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Domotics Controlled Through Mobile Application Using IOT: A Review

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Abstract: The evolution of technology has increased the consumption of electric power locally and globally which lead to a dramatic increase in demand for electric power. The proposed technique automates the appliances through App-based automation and GSM technology. This system is used to avoid the damage of electrical appliances especially laptop and other costly devices and save electric power by operating through mobile applications which makes on and off the devices from long distances using GSM module. This automation system is a combination of both software and hardware-based technologies, so we can manage them by our smart phone or tablet whether we are at home or miles away.
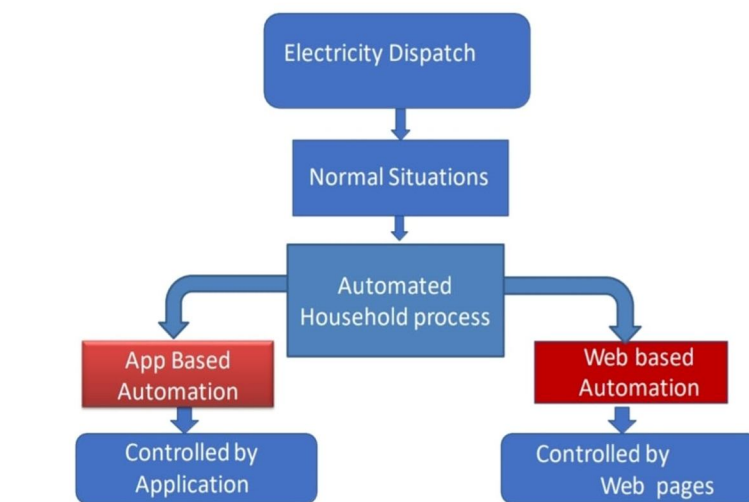Keywords: GSM, IoT, Arduino, Blynk.

I. INTRODUCTION

Blynk app is a server-based app which always connected to the server and controls the Node-MCU from that server. This application is already available in the play store. It allows us to create amazing interfaces for our projects using various widgets. is nothing but Node Microcontroller unit especially in our project we use AT89S51 Microcontroller. Node-MCU is an open-source platform based on ESP8266 which can connects objects and let data transfer using the Wi-Fi protocol. The 4-channel relay module is a convenient board which can be used to control high voltage, high current load such as lamps and Ac load. This is 5V four channel relay interface board, and each channel needs a 15 to 20mA current. It is nothing but global system for mobile communication module is used for long distance communication purpose. GSM module is a hardware device that uses Mobile technology to provide a data link to the remote network. It requires a SIM card just like a mobile phone to activate communication. In this module, app is connected with a Blynk server via the internet. App server will communicate to the local router, which will act as a bridge between hardware setup and the app. App interface consists of buttons and pins connected to microcontroller giving users options to turn on and off the widgets. When microcontroller is connected with the internet and power supply, the app will automatically connect with microcontroller. When we click on the button of the app to turn on the device, microcontroller will get a command from the server and turn on/off the device

II. OBJECTIVES

A. To avoid the damage of electrical appliances like laptop, heater and costly devices.
B. Also saves the electrical power and time by operating the appliances remotely through mobile application from long distances.

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III. LITERATURE SURVEY

TABLE1

Author and Published year	Methodology	Features	Challenges
Rozita teymouzadeh, Salah Addin Mok vee hoong 2013	GSM based system and IoT	Accessing the devices by SMS	Controlling and accessing devices using GSM
Vignesh Govindraj Mithileysh Sathyanarayana Babangida Abubakar,2014	Wireless communication using cloud networking	Accessing devices through app based application	We can access through web pages
Gm moid,Rezauil karim, Hasan, Uzaman 2015	Using Wi-Fi module and IoT	Controlling appliances some meters range	Controlling the appliances from anywhere in the world
Kumar mandula, ramu parupalli, Rutal unagariya, 2015	IoT based system and Arduino	Appliances controlled By app using Bluetooth module.	Appliances controlled by app using GSM module
Anuja Shinde, Shobha Kanade, Namrata,AbhijeetGuravR ambabu, Padwardhan,2017	Automation using IR remote ,Bluetooth and GSM	The user control through SMS	We can access the industry also ,similar to home
Homera duarani, Madhuri vageria, Mital sheth, Shyam Kotech,2018	Wireless controlling and IoT	Remotely monitoring the conditions of Home.	Remotely controlling as well as monitoring the appliances in home.
Satyendra K. Viswakarma Prashant Upadyaya Babita Arun Kumar Mishra,2019	Internet of Things ,web and app based application controlled system	User using the google assistant or through a web based application	We can access the laptop and other devices also using routers from anywhere
Aaquib Raza, Absar ali,Aftab ali, Mazhar Baloch.	Arduino UNO, Programmable Automation.	Controlling the appliances from short distances only	Controlling the appliances from long distances

IV. COMPONENTS

A. Node-MCU ESP8266:

It is nothing but Node Microcontroller unit especially in our project we use AT89S51 Microcontroller. Node-MCU is an open-source platform based on ESP8266 which can connects objects and let data transfer using the WI-FI protocol.
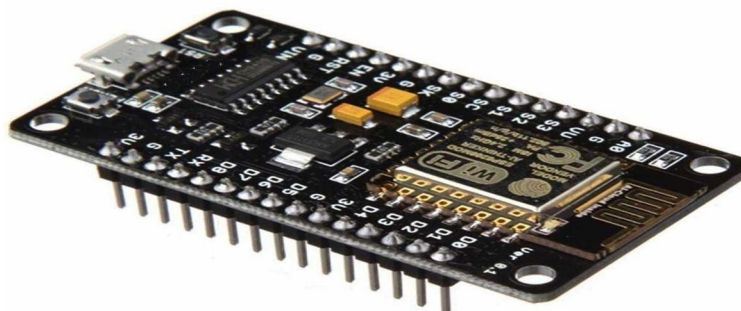

Fig.1 Node-MCU ESP8266

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B. SIM800L GSM Module:

It is nothing but global system for mobile communication module is used for long distance communication purpose. GSM Module is a hardware device that uses mobile technology to provide a data link to the remote network. It requires a SIM card just like a Mobile phone to activate communication.

Fig. 2 SIM800L GSM Module

1) In this module, app is connected with a Blynk server via the internet.
2) App server will communicate to the local router, which will act as a bridge between hardware setup and the app.
3) App interface consists of buttons and pins connected to microcontroller giving users options to turn on and off the widget.
4) When microcontroller is connected with the internet and power supply, the app will automatically connect with microcontroller.
5) When we click on the button of the app to turn on the device, microcontroller will get a command from server and turn on/off the device.

C. Relay Module (4 channel)

The 4-channel relay module is a convenient board which can be used to control high voltage, high current load such as lamps and Ac load. This is 5v four channel relay interface board, and each channel needs a 15 to 20 mA current.
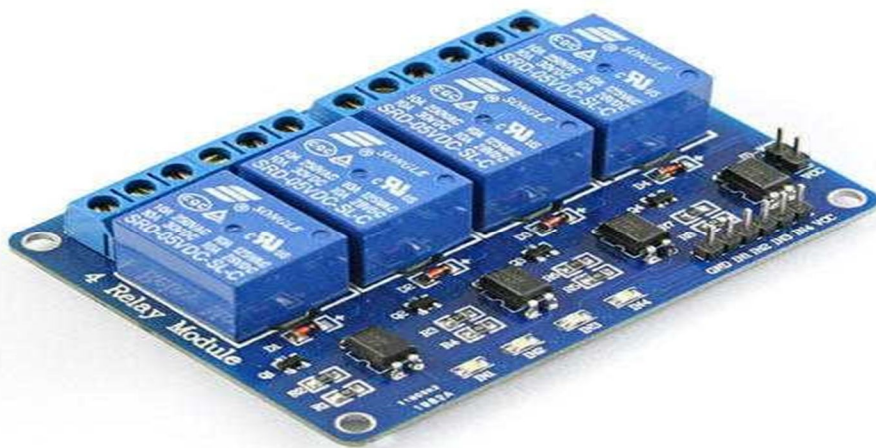

Fig. 1 Relay Module (4 channel)

V.   ADVANTAGES

A. Maximizing the home security.
B. Remote control of home functions.
C. Improved appliances functionality.
D. Increased energy efficiency.
E. Time and money saving.
F. Flexibility and more convenient to use.
G.   Prevents accidental fires and other disasters.

VI.   APPLICATIONS

A. Lighting control
B. HVAC Regulation
C. Lawn Irrigation systems
D. Smart appliances
E. Security systems
F. Kitchen appliances

VII.   CONCLUSION

This research investigates the smart home automation using an intelligent electricity dispatch model. The proposed methodology is beneficial for electricity saving as it overcomes electricity consumption. The main target to achieve the appliances will be automatically switched off/on according to given conditions using Blynk app. Finally, we conclude that we can control the electrical appliances through an Blynk app remotely at any place.

VIII.   ACKNOWLEDGEMENT

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