

# Touch Screen Based Home Appliance Control System Using Wireless Communication

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**Abstract-** With the advancement of technology and more dependency of people on smart phone and increasing demands of easy and quick way of solving Daily life task, it has become very important to have a technology which can control over the domestic and industrial applications. In the present world people spend more time in workplace rather than them Home and as we all know that, in day-to-day life in some cases which require human intervention to complete the simple works for example switching ON and OFF the lights and fans. Would it be a wonder if these tasks can be automated? Yes, these can be automated to reduce human intervention and power wastage. And not only at work place the user can get to know the house conditions at any place in the world as long as they have internet connection

**Index Terms-**IoT technology, ESP32

## I. INTRODUCTION

The project aims at designing an advanced home automation system using normal web server and Wi-Fi technology. The devices can be switched ON/OFF and sensors can be read using a Personal Computer (PC) through Wi-Fi. Automation is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. These had greater importance than any other technologies due to its user-friendly nature. These can be used as a replacement of the existing switches in home which produces sparks and also results in fire accidents in few situations. Considering the advantages of Wi-Fi an advanced automation system was developed to control the appliances in the house. Wi-Fi (Short for Wireless

Fidelity) is a wireless technology that uses radio frequency to transmit data through the air. Wi-Fi has initial speeds of 1mbps to 2mbps. Wi-Fi transmits data in the frequency band of 2.5 GHz. It implements the concept of frequency division multiplexing technology. Range of Wi-Fi technology is 50-300 feet. The controlling device for the automation in the project is a ESP32. The data sent from PC over Wi-Fi will be received by Wi-Fi module connected ESP32. ESP32reads the data and decides the switching action of electrical devices connected to it through Relays. The main objective of this project is to develop a home control system using ESP32 board with Internet being remotely controlled by any Android or IOS operating system. As technology is advancing so houses are also getting smarter. Modern houses are gradually shifting from conventional switches to centralized control system, involving remote controlled switches. Presently, conventional wall switches located in different parts of the house makes it difficult for the user to go near them to operate. Even more it becomes more difficult for the elderly or physically handicapped people to do so. Remote controlled home automation system

## II. LITERATURE SURVEY

This project aims at achieving automation using the widely used mobile operating system Node MCU i.e. android operating system. The electrical and home appliances can be controlled using the android mobile phones even if you are out of your house and you forgot to switch off the appliances. Many electrical and home appliances like light, fan, refrigerators etc., can be controlled using the android operating system.

This can also be implemented at workplaces. Home automation is the residential extension of building automation. It is automation of the home, housework or household activity. Home automation may include centralized control of lighting, HVAC (heating, ventilation and air conditioning), appliances, security locks of gates and doors and other systems, to provide improved convenience, comfort, energy efficiency and security. Home automation for the elderly and disabled can provide increased quality of life for persons who might otherwise require caregivers or institutional care. IOT allows objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world

III. METHODOLOGY

Touch screen based home automation system is a system that controls the home appliances automatically such as fans, lights, Pump and all type of other appliances which are mostly used in homes world is becoming advanced more and more as well as our daily used items are also becoming smart and smart similarly home appliances are also becoming smart and smart therefore it is so much necessary that their control should be also smart means their control should be automatically

Workflow of the Proposed System

Touch screen based on home appliance control system using wireless communication is explained in the section. The flow chart of the proposed system is illustrated in fig.1

- Step 1:** Start
- Step 2:** Switch on the 5 volts power supply
- Step 3:** All devices that can be connected through the Blynk app via internet
- Step 4:** ESP32 Wi-Fi Bluetooth module That will be connected to the light, fan pump
- Step 5:** By using mobile touch screen we can turn on turn of the lights and fans, pump
- Step 6:** Lcd will be Display the outputs when light should be on Lcd will display light should be on
- Step 7:** Stop

