**HOME AUTOMATION SYSTEM WITH TEMPERATURE CONTROL**

***Literature Review:***

Consumer interest in the idea of a smart home has risen over the past few years. A user may interact with and operate several devices with the touch of a few buttons using a home automation system's intuitive, user-friendly interface, which represents and reports the state of the connected devices [1]. Users of home automation systems can monitor and control all household appliances from a distance.

The introduction of technology into the home to improve the quality of life of its occupants through the provision of various services including telehealth, multimedia entertainment, and energy conservation is what is meant by home automation, according to [2]. There are numerous existing home automation systems defined by various authors.

[3] Proposes a home automation system that makes use of Bluetooth for communication. The remote control was an Android mobile phone with an ON/OFF button user interface. When we press the ON/OFF buttons, the Bluetooth module will send the microcontroller the proper command. The choice on which relay needs to be enabled would be made by the microcontroller. The main issue with Bluetooth is that it is ineffective when a user wants to control an appliance from a greater distance.

Few authors used ZigBee as a communication method to develop home automation systems. It is a radio frequency (RF)-based communication device based on IEEE 802.15.4 [4]. The authors of [4] described a home automation system with home application interoperability. An integrated gateway that combines Wi-Fi and ZigBee technologies makes it possible to monitor and manage home appliances from a distance. These gateways are employed to promote network interoperability. ZigBee-based home automation system was used by the creators of [5] to monitor and control household appliances while enhancing security. It is employed to regulate and keep an eye on the gas system and electrical doors. When an incursion is discovered, the owner of the home will be notified through SMS. Owner can immediately lock all the doors and activate the gas system by issuing the required commands. Devices using ZigBee consume less electricity than those using Bluetooth.

A voice-based home automation system has been explained in [6], [7]. It uses ZigBee device as a communication medium. The ZigBee and GPRS-based home security system was described in [8] by the authors. The host control system for this system was created utilising a PIR sensor, a ZigBee device, and a GPRS device. The host control system was connected to sub functional devices. Sub functional devices communicate using ZigBee and acquire data through their acquisition devices.

The MQTT protocol is used by the authors of [9] to describe a cloud-based home automation system. It allows consumers to manage and keep an eye on home appliances using a web page or mobile app.

Internet based home automation system has also become very popular in the 21st century. The developers of [10] created a low-cost hardware/software framework based on a device they refer to as the IPAcBox that enables home/industrial automation systems to be accessed and operated directly over the internet right out of the box, even in dynamic IP settings.

[11] Describes a low-cost, adaptable, and dependable home monitoring and control system with added security using ESP32, with IP connectivity through local Wi-Fi enabling formal user remote access and control of devices using android smart phone application. This system, which leverages the internet of things to operate human-desired items from industrialised machines to consumer goods, is self-governing.

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