Automatic Home with The Nodemcu Esp8266 and The Blynk Apps

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Abstract: *With advancement of Automation technology, life is getting simpler and easier in all aspects. In today's world Automatic systems are being preferred over manual system. With the rapid increase in the number of users of internet over the past decade has made Internet a part and parcel of life, and IoT is the latest and emerging internet technology. Internet of things is a growing network of everyday object-from industrial machine to consumer goods that can share information and complete tasks while you are busy with other activities. Wireless Home Automation system (HAS) using IoT is a system that uses computers or mobile devices to control basic home functions and features automatically through internet from anywhere around the world, an automated home is sometimes called a smart home. It is meant to save the electric power and human energy. The home automation system differs from other system by allowing the user to operate the system from anywhere around the world through internet connection. In this paper we present a Home Automation system (HAS) using Blynk Community that employs the integration of cloud networking, wireless communication, to provide the user with remote control of various lights, fans, and appliances within their home and storing the data in the cloud. The system will automatically change on the basis of sensors data. This system is designed to be low cost and expandable allowing a variety of devices to be controlled.*
Keywords: Automation system, IOT, NodeMCU, Blynk app.

1. INTRODUCTION

IOT or internet of things is an upcoming technology that allows us to control hardware devices through the internet. Here we propose to use IOT in order to control home appliances, thus automating modern homes through the 0internet. This system uses 4- loads to demonstrate as house Appliances Controlling. Our user-friendly interface allows a user to easily control the home appliances through the internet Worldwide. For this system we use a Node MCU (Node Microcontroller Unit). This microcontroller is interfaced with a Relay modem to get user commands over the internet. Relays are used to switch loads. The entire system is powered by a 5V Adaptor/Charger (Micro type). After receiving user commands over the internet, Node MCU processes these instructions to operate these loads accordingly and display the system status on a Smart Phone Display. Thus, this system allows for efficient home automation over the internet. In this we have used the Blynk Community Application for controlling the Home Appliance all over the world. The Method used for controlling are Swiping the figures on Smartphone or Voice Control with Google assistant and after that we have used the latest technique that is IFTTT Platform & Web-Hooks For triggering our circuits. It will trigger the circuit as it gets input command from the Google assistant.

2. PROPOSED METHOD

In this the mobile phone is given as input to Nodemcu esp8266.it is used for on and off the appliances. DHT11 is used as input to nodemcu esp8266 it is used in Living room to check the temperature and humidity of room.MQ2 Sensor is given as input to the nodemcu esp8266.it is used in kitchen.it is used to detect gases like methane, Butane, Smoke, LPG.PIR Sensor is given as input to the nodemcu esp8266.It is used at Front of the main door it used for security purpose. Ultrasonic sensor is given as input to the nodemcu esp8266.It is used in tank for water level detection.2-

channel relay module is output of nodemcu esp8266.It is used for ON and OFF the bulb and pump is connected to 2-channel relay module to control the applications relay module is used. Piezo buzzer is an output connected to nodemcu esp8266. It is connected to MQ2 sensor gives a sound when the gas will leak. LCD display with I2C interfacing is used for displaying all applications.
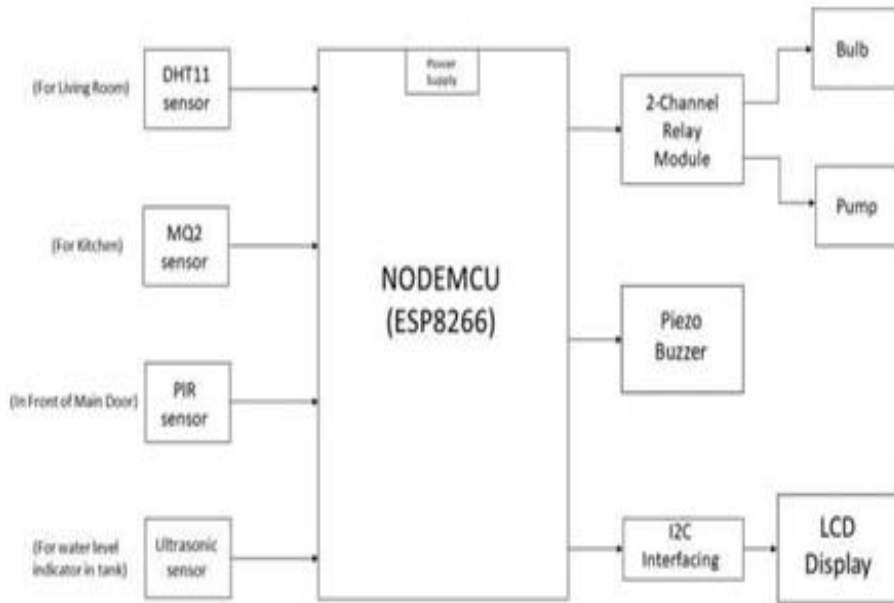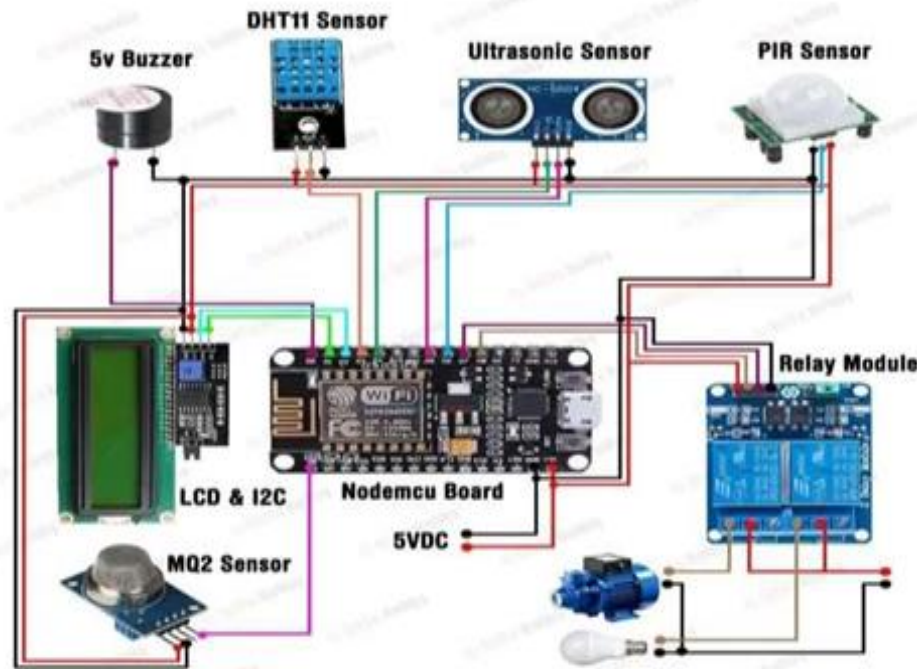

