

# *Proiect Sincretic*

## *Ușa mobilă*



Realizat de : Dragomir Alexandru

### ***Concept:***

Se dorește realizarea unei uși mobile care să permită intrarea într-o încăpăre și monitorizarea stării ușii de pe PC/ aplicație mobilă (iOS/Android).

### ***Mod de funcționare:***

- Usa se va deschide cand se detecteaza prezenta in fata acesteia;
- Un led va semnaliza prezenta in incapere ( aprins – incaperea este ocupata, stins – incaperea este libera );
- Usa nu va permite intrarea in incapere daca aceasta este ocupata;
- Pentru iesire este necesara apasarea unui buton;
- Starea senzorilor, a usii si a prezentei din incapere va fi supervizata de la distanta.

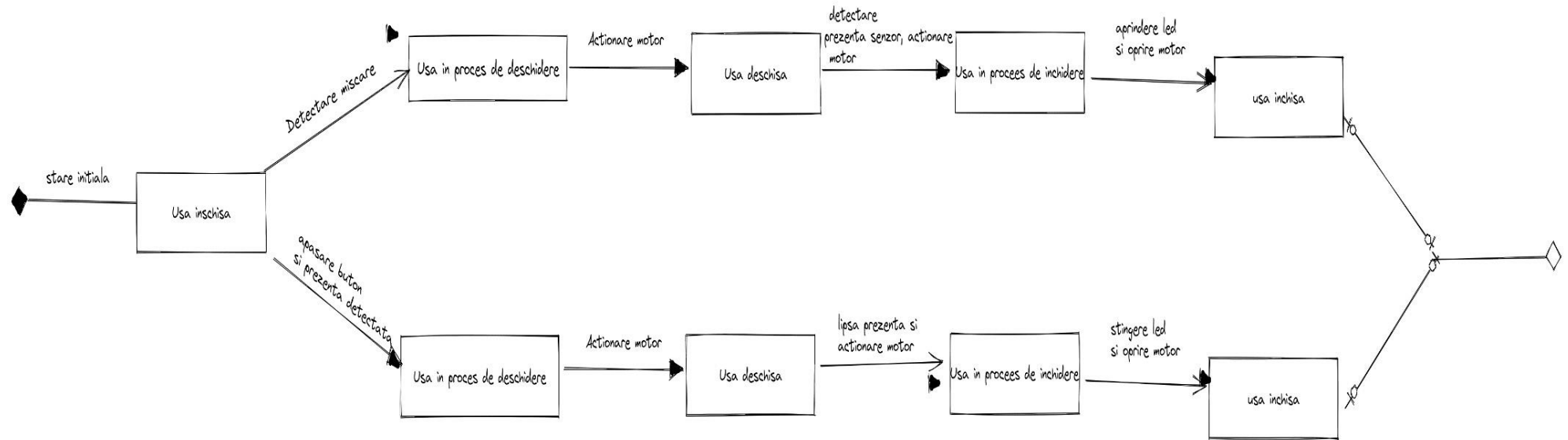
Deschiderea/inchiderea usii va fi realizata cu ajutorul unui servomotor SG90, modul in care aceasta se deschide/inchide find clasic, catre interior.

### *Listă componente:*

- Placa dezvoltare Arduino Uno R3;
- Motor Servo SG90;
- Senzor ultrasonic;
- Led;
- Buton;
- Senzor ultrasonic HC-SR04;
- Modul PIR – senzor prezenta, miscare;



# Diagramă de stări



## Tabel de stări

	P1	P2
U1	Nu se executa actiuni	Usa se deschide
U2	Usa se deschide	Nu exista actiuni

### ***Legendă stări:***

U1 = ușa închisă, senzor ultrasonic activat;

U2 = ușa închisă, buton apăsat;

P1 = prezența interioară detectată;

P2 = prezență nedetectată;



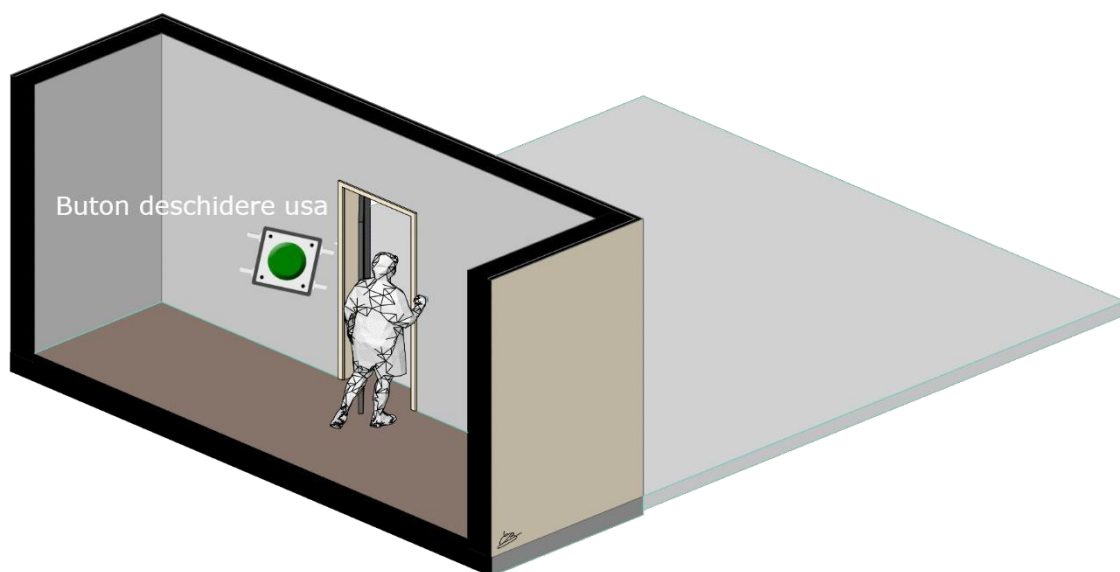
Model 3D cu planul proiectului:

