

IOT BASED HOME AUTOMATION SYSTEM

Mrs.Y.Jyothi¹, Ms.T.Alekya²

Associate Professor, Assistant Professor

Department of Electronics and Communication Engineering VSM COLLEGE OF ENGINEERING,
Ramachandrapuram

ABSTRACT

Currently, the development of information and communication technology (ICT) focuses on the Internet of Things (Iota). It improves the home environment and is used in many applications. Iota is a popular home application. Home automation devices are used in the home and are integrated and can work without human intervention. It gives a good reward to the life of the person giving the smartwork of home appliances like light, energy and refrigerator level using different sensors like KM35, IR sensors, LDR module, Node MCU ESP8266 and Arduino UNO. , instantly shuts off the gas and sends a reference number as a message to the home owner. There are many commercial building management systems available in the market. These household appliances are separated from home and away. This system is useful for physically challenged people. Finally, in this paper, we present a home automation system based on Wi-Fi, Bluetooth and Arduino UNO.

Keywords: IOT, Wi-Fi, Bluetooth, Arduino, Android Application.

INTRODUCTION

Home automation enhances human life in general. This frees up the need for work and helps to use electricity with these energy saving lines. The purpose of this paper is to control and use the engine through different concepts from all over the world using android applications. In this document, the different mechanical technologies used in buildings are identified by their speed, cost and other limitations. It shows the underutilization of the benefits of each plan. Over the years there have been many definitions for building materials. These definitions include the important parts [1] of the new material that show its ability and need to achieve the goal of the light house. There are different explanations given by many people who can relate. However, traditional practice areas can be limited in terms of management, number and customer satisfaction. Home automation also helps

the elderly or disabled. It is easy for them to create or manage all home appliances with Android application. Although this home automation system helps to reduce energy consumption in the area. There are many environmental hazards that are emerging today such as dangerous climate change, climate change and the instability of energy prices that have contributed to the development of these systems. home computer. The use of mechanical systems in various ways has led to the desire to reduce energy consumption. The home computer provides opportunities for new areas of design, management and planning. The remote operator has introduced various combinations of Bluetooth, IoT, Wi-Fi and GSM in each Home Robotization System. Home computer system is an area of innovation but not much progress due to high usage [2]. This paper presents the control of machines through an Android application that succeeds in overcoming the problems of daily home care. A typical home robot control system used with basic push buttons, computers and infrared controllers. Using these things wastes power and energy. They are the worst and require more use. The advantage of installing Android as a step is that it is easy. In addition, it can use various methods such as Bluetooth, IoT, Wi-Fi and GSM to implement the instructions given by the customer. slow reforms are made by encouraging new ones to meet the need. The purpose of this system is to reduce the use of Power.

I. METHODOLOGY

1. Bluetooth Based Home Automation-

This new thing is growing these days to make life easier. This is safer and less expensive than the home technology system based on the bluetooth system developed by R.Piyare in the field of equipment that has an Android phone and Arduino Bluetooth(BT) . This arduino BT board comes with a mobile phone that uses Bluetooth. Power transmission is used with arduino devices BT Board Another design presented is to use the bluetooth system HC-05 because it is a serial port system that is not difficult to use.

This system requires a standard (5V) supply. With just a click on the application, the home connection information is sent to the connected arduino using Bluetooth. The Arduino receives and interprets the information and takes the necessary actions. It restores the current state of the device to the Android phone. A proposed technology that gives us an idea for a low cost, strong, easy to use mechanical system.

This system is integrated with bluetooth system, arduino board, android application and sensors. The work is not difficult and helps in the maintenance and operation of household appliances. The weakness of this design is that the programs can only be controlled from the software [4]. This detailed technique below uses the HC-06 bluetooth system to communicate with the arduino board what home appliances are connected to the main arduino components through the off. The serial communication between the Bluetooth device and the Android phone is completed using the serial communication and then the communication with the main arduino components is maintained. This specific design fulfills the customer's need to create and manage tools in a simple way. It is helpful for the weak, elderly and helps to use time effectively. The paper provides answers to smart home automation using google Firebase Cloud informing (FCM) and bluetooth. It does not require any specific information about the customer. It provides a central hub to manage and operate all home appliances. With the creation of the new Bluetooth technology, there is a group organized based on advanced technologies where machines and electronic devices can transfer information between them. Now, the importance of using the latest Bluetooth home devices is smart [5].

