*A project report on*

**HOME AUTOMATION MONITORING AND CONTROL USING CLOUD AND MACHINE LEARNING**

*Submitted in partial fulfillment for the award of the degree of*

**M.tech Integrated Software Engineering (S.E)**

*by*

**PAVITHRA J (16MIS0225)**



**SCHOOL OF INFORMATION AND TECHNOLOGY ENGINEERING**

October, 2020

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**DECLARATION**

I here by declare that the thesis entitled “HOME AUTOMATION MONITORING AND CONTROL USING CLOUD AND MACHINE LEARNING” submitted by me, for the award of the degree M.tech Integrated Software Engineering (S.E) is a record of bonafide work carried out by me under the supervision of Dr. Uma K

I further declare that the work reported in this thesis has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.

Place: Vellore

Date: 28/10/2020 **Signature of the Candidate**

PAVITHRA J

**CERTIFICATE**

This is to certify that the thesis entitled “HOME AUTOMATION MONITORING AND CONTROL USING CLOUD AND MACHINE LEARNING”submitted  
by PAVITHRA J (16MIS0225) School of Information and Technology Engineering VIT, for the award of the Mtech Integrated Software Engineering (S.E)is a record of bonafide work carried out by him/her under my supervision.

The contents of this report have not been submitted and will not be submitted  
either in part or in full, for the award of any other degree or diploma in this institute or  
any other institute or university. The Project report fulfils the requirements and regulations of  
VIT and in my opinion meets the necessary standards for submission.

**Signature of the Guide**  **Signature of the Hod**

**Internal Examiner**  **External Examiner**

**ABSTRACT**

We can’t decrease the electricity growth rate but we can lessen the amount of electricity wasted each year by turning off our home appliances when not in use. The idea behind Google assistant-controlled Home automation is to control home devices with voice. In this project, the Google assistant requires voice commands. The voice commands for Google assistant have been added through IFTTT website. In this home automation, as the user gives commands to the Google assistant, Home appliances like Bulb, Fan and Motor etc., can be controlled accordingly. The commands given through the Google assistant are decoded and then sent to the microcontroller, the microcontroller in turn control the relays connected to it. The device connected to the respective relay can be turned On or OFF as per the users request to the Google Assistant. The Blynk app is also used a virtual switch. The microcontroller used is NodeMCU (ESP8266) and the communication between the microcontroller and the application is established via Wi-Fi (Internet).

**Keywords**— Google Assistant, Home automation, Interactive, Artificial Intelligence, google, raspberry pi

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**Place**: Vellore

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**CHAPTER 1**

**INTRODUCTION**

* 1. **INTRODUCTION**

The main objective of this project is to develop a home automation system using a NodeMcu with wifi being remotely controlled by any Android OS smartphone .Modern houses are gradually shifting from conventional switches to centralized control system, involving remote controlled switches. Now its possible to have a life where you could just command your home appliances to work as you need just by using your voice..In this paper, we do control the electronic appliances like T.V, fans, light set cover the internet with our voice and that to under a low budget..This paper talks about HomeAutomation Using NodeMCU and GoogleAssistant. Home automation is anything that enables you to use your home’s lighting, heating and appliances more conveniently and efficiently. It can be as simple as remote or automatic control of a few lights, or it can be a complete system that controls all major parts of your home. Custom set to your own personal preference. It focuses on wireless home automation technologies - these are easy to retrofit into existing homes now need for new wiring and no ripping up the carpets or drilling holes in the walls. Each technology has its own unique features and benefits that makes some more suited to particular applications, whilst others can be seen for all general home automation installations.

* 1. **OVERVIEW OF HOME AUTOMATION**

Remote home monitoring allows users to manage and control various aspects of home. These include motion detection, water leak detection, monitoring temperature against burglary and fire, and controls for lights, locks, fans and more from Laptop or Tablet or Smartphone. In the case of a smoke detector when fire or smoke. It is essential that the different controllable appliances be interconnected and communicate with each other. The basic aim of Home automation is to control or monitor signals from different appliances, or basic services. A smart phone or web browser can be used to control or monitor the home automation system. Many people today prefer smart devices which can be controlled remotely by the Internet rather than the manual control to improve the standard of living. The home appliances are expected to fully automatic and Internets of Things (IoT) is projected to provide dramatic improvements in smart home appliances. The internet technology is growing day by day and the internet connection is accessible everywhere conditioning unit. The IoT is going to rule the world within a few years. It presents an Internet of Things based real-time home automation and security system using Node MCU and ESP8266 Wi-Fi module which makes the system cost effective and portable. It is used for controlling and monitoring home appliances (Fans, Lights, etc.) from anywhere in the globe over the Internet. A voice recognition-based home automation system was proposed and implemented.

* 1. **CHALLENGES**