A Smart Office module using Wireless Technology

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Abstract – [1]This paper presents the design and implementation of Smart Home Controller wherein the user can control their devices using the Android Application running on a Smartphone. The system employs client server architecture and Internet of Things (IOT) for communication. The controller is designed with the Arduino microcontroller (Node MCU) at the consumer end and is connected to the internet through Wi-Fi. In this system, every device is connected to the internet through the IOT protocol and controlling is done through HTTP requests sent from the Android mobile application. The API (Application Programming Interface) connects the server and android application and allows it to interact and exchange data with the server. Whenever the user sends requests from android application, the API connects to the server and it sends request to the controller, further to which the controller performs ON/OFF function of the device based on the request received. Using this method, controlling home appliances is discussed in this paper.**[2]**Smart office has become more and more popular in recent years. It aims at helping people manage the office appliance freely and build an autonomous environment in work area. This paper introduces a wireless solution based on Internet protocol to manage the smart office units easily. Based on this approach, I design a smart office system with the implementation of related software and hardware. People can use smart phones or tablets to control or monitor the office appliances both locally and remotely. Low-cost Wi-Fi module is used to build Smart Units. The remote server can act as a service provider and provide service for different homes and offices.**[3]**Nowadays Smart office is an important part of human life. In this work, design, development and evaluation of a network infrastructure is proposed for the smart office automation system that uses Wi-Fi technology for the control.The proposed work would also help the readers to design their own automation system for their office with the optimized usage of the electrical appliances and the power consumption can also be reduced in large numbers.**[4]** In many offices all the electrical loads are operated by electrical switches and also in room temperature monitoring can be done but coming to the operation there are several problems are occurred in offices, to overcome that, This paper proposes better automation in offices that can be done by using raspberry pi model –B, based on the sensor data to control the room temperature, humidity and electrical loads anywhere in the office with the help of android mobile, if we want to know the room temperature for that we can create separate web page also, by using this

arrangement electrical switches can replaced with LCD screen displayed type of switches with Wi-Fi inbuilt in offices.

Keyword – Iot, Home Controller, Node Mcu,Smart Office, Internet of Things, Home Controller, Node MCU, Remote Control.

INTRODUCTION

[1]The power outlets in our homes have switches and

sockets with wired connections. A person has to phys-
ically move and operate the switch either on or off

and apply or control power to the home appliance. The
person who is away from home can not either control
appliance or know the current status of the same and this
might result in wastage of electrical energy. People may**[2]**Smart Office system is a term used for office that could be controlled remotely using some kind of communication channel and communicating device and at the same time could be monitored from anywhere in the world without any human intervention. The system is controlled with android applications.**[3]**Smart Office system is for remotely communication vie channels And communication devices through the internet. This system controls with Android Apps. It is estimated that several hundreds of millions of devices are connected today. Under the on-going proliferation of the Internet of Things (IoT)**[4**In general, the smart office system is involving to control the electrical loads, it can be done by using Bluetooth, internet, Android application and Remote control. Wi-Fi-based office system is very easy to control and also eliminated wires in this process data is transmitted through the air. Bluetooth based office system control panel is interfaced with server via Bluetooth. Now the smart office are equipped with well-advanced technology is used in recent days for controlling and also many other operations can be made it.

Related Works: [2]Over the years many offices automation system have been developed with many different technologies.

In that project the system is divided into 3 parts Android application, Firebase database and hardware components. The communication channel used is Wi-Fi. The advantage of using Wi-Fi is that we don't need to be in direct line of contact for performing the operations like in Infrared and also it offers larger range unlike Bluetooth communication.

The office local network is organized by the central router by which the WLAN can access the internet. Smart units (such as smart switch, smart light, smart fan, smart sensors etc.) equipped with special Wi-Fi module can be configured to join the given home wireless network.This system composed with the raspberry pi, web server, sensors, android application, and electrical

appliances used in office automation system. The office automation system mainly divided into two parts i.e. client side and server side.

[2] Flexible and adaptable architecture of IOT network based on the Link Smart middleware is of specific advantage especially for the Smart Office concept, which has been investigated and applied within the FP7 project ELLIOT.

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