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# Android based Home Automation System via Wi-Fi

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***Abstract-***

*In this paper we describe home automation system for disabled people mostly by using Wi-Fi- ESP8266. This system helpful for disabled people to make home appliances safe and comfortable to use and handle it. In this paper we ON/OFF the A/C bulb, fan etc. Also we regulate the speed of fan. In the current years all the actualized procedures have not understood the Intelligent Home outline in every quality angle since each system has its own particular advantages and disadvantages whether we talk regarding innovation adjusted, productivity or cost. Hence for that we use a cellphone having Android OS, Arduino UNO and Wi-Fi ESP8266 module of version 01.We can manipulate this system between the area 100m.*

***Keywords:***

*Cellphone, Arduino UNO, Wi-Fi module, Android OS*

## I. INTRODUCTION

The use of one or more computers to control basic home equipment such as bulb, fan and other application for minimum human interaction is called as home automation system. The most popular home automation system in international market this goal is achieved with the help of this Home Automation System. With the help of these system means home automation system the cost and effort of installation is decreases. Also with it improves the flexibility and scalability of the system. The intention of home automation is that to make place intelligent so that security is maintained and energy is conserved. It makes the life flexible, healthy and comfortableofpeople. In existing system the most wireless communication standard between their component is used to exchange the data or signaling like Bluetooth, ZigBee, Global system for mobile(GSM). These systems have their own disadvantages. Example is that the system using GSM model has very high bandwidth [2] [3] and system with ZigBee module has very low bandwidth [4] for data communication. The other system in the market is also available like SMS based home automation system, java based home automation but for java based home automation the data internet is useful for every time if internet is not available the system has no value and SMS based home automation is very costly because each and every time we operate the device there is required cost of one SMS. These Wi-Fi based has its some benefits the range of Wi-Fi module is 150-200m. We use two hardware devices in this system to link between Android phone and home appliances these are Arduino UNO and Wi-Fi module ESP8266.

## II. RELATED WORK AND LITERATURE SURVEY

*R.A Ramlee, M.A. Othman, M.H. Leoung, M.M. Ismail, S.S.S. Ranjit*[1]In this paper Home Automation System is implemented by using wireless Bluetooth technology. The frequency of this Bluetooth module is 2500 Hz and the range is 100 m at the 3 MBPS of speed.

*DeepaliJavale, Mohammad Mohsin, ShreerangNandanwar and MayurShingate*[2] In this paper the home applinces is controlled with the help of GSM device. Also in paper [3] these paper is also implemented by using GSM module.

## III. EXISTING SYSTEM

In the existing system [1] Microcontroller called PIC18F2550 is used for implementing home automation system for serial and USB features. The humidity and temperature is detected with the help of sensor HSM 20G. The CytronBlueBee Bluetooth module is used for achieving communication with the home appliances. The Smartphone's BT connection is connected to the personal computer the window GUL is act as a server to forward any data from/to the main control and smartphone. The range of Bluetooth module is 100 m in diameter.

## IV. PROPOSED SYSTEM

In this paper we propose a system which is different from the existing system. The home automation is implemented with the help of Wi-Fi (wireless Fidelity) module having standard IEEE 802.11. The wide range of Wi-Fi module is very

 

large of not more than 200 m. The paper is different from other paper because in this paper we regulate the speed of fan. We explain the major modules which are used in this paper these are as follows:

A. Wi-Fi- To connect the Smartphone to the Arduino the Wi-Fi module is used. With the help of Wi-Fi we provide security to our system.

B. Arduino UNO: It is the ideal board to getting started with electronics devices.

C. Relay Interface System: It is used for ON/OFF the home appliances.

## V. DESIGN AND SYSTEM ARCHITECTURE

The smart home system project will be built using Arduino controller. The Smartphone is connected Wi-Fi kit. With the help of these kit we transfer the instruction to the Arduino kit. Arduino is connected to the Wi-Fi. It will also display input data from humidity and temperature sensors connected to the microcontroller which will be updated periodically on the UI.

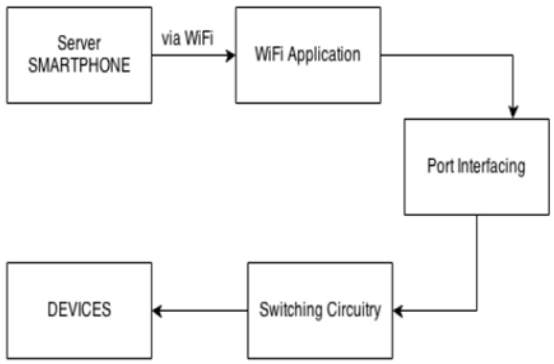


Figure Basic block diagram of System

A. Smartphone having Android OS: For this system we are using Android platform since it has a huge market and open source.

B. Android SDK: The development kit is used to program an Android studio IDE is the communication link needs more security. Wi-Fi module: The Wi-Fi protocols provide more security for secure connection.

C. Arduino: Arduino UNO is the ideal board for getting started with electronics through fun and engaging hand-on projects.

D. Switching Circuitory (Relay Interface Circuit): The Relay interface circuit is used to connect the PC with the household electronic or electrical appliances.

## VI. CONCLUSION

The goal of the paper is to design a system, which should be easy to implement, and short ranged. The project is implemented through onboard Wi-Fi, which is inbuilt in the mobile phones having an Android as its system. Implementing the actuators for door systems for more security aspects can increase the future scope of this project. In this study, the proponents develop a Wi-Fi based switch control system for home appliances using Android phone. This paper gives basic idea of how to control various home appliances and provide a security using android phones. The programming platform used for the software is the Basic4android and the code is generic and flexible in a user friendly manner.

 

## VII. REFERENCE

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