IOT PROJECT "SMART HOME & GARAGE SYSTEM"

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OUR PROJECT IS ABOUT A SMART HOME WITH A SMART GARAGE

FIRST WE WILL TALK ABOUT THE SMART GARAGE: WE USED IN IT A "SERVO MOTOR" TO REPRESENT A GATE WHICH OPENS WHENEVER A CAR COMES NEAR TO IT WITH A SPECIFIC DISTANCE



SMART HOME DESCRIPTION:

Our smart home consists of a "Door" which opens by entering a password through the keypad

First you press on "*" which allows the keypad to receive the password

Then you press on "#" to send this password so our code checks if this password is right or wrong if the password is correct it prints on the screen "Access granted" and opens the door and the green LED lights up

And if it is wrong it prints on the screen "Access denied" and the red LED lights up

We have a which keypad has 3 LEDs:

-The yellow one when it lights up means that the keypad is ready to receive the password (which is 4 numbers)

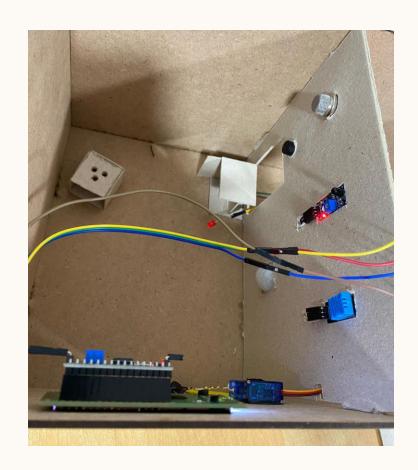
-The green one lights up when the password is entered correctly

-The red one lights up when wrong password is entered



WE HAVE IN OUR SMART HOME 4 SENSORS:

- Motion: it sees if there is any movement in our home or not
- -Temperature: it reads the temperature and the humidity at this moment
- -Flame: it reads if there is flame or not
- -Gas: it is the only sensor which reads number (Analog) and see if there is gas or not
- All these sensors print their readings on the screen which is beside the door and this screen is programmed that it reads all the readings except if you press on "*" to enter the password on the keypad so at this time it concentrates on the door only to see if the password is correct or not and once the user finishes writing the password it goes back printing the sensors' readings



OVERVIEW OF DATA TRANSMISSION TO THE CLOUD

All the sensors' readings sent to the cloud then the flutter receives it from the cloud and the sensors' readings shows on the application and also, it's showed if the home's door, garage's door and the tv are opened or not so you can control them through our application

We also used a buzzer which works when there is a flame or motion

SMART TV

We also have a sofa consists of a sensor which makes the TV(which is a LED in our project) turns on whenever a person sits on the sofa.

We used a LED in our project to reffer as the TV.



CHALLENGES WE FACED:

From the challenges that we faced in our project that we handled the door, keypad in one code and all work together smoothly in a correct way.

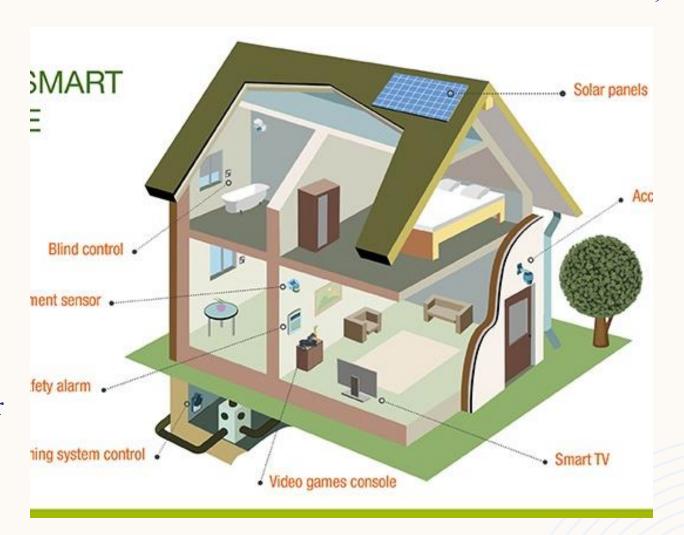
And also in making the screen concentrate only with the door while entering the password and not receiving any reading from the sensors.

