

Home Automation using Blynk

Dr. Shambulingana Gouda¹, Syeda Hafiza Begum², Muskaan M³, Madhushree⁴, Jaya Shree Bai⁵

Professor, Department of EEE¹ and BE Students, Department of EEE^{2,3,4,5}

Rao Bahadur Y Mahabaleswarappa Engineering College Bellary, Karnataka, India

Abstract: A smart automated home framework using IoT with the Blynk application was developed by Durani et al, their study included the functionality of NodeMCU ESP8266 that is connected with the house appliances such as lights, water pump, fan, etc. With the help of online coding and hosting using a web server. The entire functionality was handled by a mobile application created in the android application from which house applications were managed with the support of the internet.

Keywords: Blynk application

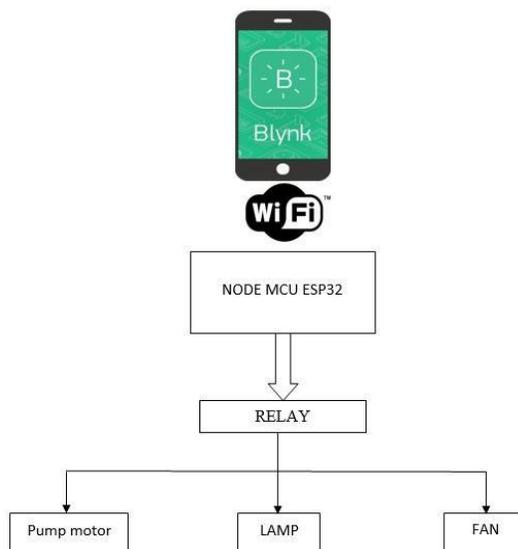
I. INTRODUCTION

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 internet. This system uses 3-loads to demonstrate as house appliances controlling. Our user-friendly interface allows a user to easily control these home appliances through the internet worldwide. For this system we use an 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 cable (Micro type). After receiving user commands over the internet, NodeMCU 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 appliances all over the world. The method used for controlling are swiping the figures on smartphone.

Home automation provides convenience in your everyday life so you can focus on what really matters. Turn your lights on and off with the touch of a button having in your hand, ask Blynk to start your vacuum when your children make messes, and unlock your front door from anywhere in the house. Make your life easier with smart home technology.

Here we just implemented automation only on home appliances like lights, fans, refrigerators and so on by giving command to the NodeMCU using relay module.

II. BLOCK DIAGRAM



III. METHODOLOGY

1. Make connection as per circuit diagram, make connection on NodeMCU
2. And then connect NodeMCU to the Wi-Fi using hotspot/Router.
3. Then connect the NodeMCU pins output to the relay driver circuit
4. Then start programming the NodeMCU module.
5. Program the NodeMCU using Arduino IDE software.
6. Download the Blynk library zip file, install it from add library files.
7. Download the NodeMCU boards from preferences, by inserting the librarylink in it.
8. Set the output of NodeMCU (D0 – D14) for different control function.
9. Compile the typed program check whether errors are occurred or not.
10. Upload the Program onto NodeMCU using micro-type USB cable.
11. Then connect the NodeMCU module to the internet using Router/Hotspot.
12. Now pair the NodeMCU module with android application i.e., Blynk App

IV. APPLICATIONS

Heating, ventilation and air conditioning (HVAC): It is possible to have remote control of all home energy monitors over the internet incorporating a simple and friendly user interface.

Lighting Control System: A "smart" network that incorporates communication between various lighting system inputs and outputs, using one or more central computing devices.

Occupancy-Aware Control System: It is possible to sense the occupancy of the home using smart meters [14] and environmental sensors like CO2 sensors,[15] which can be integrated into the building automation system to trigger automatic responses for energy efficiency and building comfort applications.

Appliance Control and Integration: With the smart grid and a smart meter, taking advantage, for instance, of high solar panel output in the middle of the day to run washing machines.

Home Robots and Security: A household security system integrated with a home automation system can provide additional services such as remote surveillance of security cameras over the Internet, or access control and central locking of all perimeter doors and windows.

Leak Detection: Smoke and CO detectors.

Home automation for the elderly and disabled.

Smart Kitchen and Connected Cooking.

Using voice control devices like Amazon Alexa or Google Home to kitchen appliances

V. CONCLUSION

While wearing down this endeavour we have grabbed a lot of finding out about various modules being used in this errand. We are glad we can Build 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