- In acest model se poate vedea amplasarea componentelor pentru o intelegere mai buna a functionarii automatului.

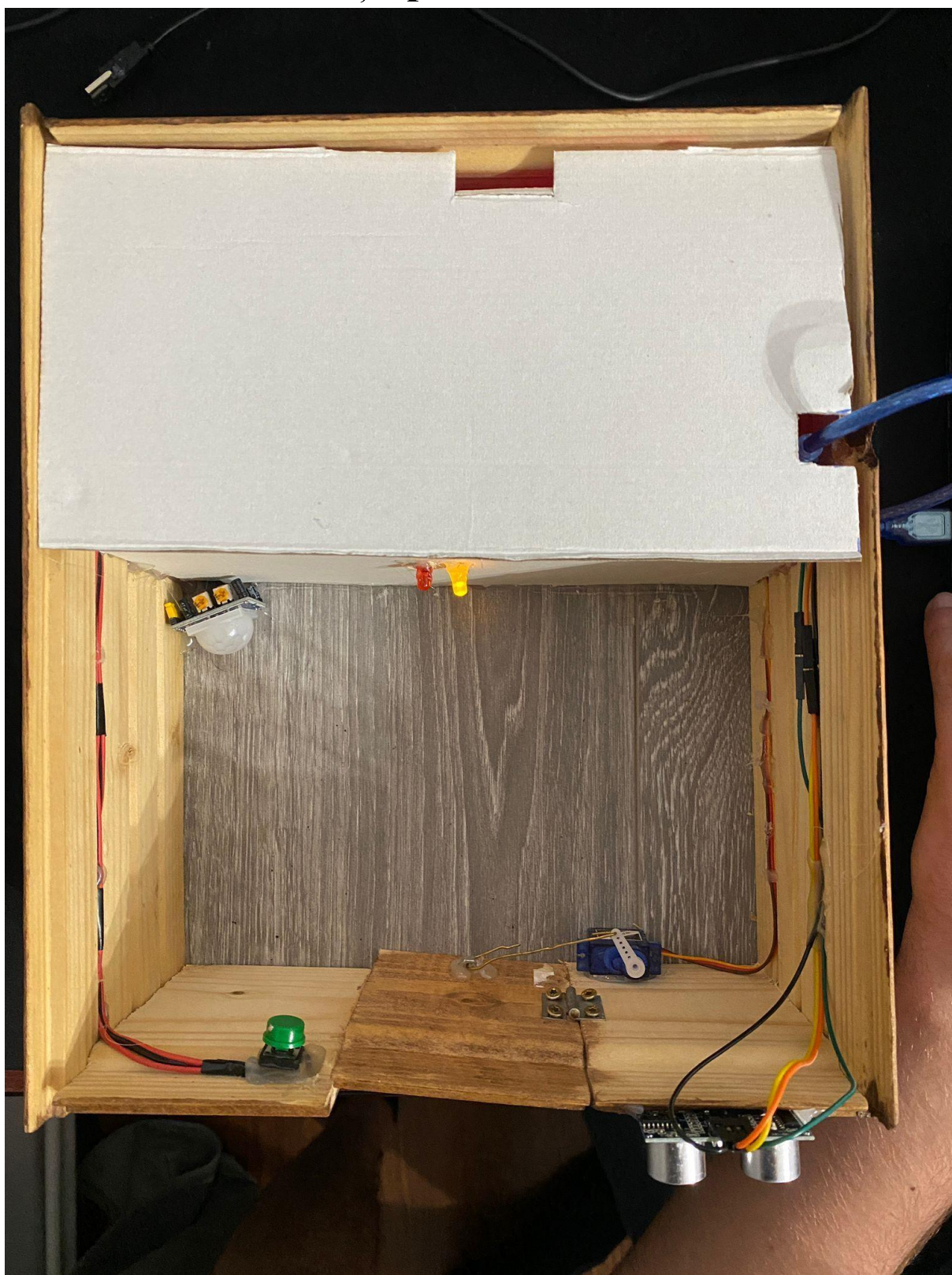
*Vedere exterioara:*



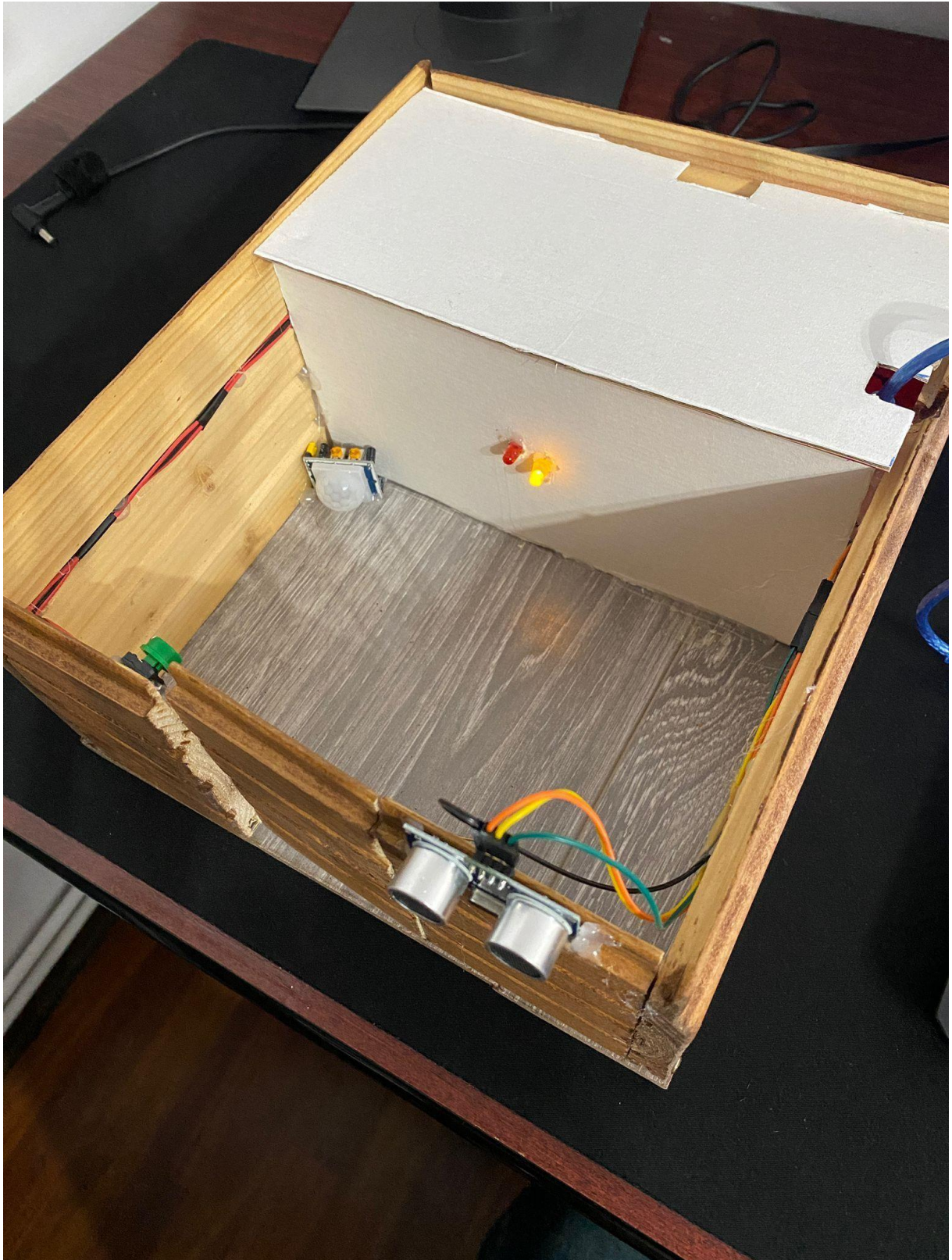
*Vedere interioara:*



## Uşa-produs final









# Node-red

<https://nodered.org/>

```
Microsoft Windows [Version 10.0.19045.2728]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Madalina>npm install node-red-dashboard

added 54 packages in 3s

C:\Users\Madalina>node-red
21 Mar 20:22:41 - [info]

Welcome to Node-RED
=====

