ESP32 HOME AUTOMATION SYSTEM WITH MANUAL AND VOICE CONTROL FEEDBACK USING IOT

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PREFACE

We are living in the fourth industrial revolution. Our life is becoming more comfortable and smarter with the help of rapid upgrade of technology. Internet of things (IoT) is playing a massive role in this. One of the major sides of IoT is a smart home. As we are in the era of never-ending growth of the internet and its application, smart home system or home automationsystem is highly increasing to provide comfort in life and improving the quality of life. Home automation is becoming popular day by day due to numerous advantages. Specifically, the Smart Home space has been a prime focus with the introduction of devices such as Amazon Echo, Google Home, Samsung Smart Things, among others. The growth of an industry results in innovative, economic, and advanced solutions. In this paper, we focus on making non-smart homes smart and how to build a robust, cost-effective system that can be widely used.

Existing method for home automation involves manually operating the devices which is not very preferable in this smart world. Other methods include using microcontrollers like Arduino. But for this method we must connect external Wi-Fi module. Many existing, well- established home automation systems are based on wired communication such as Arduino based and raspberry pi-based home automation systems. This does not pose a problem until the system is planned well in advance and installed during the physical construction of the building. But for already existing buildings the implementation cost goes very high. In contrast,Wireless systems can be of great help for automation systems like Bluetooth, Wi-Fi and IOT based home automation systems.

We focus on making non-smart homes smart and how to build a robust, cost-effective system that can be widely used. Instead of Arduino UNO with external Wi-Fi module ESP32 is used as the hardware component for providing smart features for non-smart homes. We show that our system works effectively to switch on and switch off our appliances. The voice command function will be given to control any appliances or devices at home. This will provide a better communication in automated home as compared to normal homes.

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