Smart Framework for Automatic Control of Home Appliances Using IoT

Mallikarjuna Rao Gundavarapu [1], Srineeth Kumar Ineni [2], K. Sathvika [3], Gannavaram Shiva Keshava [4], Uppala Rishik Charan [5]

[1,2,3,4,5] Department of Computer Science and Engineering, Gokaraju Rangaraju Institute of Engineering and Technology, India.

gmallikarjuna628@grietcollege.com[1], srinithkumar35@gmail.com[2], sathvikarao09@gmail.com[3], chandrahaas.54321@gmail.com[4], rishikuppala@gmail.com[5]

Abstract: With the advent of the 21st century, comfort and efficiency started becoming a part of a common man's life. Virtual assistants like Amazon Alexa and mobile applications like Google Assistant have tremendously helped in making Home Automation Systems more effortless and orderly. Efforts are still being made for better intra-connection of our homes. Home automation has created a great impact in the field of the Internet Of Things. In this paper, we have used the pre-existing technology of Alexa Echo to make Home Automation more cost-effective by enabling non-smart devices to react to the virtual assistant. In this framework, we proposed a smart node (relay) that can remotely control the connected electrical gadget using text/voice commands. The status can be monitored and controlled by the Alexa app remotely without the need for physical voice commands to Alexa. Further, room ambience, as well as emotion-based lighting, can be provided.

Keywords: Home Automation, Virtual Assistants, Relay, Alexa Echo

1. Introduction

Home Automation makes it easier and more efficient to use home lighting, heating appliances, and other electronic appliances. It also provides users with increased levels of comfort and security. The resulting outcome is that of lesser energy consumption and a greener environment. [1] It might be as basic as controlling a few lights remotely or automatically, or it can be a comprehensive system that manages all key aspects of your home. Home automation is anything that turns your home into a smart environment by allowing you to control objects around the house automatically.

 IoT stands for Internet of Things, which is defined as a network of physical objects that are embedded with circuits, software, network connectivity, electronics, and also sensors in order to connect and transfer data. Over an existing network infrastructure, the Internet of Things helps to sense the objects and operate them remotely, enabling more connections of the physical environment into virtual systems while also improving performance. [2]