21 Mar 20:22:41 - [info] Node-RED version: v3.0.2
21 Mar 20:22:41 - [info] Node.js version: v18.15.0
21 Mar 20:22:41 - [info] Windows_NT 10.0.19045 x64 LE
21 Mar 20:22:42 - [info] Loading palette nodes
21 Mar 20:22:43 - [info] Dashboard version 3.4.0 started at /ui
21 Mar 20:22:43 - [info] Settings file : C:\Users\Madalina\.node-red\settings.js
21 Mar 20:22:43 - [info] Context store : 'default' [module=memory]
21 Mar 20:22:43 - [info] User directory : \Users\Madalina\.node-red
21 Mar 20:22:43 - [warn] Projects disabled : editorTheme.projects.enabled=false
21 Mar 20:22:43 - [info] Flows file : \Users\Madalina\.node-red\flows.json
21 Mar 20:22:43 - [info] Creating new flow file
21 Mar 20:22:43 - [warn]

-----
Your flow credentials file is encrypted using a system-generated key.

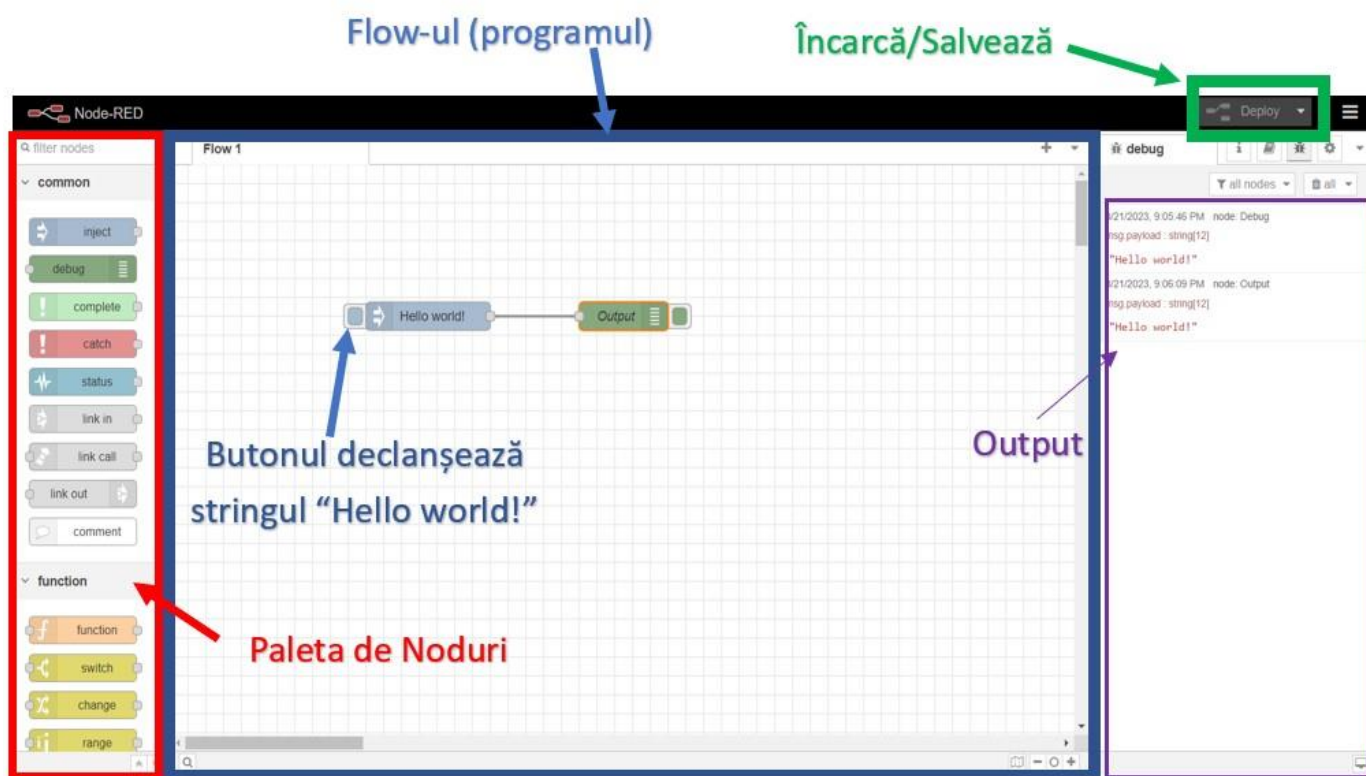
If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
-----

21 Mar 20:22:43 - [warn] Encrypted credentials not found
21 Mar 20:22:43 - [info] Server now running at http://127.0.0.1:1880/
21 Mar 20:22:43 - [info] Starting flows
21 Mar 20:22:43 - [info] Started flows
_
```

