

IoT Home Office Automation with Door Security System Using Camera Visualization.

About This Project:

This project proposes the design of a home or office automation with door security system using camera visualization with the help of NodeMCU microcontroller. The main objective of the project is to come up with a fully functioning user-friendly, automatic, online and secure automation system for residential or office purposes that is to be used on a daily basis in almost any location we can think of. This is NodeMCU based project puts a safety barrier between a person with ill intentions and us and in the process it also reduces energy waste as well. The proposed system being controlled by the NodeMCU has made the project somewhat IoT enabled as it is fully operated through the Internet meaning that our system can be controlled from almost anywhere in the world. In simple words, how the system operates is that we take power from the main lines and feed it to an SMPS to output a regulated DC voltage that is to be used to run the NodeMCU. This NodeMCU is connected to an online server and the owner's phone is also connected to that server, this is how the owner being online can command the NodeMCU to do certain predefined things. The owner commands the NodeMCU by using an android app which is installed on the owner's phone and through which the owner is connected to the common server and communicates with the NodeMCU. Whenever a person rings the bell at the front door, the owner is instantly notified via that android app and then the owner to know the person's identity takes a photo of him using the ESP-32 CAM which is connected with the doorbell, this is how the owner gets to know about the individual at the front door. The android app is also enabled with features that lets the owner of the house to also control certain loads of the house as well by just clicking on some buttons and those clicks send certain signals to the NodeMCU to fulfill certain commands like switching on or off the lights or fans etc. In brief, this is how the system works. After completing the project we have put it to through several tests and although we did face some initial difficulties while making the project but at the end, the results we came up with from the test were quite satisfactory.

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Block Diagram:

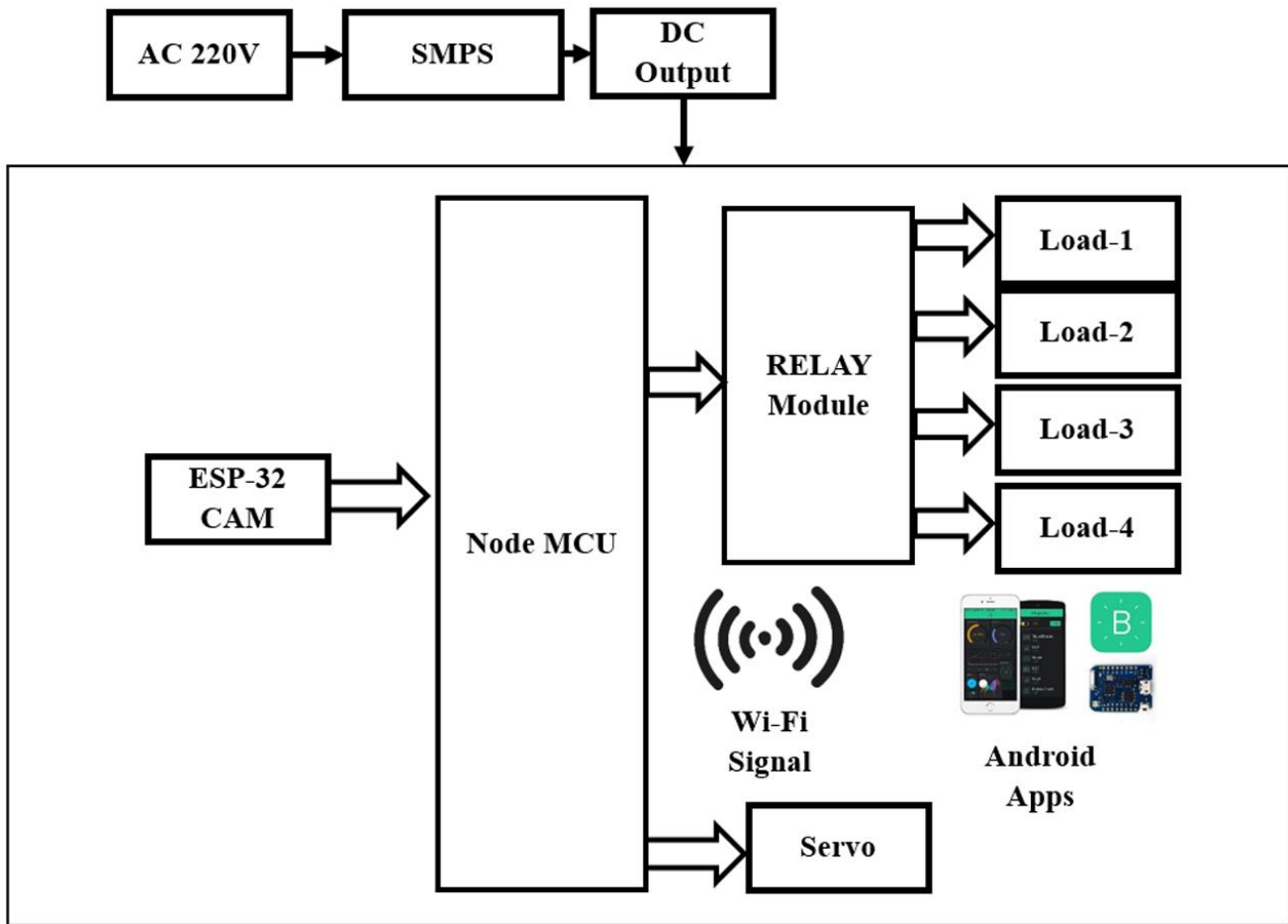


Figure: Block Diagram of IoT Home Office Automation with Door Security System Using Camera Visualization.

Required Instrument:

- SMPS
- ESP-32 CAM
- Servo Motor
- NodeMCU
- Relay
- PCB Board.
- Jumper Wire.

Advantages:

There are many advantages of our project because of its accuracy. Some of the advantages are pointed out below:

- This project is easy to use
- Cost effective
- No foul play takes place
- User-friendly
- Automatic and requires less human interaction
- Good way to reduce energy wastage
- Can be operated virtually from anywhere in the world

Applications:

The application areas for this project in this modern and practical world are huge and some of these are given below:

- It can be used in any educational institutions
- It can be used in any industry or corporate offices
- It can be used in Hospitals
- It can be used to identify authentic or fake person
- It can be used to minimize energy wastage
- It can be used in residential areas

N.B: *Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.*

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