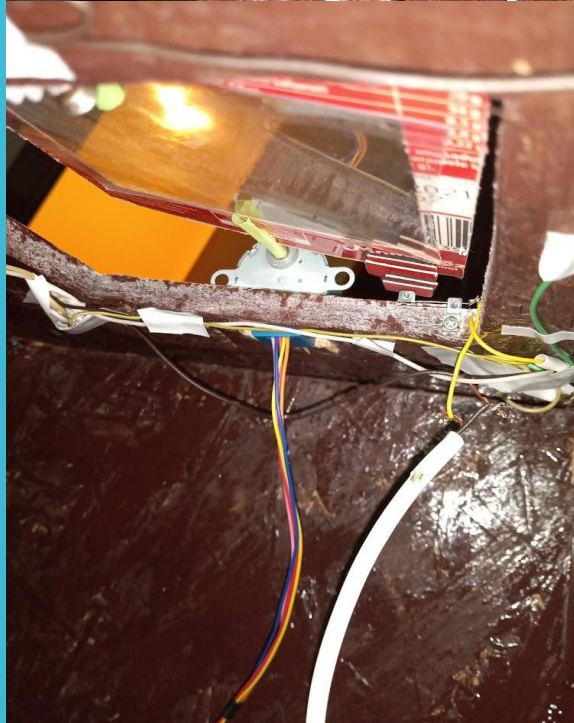
Risc mic la  
supraincalzire  
De oare ce are mult  
loc lalnga circuite