Link: <http://localhost:1880/>

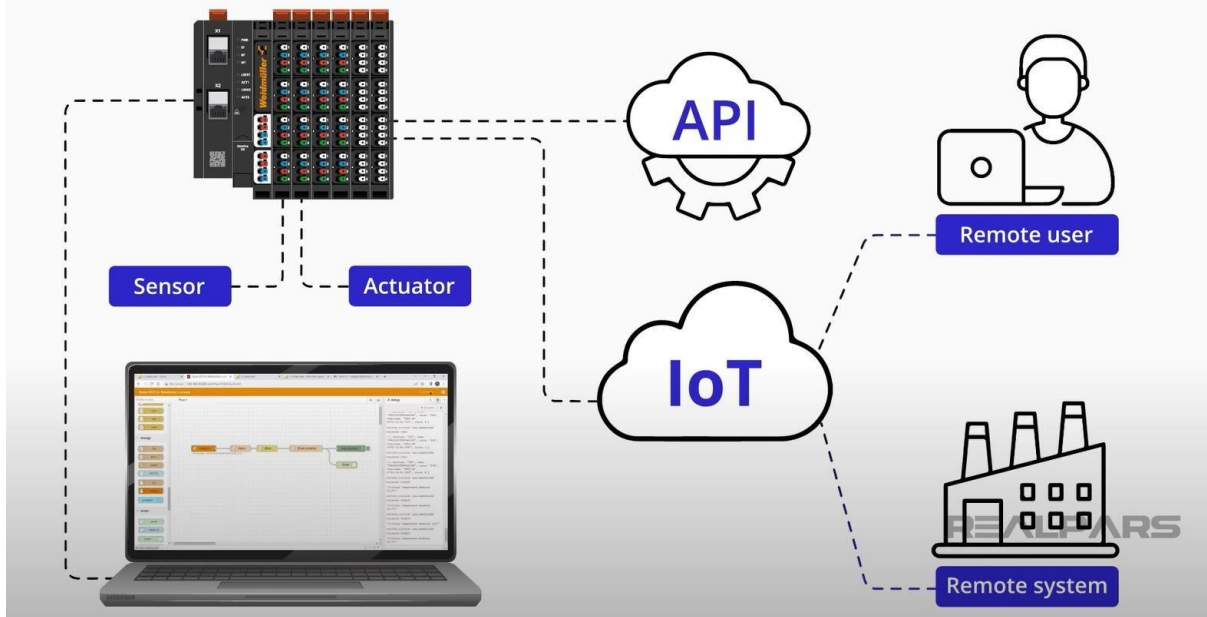
## Interfața Node-RED



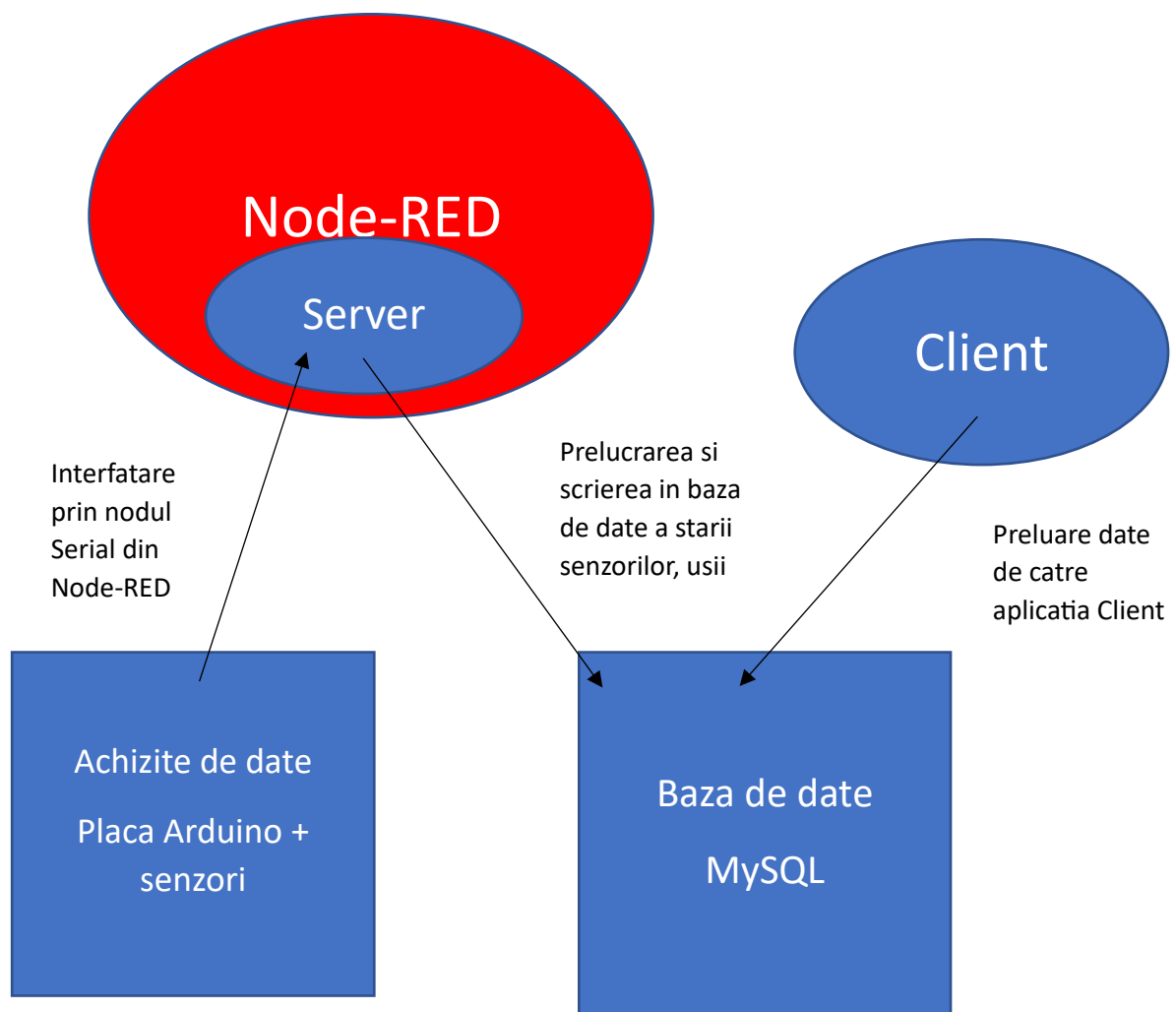
## Ce este Node-RED?

- Node-RED este un instrument de programare pentru conectarea dispozitivelor hardware, API-urilor și serviciilor online în moduri noi și interesante. Printr-un editor bazat pe browser este posibilă conectarea obiectelor (Flows) folosind o gamă largă de obiecte disponibile.