2. Wi-Fi Based Home Automaton-

To set up the phone between the Android app and the device, use the Wi-Fi system. It's a home automation system that works with Android and Wi-Fi. In addition, this home automation system can be used to display data on a PDA using Wi-Fi technology. You can use your Wi-Fi device to set up a new location in your school so that you can set up your data. What you use in the Wi-Fi SSCS model, it's kept the same as what you use in Android now. There is progress in the field of smart home systems that can provide a lot of things that can be controlled at any time in any part of the world. How to use ESP 8266 12 This is a Wi-Fi chip for data processing,

which is the best part of ESP 8266. The main thing is that it uses USB. This device can be operated using buttons. It's great for beginners because it's easy to work with. In homes with less money, less money, there are many reasons why they can use Wi-Fi to control their devices. The application of the application can be used for mobile phones. Among the main controls should be the Wi-Fi method of using the new text messages [6]. IP Cam can be used in smart homes to protect the security of quality images on Android devices. This method allows you to use Wi-Fi devices. It explores more ways to improve the Wi-Fi-related data in the internet and in the system of the network zuwa manyan rarrabuwa uku special data sources, some tools and PDA applications. This is a powerful internet connection that can be used to speed things up [7]. It's possible to do it in a way that you don't have to file a complaint. It has a wide range compared to bluetooth. You have blocked your website, which is why you are using Android Studio at this time. A similar plan has been designed, where it helps to know the money in a home-home system that prevents the machine from being used on the phone. application form. This ensures comfort and reduces the use of electricity and reduces the use of water by using a soil sensor during the rainwater system.

3. Arduino:

Arduino is an open source software development platform. hardware and software [5] Designed for professionals. teachers, professionals, and those interested in creating skills or situations. In simple terms, Arduino is a small, flexible PC system with instructions to work with different types of data and outputs. The current version of the Arduino board, the Mega, is smaller than the average human hand. It has a simple 10-pin design with a computer. It works with 5v power, which is connected from there from the USB port or external power. It can operate between 5V 20V It has a small replaceable ATmega1280. This microcontroller has many features. It has 128KB of flash memory, 4 KB of which is used for Boot Loader, 8 KB SRAM and 4 KB EEPROM [8]. Arduino has 54 pins 10 high. To select an expression or a result pin, we use the pin() method. Digital Writing (), and digital reading capabilities. This pin is used at a maximum Current of 40m.

These microcontroller pins have some special limitations. Row 0 name: pin 0(RX). pin 1(TX), jumper 1: pin 19(RX), pin 18(TX). Terminal 2: pin 17(RX), pin 16(TX), Terminal 3: pin 15(RX). page 14 (TX). TX is used to transmit information and RX is used to receive information. Other special function pins are SPI pin, SPI: MISO pin 50, MOSI pin 51, SCK pin 52. SS pin 53. It has 16 simple data pins to provide 10 bits of target (1024 bits special features) and uses and analog Reading. () work. In this, we have the SAR ADC to convert the simple data into a valid form.

II RESULTS AND DISCUSSION



II. APPLICATIONS

1. Lighting control
2. Central air
3. Grass/Planting the executives.
4. Shrewd Home Apparatuses.
5. Further developed Homewell being and security.
6. Home air quality and water quality checking.
7. Regular Language-based voice colleagues.
8. Better Infotainment conveyance

III. CONCLUSION

This research project designs, and creates a cost-effective and Wi-Fi system for a smart home system using Arduino and Android smartphone electronics. development, stability and condition of the building. Signs that the house will be successful.

IV. REFERENCES

- [1] "Fardapaper-A-review-paper-on-'IOT'-It's-Smart-Applications".
- [2] R.Garg, "A Review on Internet of Thing for Home Automation." [Online]. Available: www.ijert.org
- [3] A.Hukeri and M.P.B.Ghewari, "REVIEW PAPER ON IOT BASED TECHNOLOGY," International Research Journal of Engineering and Technology, 2017, [Online]. Available: www.irjet.net
- [4] C. Stolojescu Crisan, C.Crisan, and B.P. Butunoi, "Aniot- based smart home automation system," Sensors, vol. 21, no. 11, Jun. 2021, doi:10.3390/s21113784.
- [5] A. Professor, G. Reddi Priya Student, R. Vasanthi Student, and B. Venkatesh Student, "IOT Based Smart Security and Smart Home Automation 1 Sudha Kousalya." [Online]. Available: www.ijert.org
- [6] M. Al-Kuwari et al., "Smart- Home Automation using IoT- based Sensing and Monitoring Platform."
- [7] I. Journal, S. Tiwari, and R. Gedam, "A Review Paper on Home Automation System Based on Internet of Things Technology," International Research Journal of Engineering and Technology, 2016, [Online]. Available: www.irjet.net
- [8] "IOT Based Home Automation Using Arduino." [Online]. Available: www.ijearth.com
- [9] N. Malik and Y. Bodwade, "Literature Review on Home Automation System," IJARCCCE, vol. 6, no. 3, pp. 733-737, Mar. 2017, doi: 10.17148/ijarcce.2017.63173.