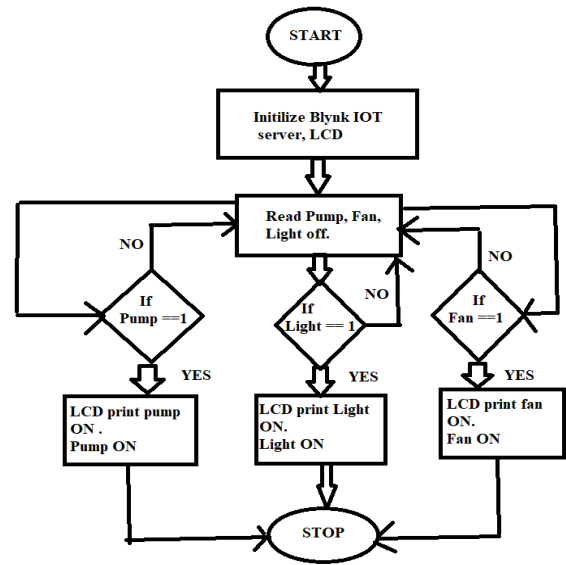


Figure 1: Flow Chart

IV. BLOCK DIAGRAM

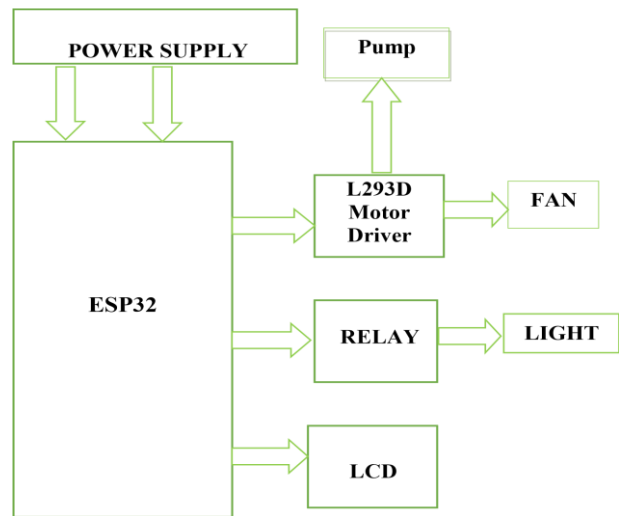


Figure 2 :Block Diagram

V.RESULT

The project “IOT BASED CONTROLLED HOME APPLIANCE SYSTEMS” has been successfully designed and tested. Integrating features of all the hardware components used have developed it. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit. Secondly, using highly advanced IC’s and with the help of growing technology the project has

been successfully implemented. Hence we concluded the project

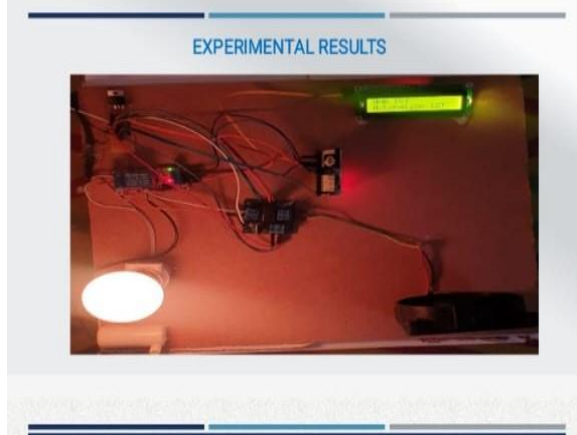


Figure 3: Output

## VI. CONCLUSION

This work can further be upgraded by using different sensors and different home appliances. Since smart phones are widely used nowadays, this user-friendly system can be used for benefitting the mass. The cost of the system is also within reach. The circuit used for controlling AC fan speed can also be implemented in AC light dimming applications. The features of automatic turn off and sending emergency notification can be very useful in geyser and air conditioner. When water is heated to a particular temperature in geyser, it can be automatically turned off or when room temperature is lowered to a specified value the air-conditioner can be turned off automatically. In both the above cases notifications can also be sent to user through his/her Blynk app. Mobile application

## VII. FUTURE SCOPE

IOT have wide range of applications and many uses in every sector. Our day to day busy life is much connected to the technology age. We can say that human race is evolving with technology as by skin day to day in this information age. We can expand our technology to the industrial sector. In advanced harmful conditions detection in such as mines, lab and vehicles also.

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