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DATA TRANSFER USING WIFINODE AND HOME AUTOMATION SYSTEM

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ABSTRACT

The proposed project is based on data transfer and also a Home automation technology. The automation involves no manpower and accurate data provided by the controllers. The internet of things(IoT), WIFI-nodes in automation process with the use of access points (APs) and efficiently transmit the data. In the process, temperature, humidity, light intensity,etc, all the parameters are known by the WIFI-based IoTnodes,and WIFI node, Home automation,stm32f103c6t6 microcontroller WIFI module to transmit data with the use of cloud storage. The data transfer by WIFI nodes via stm32f103c6t6 microcontroller, through the access point of the microcontroller and the sensor, gives information about the parameters. The parameters are the temperature, humidity, pressure, light intensity, UV index, and dust concentration by the use of a Smartphone. For the home automation, we will use the microcontroller stm32103c6t6 to automate the house by the sensors. A web or an android application is used by the users to give instructions to these systems. The automation involves temperature, pressure, and light intensity, through the sensors. It is a sensor-based project that uses multiple sensors to get the output.

Keywords:WIFInode,Homeautomation,stm32f103c6t6microcontroller

1. INTRODUCTION

The modern age is the age of technology to invent new technologies in daily life. Technology is advancing and making our lives easier, safer, and more comfortable. The process of technology automation involves data transfer from the wifi node through the smartphone via access points(APs).A home furnished with heating, lighting, sensing, and electronic devices that can be controlled and monitored by smartphone. Different types of control systems have been used in various studies, such as Bluetooth, GSM, wifi modules, and speech-controlled wireless interactive home automation systems[1]. The internet of things is an interconnected system of computer devices, machines, and digital devices, things, animals, or people, with unique identifiers of the human-human and human or human interactions. This is the computing concept, which describes the idea of connecting the physical objects we use every day to the internet to provide connections between things and people. The Internet of Things describes a world in which almost everything can be connected and intelligently communicated. A device can be any object such as a smartphone, internet, TV, sensor, electronic device, etc. Electronics, software, sensors, and network connections are built in to collect and share data[2]. Growing Complexity of Building Blocks Growing interest in environmental requirements to develop intelligent systems that are self-aware, analyze the environment, and can react at will without the human element of automated systems.

2. METHODOLOGY

It shows the home automation the hardware name of the system contains a microcontroller stm32f103c6t6 and a display unit, DHT 11(temperature and humidity sensor),light sensor (LDR), PIR motion sensor,smartphone, fan, tube light, and power supply[1]. The man comes in, the PIR motion sensor sensing the human body and intimate the sensors to work on. The temperature sensor works above 24°C.If the temperature is below 24°C the temperature doesn't intimate the fan to turn on. The temperature sensor named the DHT 11, is used to measure the temperature under any circumstances[6]. The controlling system includes the DHT11 sensor and the BMP 180 sensor is been used to measure the temperature and humidity inside the room of home.BMP 180 is the pressure sensor is used to measure the pressure home. It is DHT 11 and BMP180 indicate the pressure which counts 31 days as a monthand saves in cloud storage. DHT 11 is working on sensing the humiditytemperature of a home**,** it is used for lowering and higher the temperature. Home automation is the mode of sensor work. The wifinode is placed in the home to transfer data by the web applications in the smartphone[7]