Another challenge also was the authentication part which is the flutter with the firebase and how to make it sign up and sign in.

SMART HOME APPLICATION

Our Smart Home Application is an android app which is accessible for everyone and it is super easy to use ,so here is how it works in order to control:

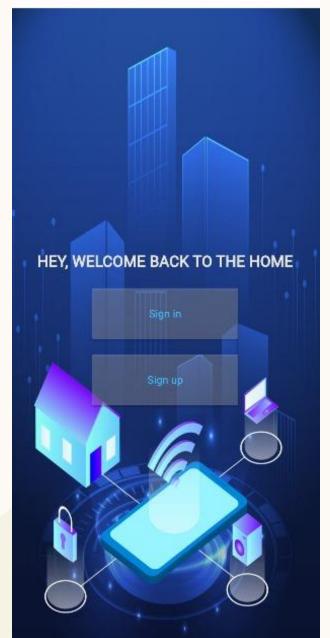
-Doors-Television-Garage Door



FIRST PAGE

First when you open our application the user chooses either to sign in or sign up

Smart Home App



SIGN UP PAGE

The user signs up for a new account if he doesn't have an existing one.

In case of signing up the user enters his Gmail and a strong password, if the user enters a week password, the application will alert him that he needs a stronger password in order to continue with the following steps

In order to sign in you have to verify your account and that happens through a verification link sent via the Gmail used for signing up.



SIGN IN PAGE

In case of the user, having an existing account he signs in, and to sign in you enter your username and password then it will show the following page.

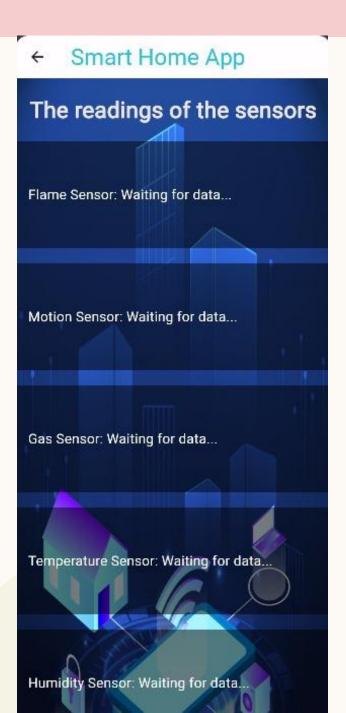
← Smart Home App



READINGS PAGE

Once you sign in it shows the readings of the sensors which are: -Flame Sensor

- -Motion Sensor
- -Gas Sensor
- -Temperature Sensor
- -Humidity Sensor

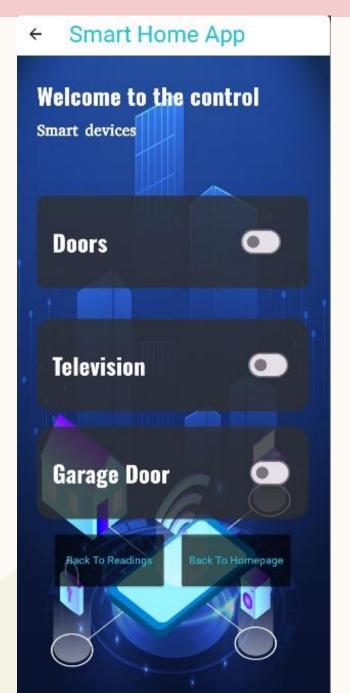


CONTROL ROOM

Through this page you can control the

- -Door
- -Television
- -Garage Door

in opening and closing them



THANK YOU