## Puncte slabe

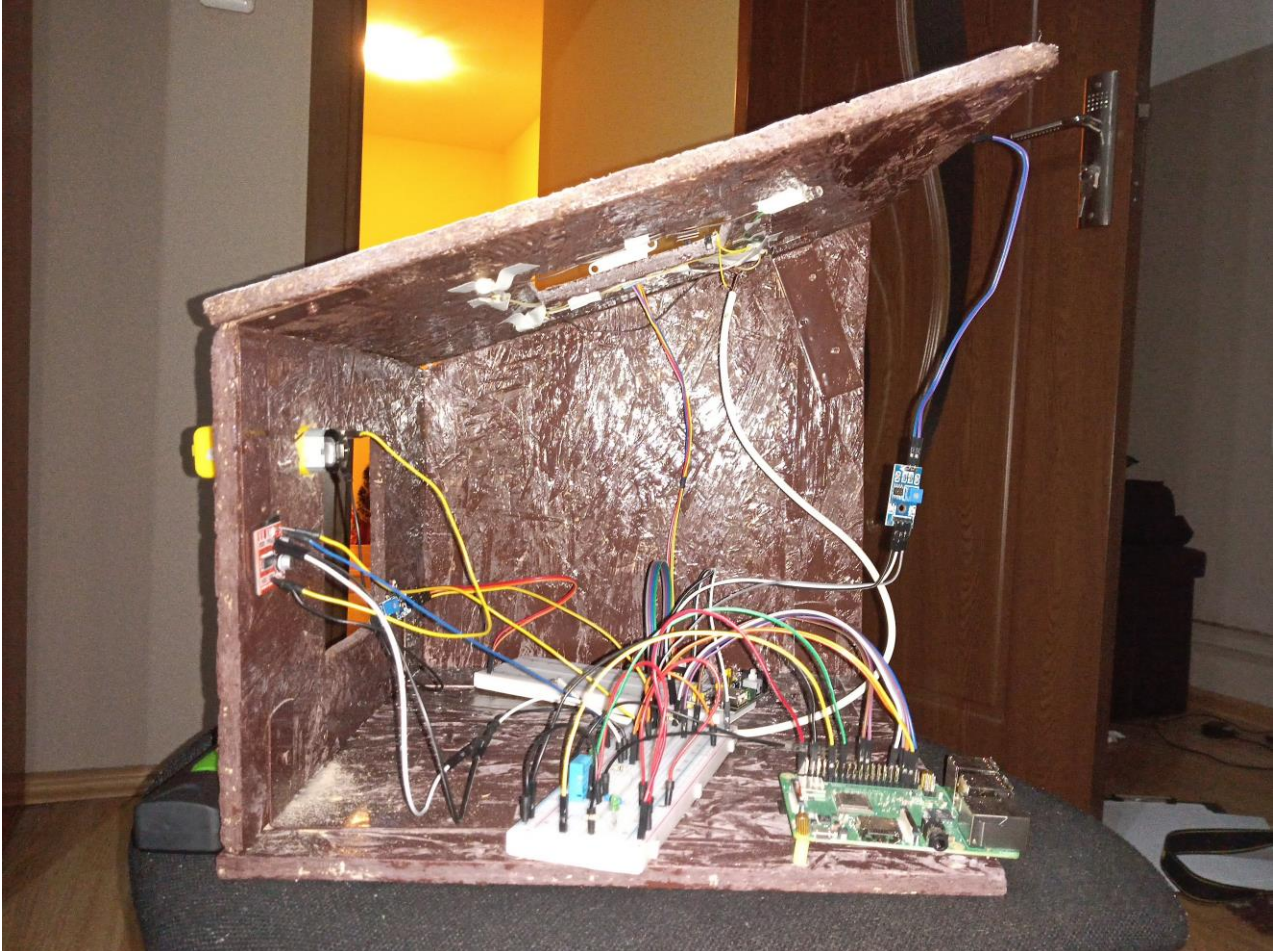


Anumite fire nu  
sunt bine lipite

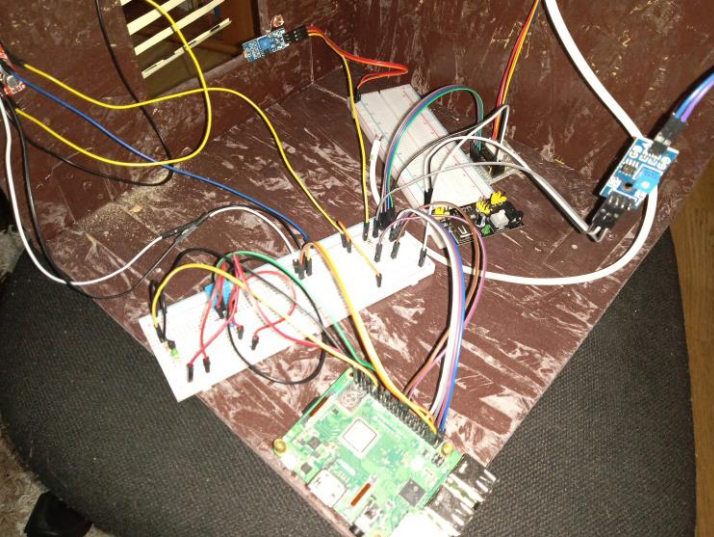


Anumite piese nu  
sunt propoltionale  
cu macheta casei

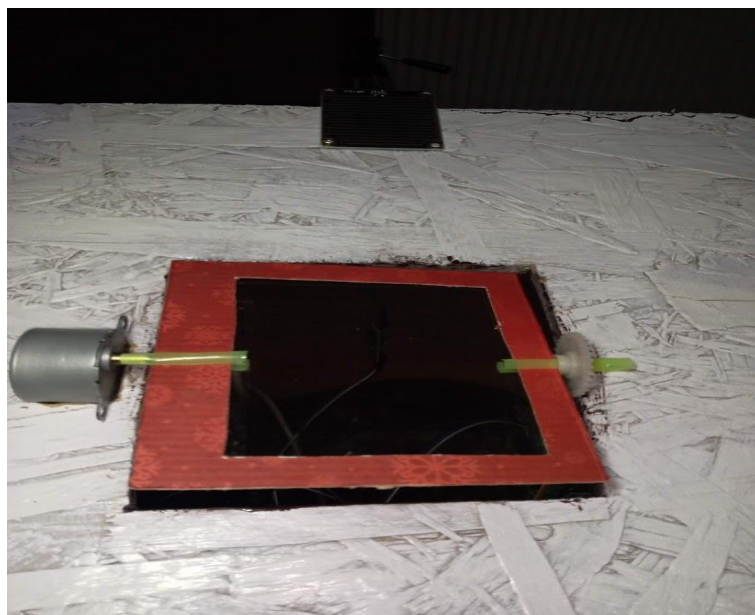




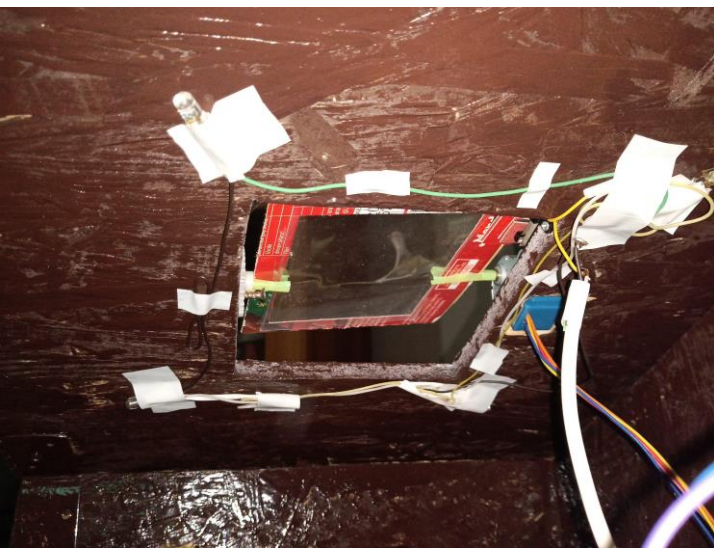




La geamul cu jaluzeaua e amplasat un senzor de lumina



La incidearea geamurilor e pus un intrerupator care aprinde 4 leduri penrtu iluminat





# Bibliografie

<https://github.com/>

[https://www.youtube.com/watch?v= feooH7e29s &list=PLzDyZ2lkYhgCOEfXmVRmjOHXOmfyE8LVN&index=2&ab\\_channel=Index.hu](https://www.youtube.com/watch?v= feooH7e29s &list=PLzDyZ2lkYhgCOEfXmVRmjOHXOmfyE8LVN&index=2&ab_channel=Index.hu)

<https://ardushop.ro/ro/>