

CHAPTER 1

INTRODUCTION

Nowadays, people have smartphones (i.e., access to the internet/web) with them all the time. So, it makes sense to use these to control home appliances. Presented here is a home automation system using a simple Android app, which you can use to control electrical appliances with clicks. Think about the tasks you do around your house every day, managing your lights and fans, enjoying music and video, keeping track of your family, entertaining indoors and out—and imagine which tasks might be made more efficient and easier with the help of a home automation system. Our project in here is to make some of these tasks easy and seamless, the most basic things that we do in our household or our workplace is to turn on/off the lights and fans or any other appliance that is essential. We are going to make it happen by a Web Server based open-source electronics platform using ARDUINO ESP32. This microcontroller is inexpensive, easy to use and has a generous number of digital I/O ports, and a few analog inputs as well. And Arduino has been around since 2005, that's 16 years, which in terms of technology is eons.

CHAPTER 2

LITERATURE REVIEW

Wireless Home Automation system using IoT This system uses mobiles or computers to control basic home control and function automatically through internet from anywhere around the world globally, an automated home is sometimes called a smart home. It is meant to save the electric power and human energy. The proposed system is a distributed home automation system, consists of server i.e. Wi-Fi module, sensors. Server controls and monitors the various sensors, and can be easily configured to handle more hardware interface module (sensors). The Arduino board, with built in Wi-Fi module acts as web server. Automation System can be accessed from the web browser of any local PC using server IP, or remotely from any PC or mobile handheld device connected to the internet with appropriate web browser through server real IP (internet IP). Wi-Fi technology is selected to be the network infrastructure that connects server and the sensors. Wi-Fi is chosen to improve system security (by using secure Wi-Fi connection), and to increase system mobility and scalability

Why should we use a home automation system?

- 1) This project proposes a Home Automation system that employs the integration of multi-touch mobile devices, cloud networking, wireless communication, and power-line communication to provide the user with remote control of various lights and appliances within their home. This system uses a consolidation of a mobile phone application, handheld wireless remote, and PC based program to provide a means of user interface to the consumer.

- 2) The main objective of this project is to design and implement a control and monitor system for smart house. Smart house system consists of many systems that controlled by LabVIEW software as the main controlling system in this paper. Also, the smart house system was supported by remote control system as a sub controlling system. The system also is connected to the internet to monitor and control the house equipment's from anywhere in the world using LabVIEW.
- 3) The prime objective of this project is to assist handicapped/old aged people. It gives basic idea of how to control various home appliances and provide a security using Android phone/tab. The design consists of Android phone with home automation application, Arduino Mega ADK. User can interact with the android phone and send control signal to the Arduino ADK which in turn will control other embedded devices/sensors.
- 4) Many tasks that are repetitive in nature can be accomplished automatically or with fewer steps using home automation. Instead of turning off or dimming four different lights when you want to watch a movie, home automation allows you to accomplish this task with one button. Utilities can amount to several thousand rupees per month. Home automation can turn off lights or lower the rotations of your fan whenever you aren't using them and easily lower your utility bills by 10% to 25%.