## |What is Node-RED?

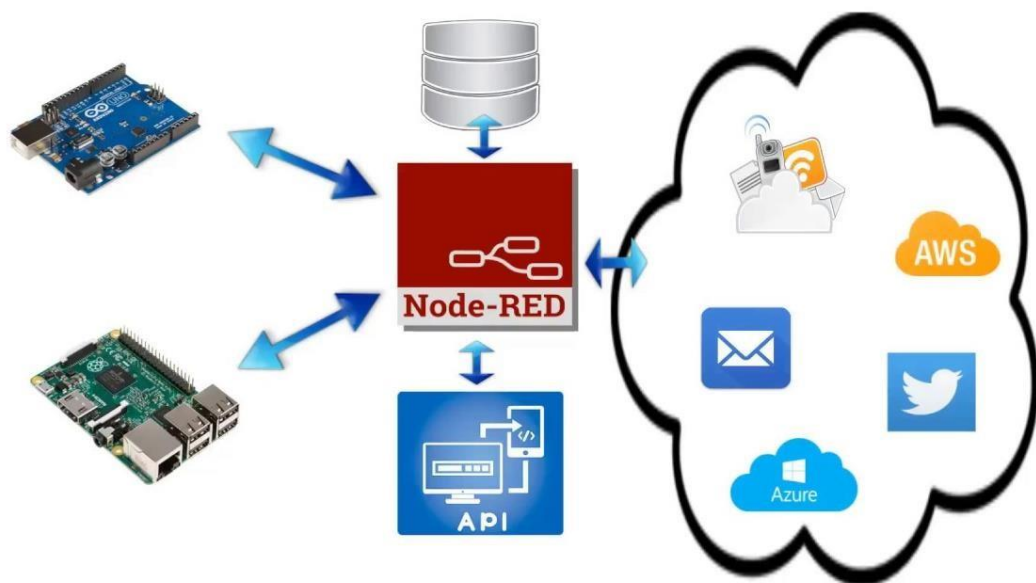
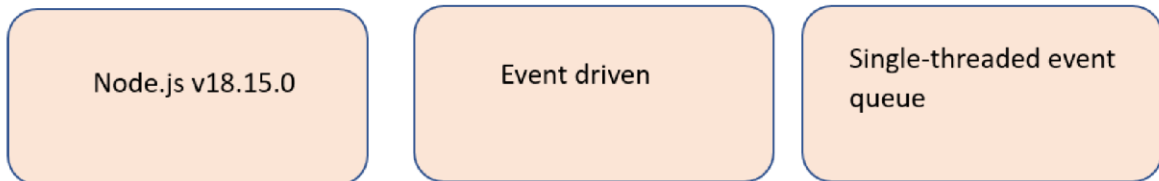


