Tecnologías de la Información

Subject:
IoT Applications

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Group:
5A BIS

Team Project Proposal: Light Saver

Date:
July, 14 of 2021

Content

Title

Light Saver

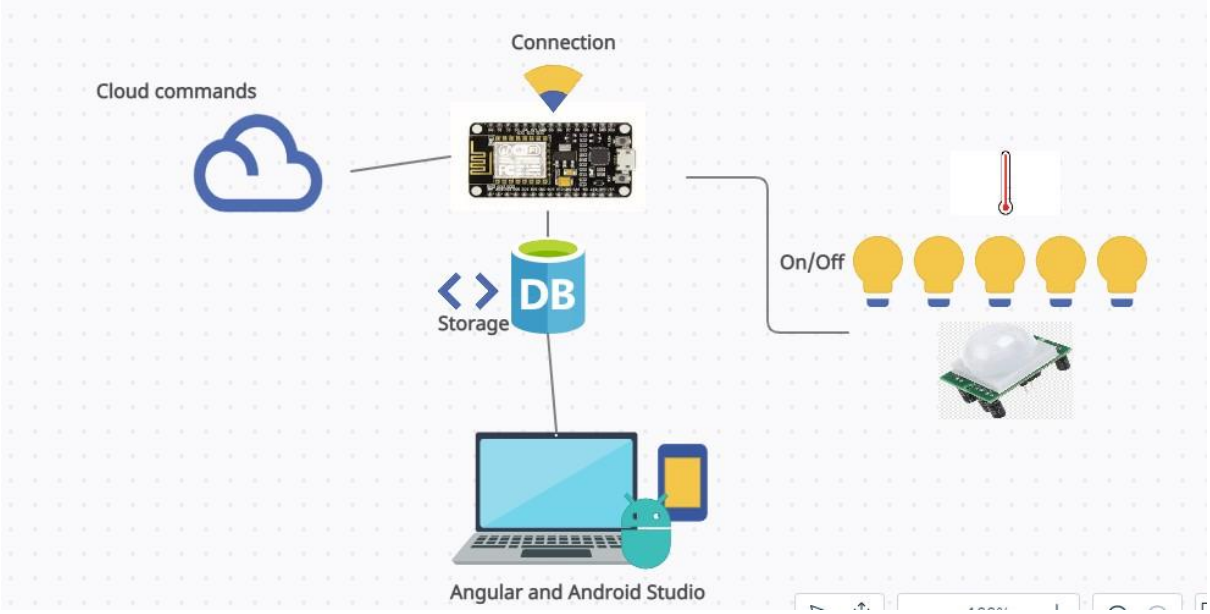
Objective

The principal objective is savings in electricity billing. Without a doubt, this is one of its best advantages, since the sensors will only activate the lighting at the moment the sensor detects movement. In this way, it is avoided to keep lights on uselessly that only produces electricity consumption and an increase in energy bills.

Another objective of the use of these sensors is that they work as a landscape and are visually pleasing to the human eye by changing between the intensity of the light as well as its general illumination.

The sensors can be used to demarcate a dangerous or unreliable area. If there is any area where it is better for outsiders to stay at a distance because they are environments where accidents or damage can occur.

This is an app where it is based on a motion sensor where a light can be turned on in case any movement is detected near said sensor and also an alarm is sent that motion was detected. One of the configurations that can be made of the app would be that we can regulate how long you want the light to stay on since it detects movement, this will depend a lot on your use case, and you can try different configurations. As well as the scope of the motion sensor can be adjusted. Since if we put a range of 2.5 meters the light will only turn on when we are very close to the sensor, and conversely, if we put a range of 4 meters the light will turn on whenever it detects movement at that distance. Also, the intensity with the illumination of the light will be changing when turning on.



Roles

Student	Role
Leal Cruz Nayeli	Tester, programmer, designer
Pineda Garcia Marlon Genaro	Administrator, programmer, analyst

List of materials

Hardware	Software
PIR sensor (motion)	Python
LM35 (temperature)	Java
LED	MQTT Broker
NodeMCU	
Photoresistor (visible light)	

Repository link:
https://github.com/PinedaAndLeal/Light-Saver.git

Layer of the World Forum IoT Reference Model:

1. **DEVICES**: Hardware required to be used in the project.

PIR sensor (motion)
LM35 (temperature)
LED
NodeMCU
Photoresistor (visible light)

2. **CONNECTIVITY**: Using Python code connecting to an MQTT broker. With Python programming code and the use of applications like MQTTBox to test the messages and data recollection and finally incorporate this connection to a database.
3. **EDGE COMPUTING**: Python usage of backend.
   Python will be the principal language which the program is going to be developed; also using the JSON messages to send the data and stored it.
4. **STORAGE**: Data insertion in a MySQL database.
   With MySQL the JSON data will be stored there for future usage for the abstraction.
5. **ABSTRACTION**: Use of an API that will present the data.
   With the data from our own API this information will be presented in the final device.
6. **APPLICATION**: Graph the data using Angular and Android Studio.
   The data will be presented in Angular code and the mobile version will be done in Android Studio having two ways of observing the incoming data.
7. **COLLABORATION**: