WI-FI BASED SMART HOME AUTOMATION

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Abstract **-** *Automation of the devices, appliances at home and office is having wide scope of research with the advancement of technology in communication era. Misuse of power energy can be curtailed by automating the devices and appliances. Mobile communication is playing a vital role in the domain of automation. The process of controlling or operating various equipment, machinery, industrial processes, and other applications using various control systems and also with less or no human intervention is termed as automation.*

Index Terms- Arduino nano,ESP8266 WI-FI module etc.

1. INTRODUCTION

Generally ,when we go out of the house we switch off the light or the electrical equipment's to avoid accidents such as short circuit, firing etc. but sometimes we forget to switched them off, we have to come back home to do so. Home automation is the process of controlling home appliances automatically using various control system techniques. The electrical and electronic appliances in the home such as fan, lights, outdoor lights, fire alarm TV, etc. can be controlled using various control techniques.

Home automation can quickly bring the future into our homes by incorporating security climate and house hold gadgets and transforms our regular home futuristic smart home. There are various techniques to control home appliances such as IOT based home automation over the cloud, home automation under Wi-Fi through android apps from any smartphone, Arduino based home automation, home automation by android application, remote control, home automation using digital control, RF based home automation system and touch screen based home automation.

Smart home is one in which all electrical equipment around the home technologically smart or intelligent or automated with highly advanced automatic system for security in other system. Smart home is useful for everyone and can also be used in everyday life at home. Smart home is consisting of three parts- network, controlling device and home automation.

2. METHODOLOGY

In this project, result the system becomes stable and efficiency of the system as well as of the apparatus increases.

1. Start Mode Activity
In this mode, all the rooms of the home are displayed. The user can select the Necessary room from the option to control the appliances connected to specified room.

2 Switch Mode Activities
This mode provides the user with on/off buttons to control the required home Appliances. Total functioning of project in terms of circuit diagram is shown in the Fig 1.

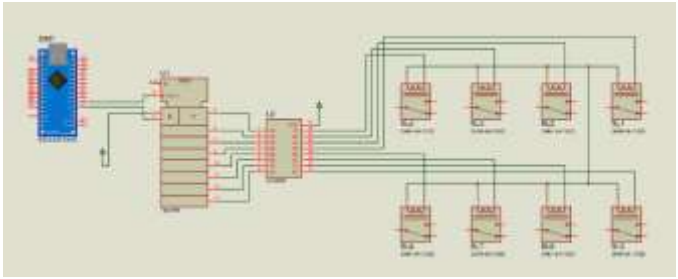


Fig 1 – Circuit Diagram

3. HARDWARE

Hardware is major part of this system though the software programming is also important. The main component is Arduino, Wi-Fi module. The ESP8266 Wi-Fi Module is a self-contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network.

Firstly we have to provide the 220v supply to the model project, after that step down transformer is used to step down the power from 220V to 5V to the circuit.

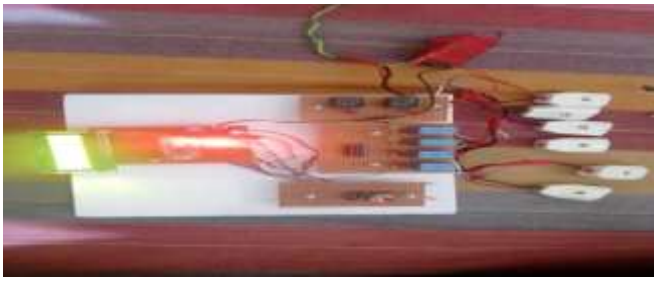
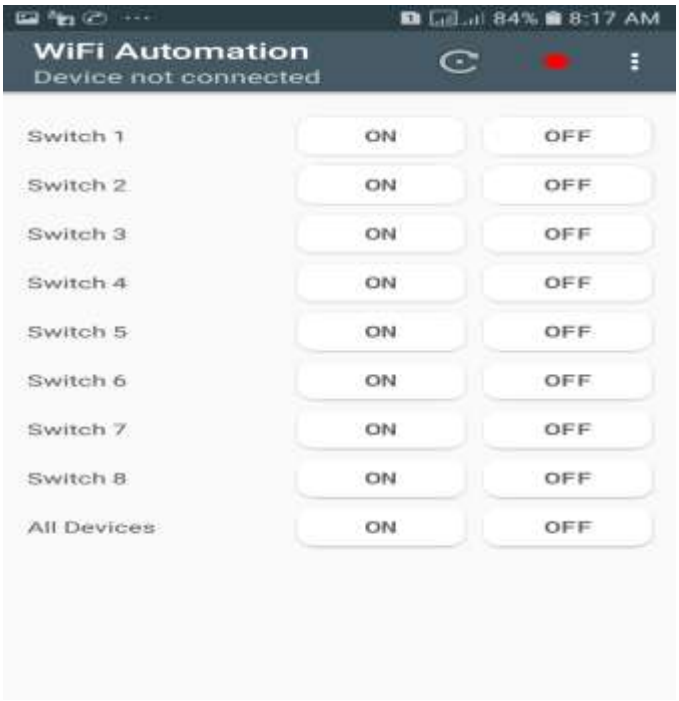


Fig 2 : Testing of Hardware

4. RESULT

In this project we have achieved results automatic lights on/off using WI-FI module etc as shown in Fig 2. The parameters are shown on the display to monitor, to control load on and off condition.



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