# Arhitectura proiectului folosind Node-RED

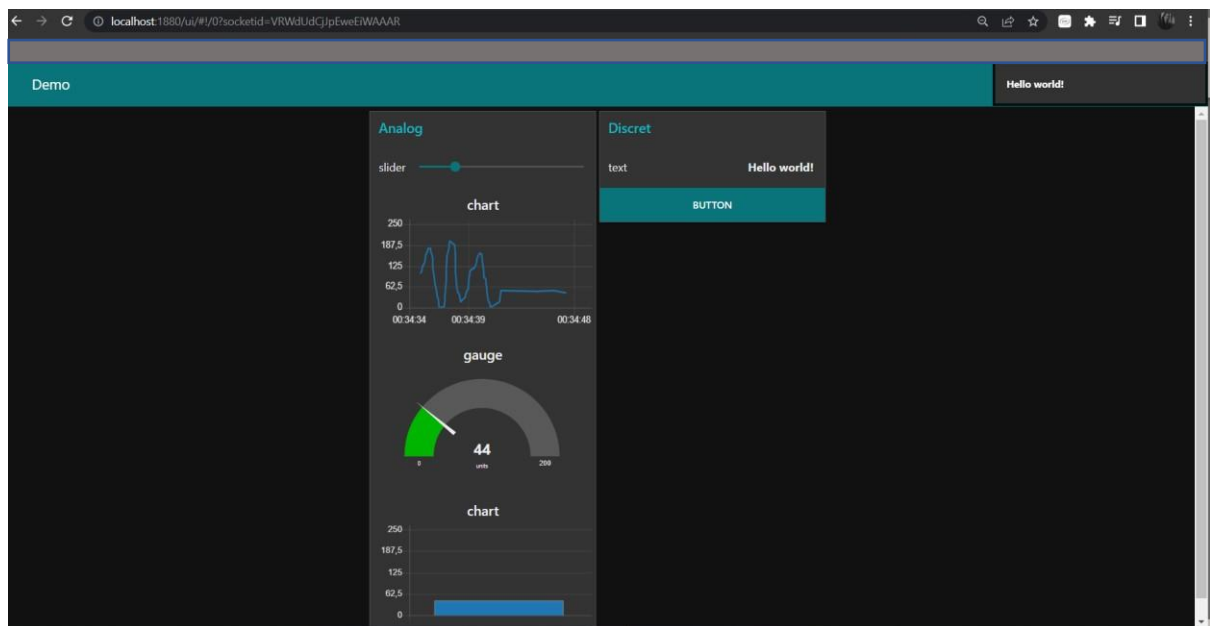
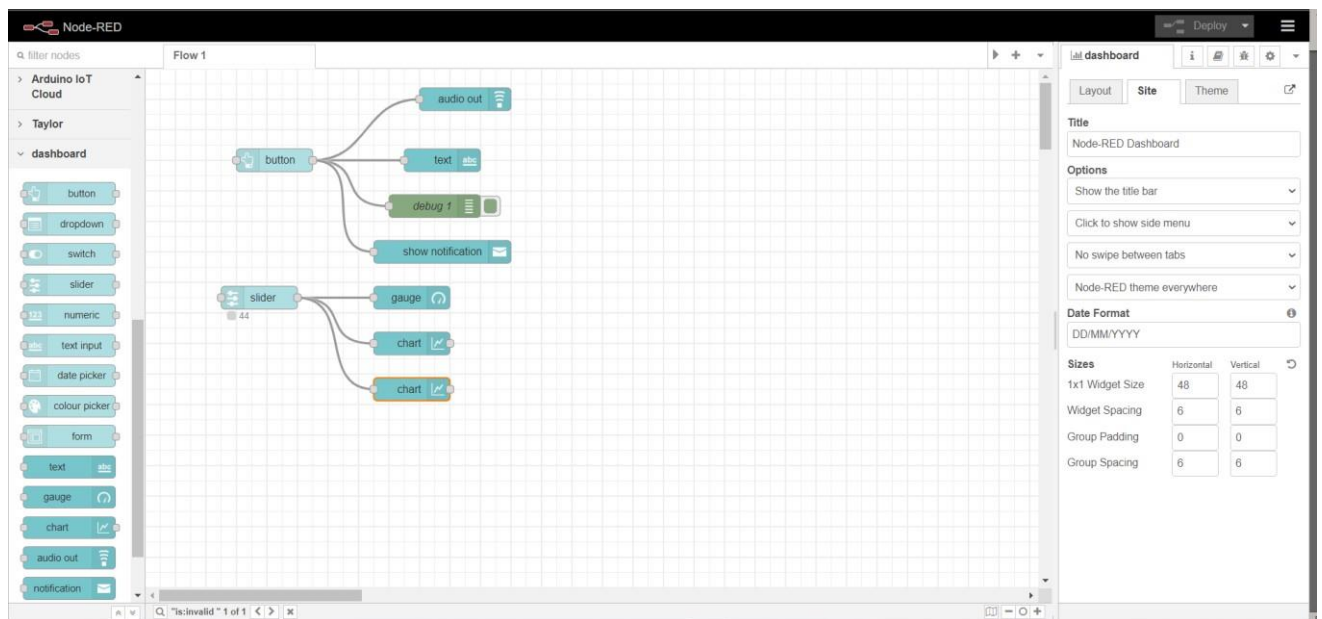




# Arhitectură Node-red



Exemplu de dashboard care se poate face  
utilizând Node-RED



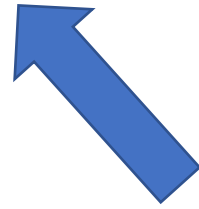
# ETAPELE PROIECTULUI

- Proiectul este realizat in mediul integrat de dezvoltare ARDUINO IDE.
- Codul încărcat în Arduino transmite pe portul serial informațiile primite de senzori în instrumentul de programare NODE-RED, aceste informații primite sunt mai apoi transmise într-o bază de date, creată utilizând XAMP Control Panel.
- Apoi datele primite sunt transmise într-o pagina web

