1. Description

This project consists of an Android application that allows opening a garage door using a server connected to the internet which is part of the project itself.

Using the IDE Android Studio it has been developed an app that authenticates the users using the tools offered by Firebase. It makes HTTPS requests to the server using the Volley library and shows the users if the door has been opened successfully or if it has occurred some kind of problem.

The HTTPS server, coded on JavaScript accepts POST requests in which it receives a parameter that should correspond to a unique identifier generated by Firebase on one of the authorized users. The id is used for retrieving the associated email and checking if the user is authorized. If the user has permission the door will open and a register will be added to the database where it registered the user, the day and hour, and if the user had the required permission. In case that the user wasn`t authorized, a register is also inserted to the database and if the user was not registered it will register without permission.

I have always wanted to carry out a big project on my own, even before I started this education cycle, but I have always encountered the same problem: I am not driven by the idea of spending my time developing a project that is not going to be utilized. Nevertheless, I entrust being able to see the project working in a real use case

It has been a while since I have been attracted to technology and domotics, to the point of guiding my life towards it since I was quite young. I started by getting toys as Mecano for my birthday and Christmas, so I started interacting with technology and I gradually scaled up until dismantling any tech object I found just to see how they worked inside. Finally I self-taught Arduino and Raspberry to someday create a domotics server for my room, so, what better opportunity to getting started than with this project?

I want this project to be published so that anyone who wants can access the source code and freely modify it, and I also want to include documentation or a manual that tells them how to implement it.

The home automation sector is excessively expensive, costing a smart switch or WiFi bulb more than 25€, making it impossible to adapt a current house to a 100% smart system in an affordable way. This project is the beginning of a much larger personal project with the intention of making automation of existing appliances and devices accessible to everyone. By taking the developed server and part of the Android app and creating small devices controlled by ESP8266 chips, an intelligent network could be created through WiFi.

There are similar projects on GitHub. The Domoticz project stands out, which offers a multiplatform server that communicates IoT devices from different companies and offers a common interface for all of them.

GitHub page of Domoticz project: https://github.com/domoticz/domoticz