FIGURE 1. Block Diagram of proposed method

FIGURE 2. Circuit Diagram of Automatic Home

Make Connection as Per Circuit Diagram, Make Connection on Node MCU And Then Connect Node MCU To the Wi-Fi using hotspot/Router. Then Connect the Node MCU pins Output to The Relay Driver Circuit. Then Start Programming the Node MCU Module. Programme The Node MCU Using Arduino IDE Software. Download the Blynk Library zip File, install it from add library files. Download the Node MCU boards from preferences, by inserting

the library link in it. Set The Output of Node MCU (D0 – D14) For Different Control Function. Compile the Typed Programme check whether errors are occurred or not.Upload the Programme onto Node MCU using micro-type USB Cables. Then Connect the Node MCU Module to the Internet using Router/Hotspot. Now Pair the Node MCU Module with Android Application. i.e., Blynk App.

3. RESULT

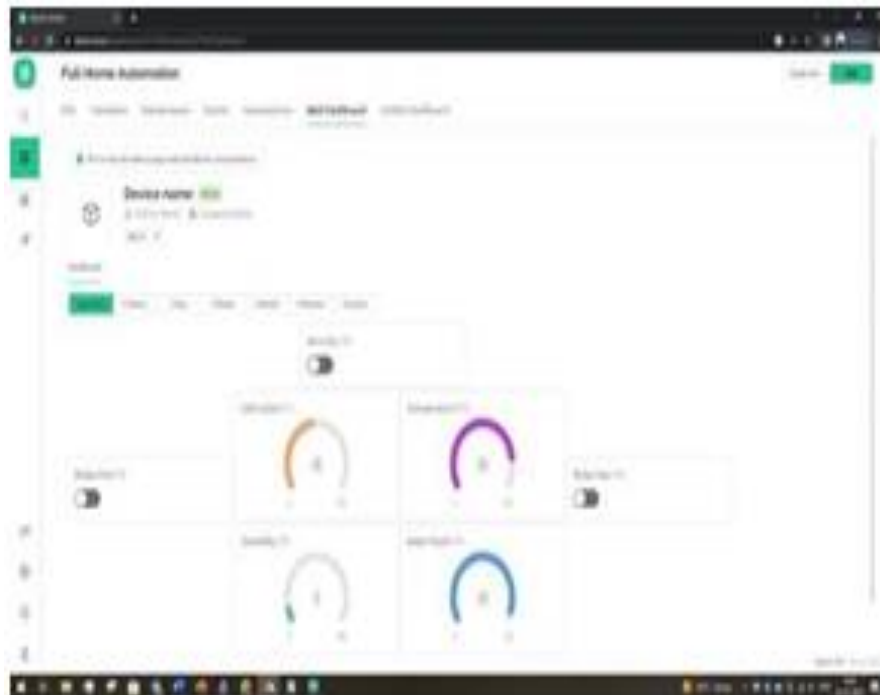
FIGURE 3. Prototype Model

FIGURE 4. Output in blynk app

The Output Reading of Gas, Temperature, Water level of the tank, humidity are displayed in the blink website with ESP client. The user can also control the relays to turn on bulbs, pumps and other home appliances with the help of on and off buttons in web.

4. CONCLUSION

While wearing down this endeavor we have grabbed a lot of finding out about various modules being used in this errand. We are glad we can Built this Project as a part in this Endeavour and set up new musings. We believe the assignment completes as needed and the data grabbed in the midst of this period will be used in our future corporate life. Additionally, we might want to include that home computerization is the fate of places of new world. Home automation is a resource which can make home environment Automated. People can control their electrical devices via. Smartphone These home automation devices and set-up controlling action through mobile. In future these products may have high potential for marketing. The main barrier towards the acceptance of home automation presently is its high cost. This paper has studied and reviewed the presently available home automation system. These systems require additional network devices like hubs for their working, which in turn increase their cost. By the use of NodeMCU and the IoT platform, these devices can be made cost-effective. Above all, it will provide great user convenience as it will be possible to control the devices from a remote location. Using a web page or an application, the system has been made platform independent. There is no need for any particular operating system so as to operate this system. The system will provide optimal results.

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