# Schema proiectării

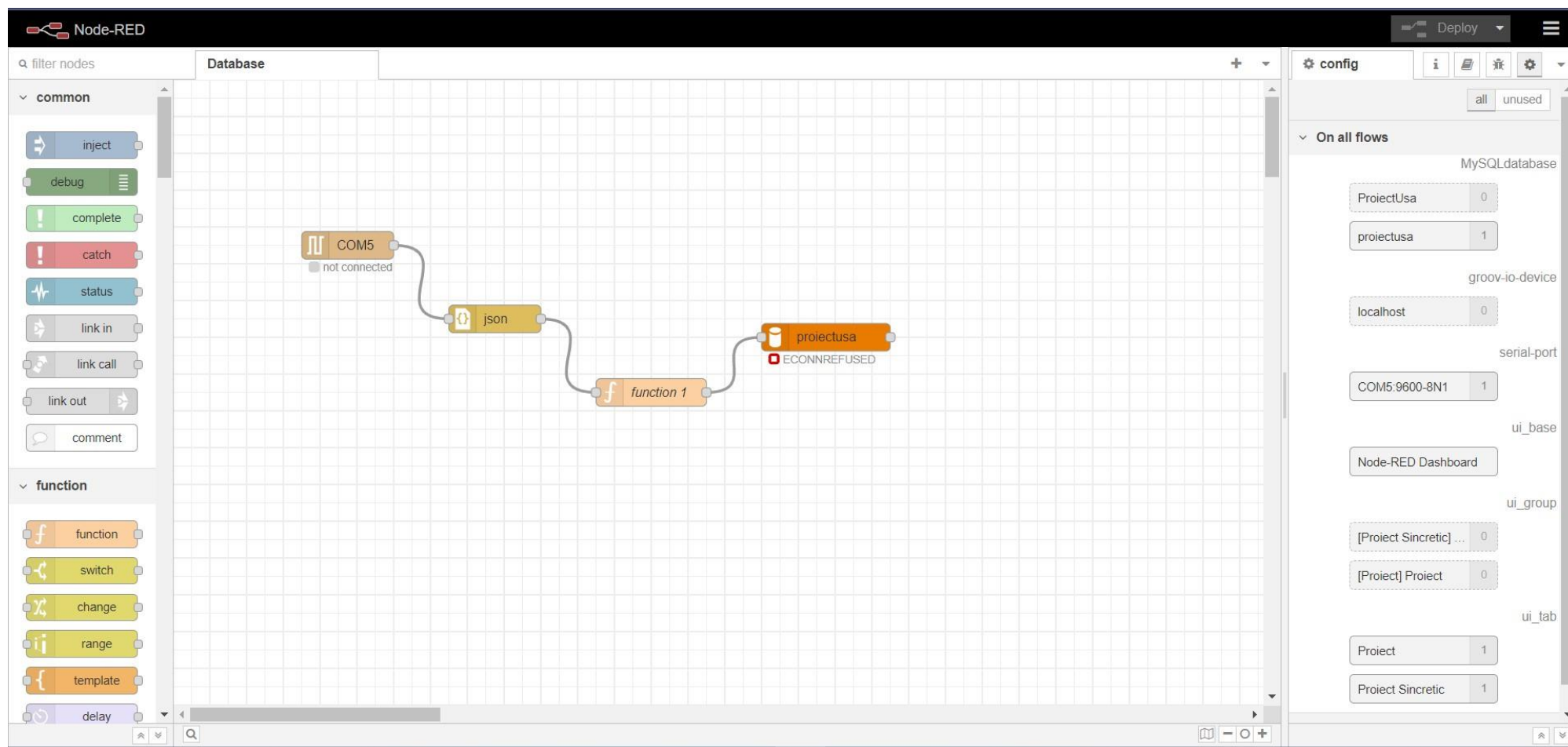






XAMPP

# NODE-RED



## Interfața XAMP

XAMPP Control Panel v3.3.0 [ Compiled: Apr 6th 2021 ]

XAMPP Control Panel v3.3.0

Modules

Service	Module	PID(s)	Port(s)	Actions			
<input type="checkbox"/>	Apache	13856 3488	80, 443	Stop	Admin	Config	Logs
<input type="checkbox"/>	MySQL	3508	3308	Stop	Admin	Config	Logs
<input type="checkbox"/>	FileZilla			Start	Admin	Config	Logs
<input type="checkbox"/>	Mercury			Start	Admin	Config	Logs
<input type="checkbox"/>	Tomcat			Start	Admin	Config	Logs

Config

Netstat

Shell

Explorer

Services

Help

Quit

12:52:01 [mysql]

12:52:01 [mysql]

12:52:01 [mysql]

12:52:01 [mysql]

12:52:01 [mysql]

12:52:01 [mysql]

12:52:01 [mysql]

Problem detected!

Port 3306 in use by "Unable to open process"!

MySQL WILL NOT start without the configured ports free!

You need to uninstall/disable/reconfigure the blocking application

or reconfigure MySQL and the Control Panel to listen on a different port

Attempting to start MySQL app...

Status change detected: running

19 | Page

Recent Favorites

+

information\_schema

+

phpmyadmin

-

test

+

New

+

sensordata

⚠

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are

✓

Showing rows 0 - 23 (24 total, Query took 0.0009 seconds.)

SELECT \* FROM `sensordata`

☐

Profiling

[ Edit inline ]

[ Edit ]

[ Explain SQL ]

[ Create PHP code ]

[ Refresh ]

☐

Show all

|

Number of rows:

25

▼

Filter rows:

Search this table

Extra options

Distance	numarlesiri	numarIntrari
102	0	1
102	0	1
102	1	1
103	1	1
114	1	2
114	1	2
114	2	2
4	2	3
4	2	3
4	3	3
77	3	4
77	3	4
77	4	4
0	4	5
0	4	5
0	5	5
0	5	6
0	5	6

Cancel

## Interfața WEB



## Door Manager

10:54:24 PM.

Tue May 30 2023

Number of  
entries:

**3**

Number of  
exits:

**2**



Distance sensor data:

**125 cm**

## Door Manager

10:54:59 PM.

Tue May 30 2023

### Door info:

Currently the room is busy. The color red simbolizes that.

N  
e  
3

Number of  
exits:

**2**



Distance sensor data:

**125 cm**

# Door Manager

**10:55:43 PM.**

Tue May 30 2023

## Door info:

The room is free, you can go in whenever you want. The green color of the card simbolizes that.

N  
e  
3

Number of  
exits:

**3**

Distance sensor data:

**125 cm**