

AUTOMATED HOME USING IOT

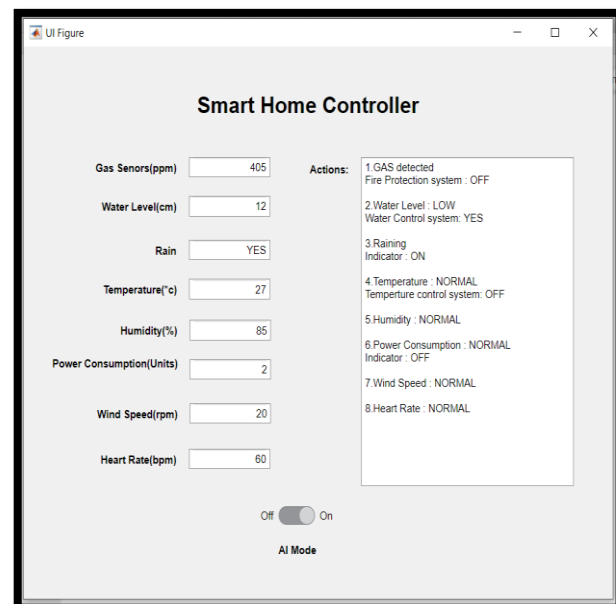


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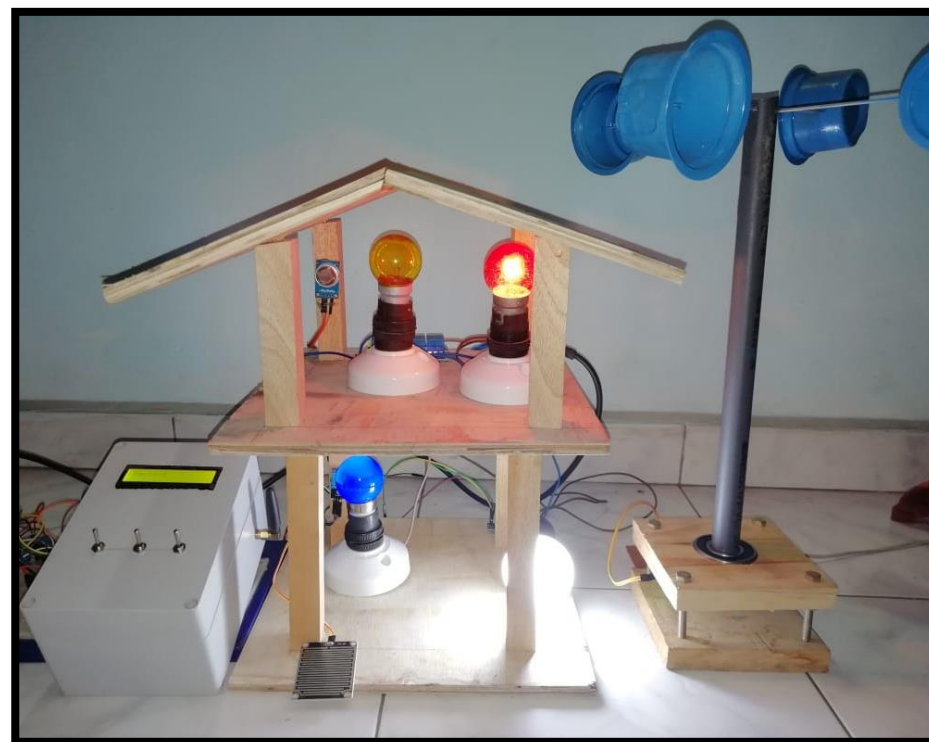
MENG ELECTRONIC ENGINEERING

• Problem statement

In Modern society, it is difficult to control home devices physically due to busy schedule of people. In this project, difficulties of gathering data and analyzing data and issues in protection of home are to be considered. Moreover, there are no products in the market which fulfil those problems and most of them haven't used WIFI and GSM technologies in a same product. because of that user wouldn't be able to obtain proper data about consumption of their requirements such as electricity consumption, healthcare parameters and weather details. therefore, those problems have been solved in this project.



GUI For AI Mode

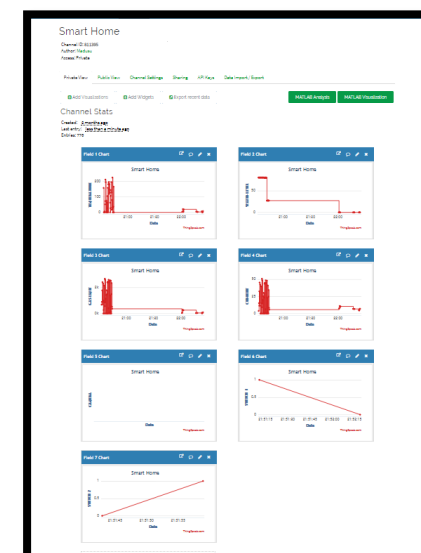


• Approach to problems

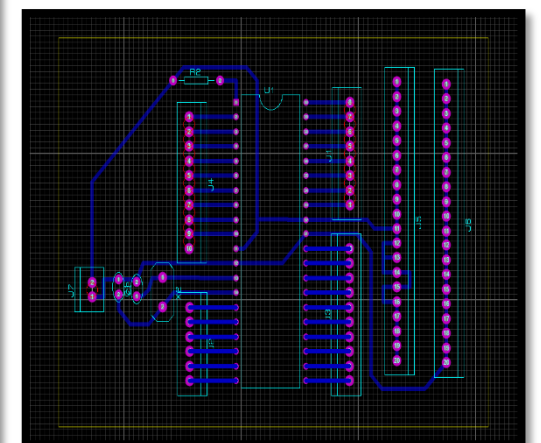
smart home concept has been developed using IOT technology and neural networks. Security system, health care measures and other useful parameters such as temperature, humidity values have been obtained to a controller and IOT platform to predict and analyze data properly. Eventually, smart home controller is to be introduced as a product to sell. In addition to that smart home consists of face recognition system using SOM neural network, rain detection system, wind speed detection system, devices control app using WIFI and app that gives predictions and directions for the user to help in making decisions.

• Results

Serial communication between pic microcontroller and nodemcu was achieved to use more devices. Nodemcu and matlab were connected via serial communication to collect data. Neural network was trained to recognize the face and to create smart home software which is used to obtain predication. Completed home controller with PCB.



IOT Channel



PCB Design for smart home

• Conclusion

Smart home is a widely used concept in modern days. In this project, automated home concept has been developed using IOT technology. Temperature measuring sensors, AC Current measuring sensors were studied to build this concept and also, IOT platform and data transmission techniques, gas sensing method were studied and researched in this project to create a smart home. SOM neural network was created using MATLAB to detect. This concept has been used to develop the system in Meng project using PIC microcontroller, NodeMCU board, "Thingspeak" IOT platform and Neural networks have been used to complete that project.