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3. MODELING AND ANALYSIS

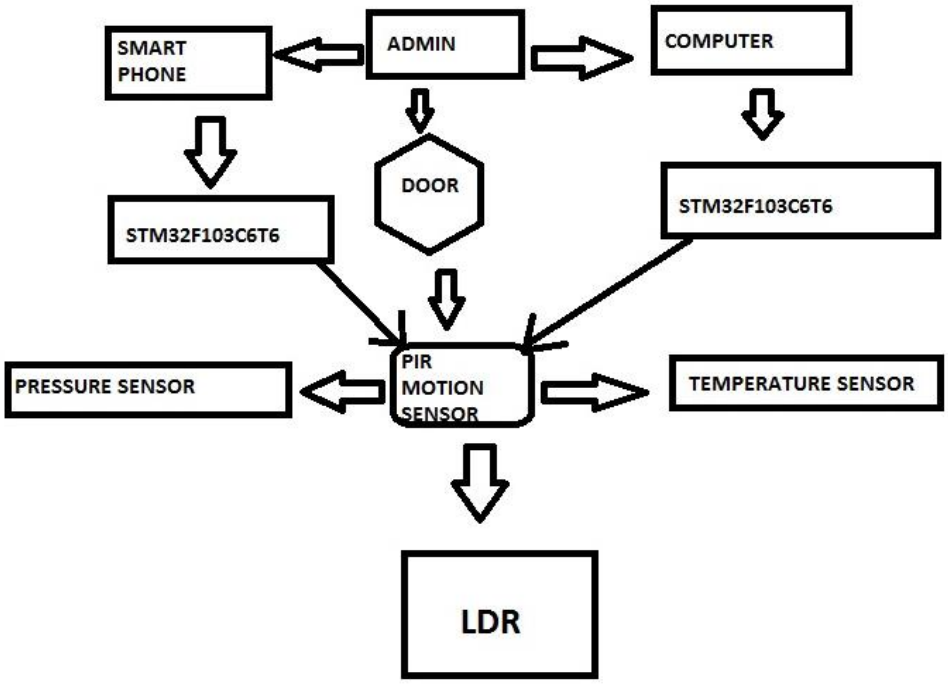

Figure1: Block diagram

First, we enter the house the automation works. The automation works on by the stm32f103[10], The door automatically openswhen the man enters. If we enter the room the IR motion sense the body and gives the information to the sensor to start to work. If the man enters the room the temperature sensor senses the room temperature. We set the temperature above 24°C to start the fan or AC in the room. The temperature sensor senses the room temperature is above 24°C whether it is above it intimate the fan to turn on by stm32f103. After the temperature sensor, next the pressure sensor start to work the same as the temperature sensor. The sensors are well accurate and give a correct reading[5]. Next, the LDR starts to work in the range of 10 meters. If the light intensity in the room is low, the LDR senses that and intimate the light turn on. It is the home automation that requires a sensor to work on it. It helps the house to automate by the stm32f103c6t6 it has used in many ways[9].

4. RESULTS AND DISCUSSIONS

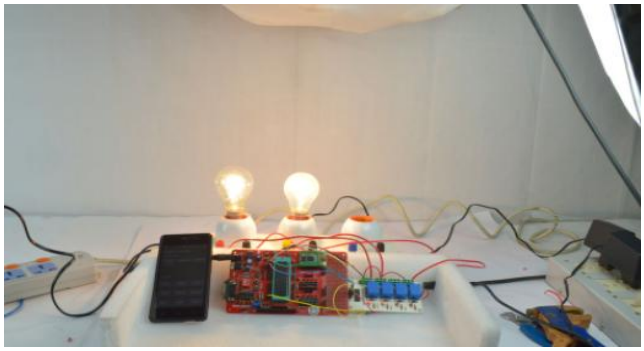

Figure2: OUTPUT

The concept of Home Automation aims to bring the control of operating your every day home electrical appliances to the tip of your finger, thus giving user affordable lighting solutions, better energy conservation with optimum use of energy. Apart from just lighting solutions, the concept also further extends to have a overall control over your home security as well as build a centralised home entertainment system and much more. The Internet of Things (or commonly referred to as IoT) based Home Automation system, as the name suggests aims to control all the devices of your smart home through internet protocols or cloud based computing. The IoT based Home Automation system offer a lot of flexibility over the wired systems s it comes with various advantages like ease-of-use, ease-of-installation, avoid complexity of running through wires or loose electrical connections, easy fault detection and triggering and above and all it even offers easy mobility.

5. CONCLUSION

From this project, the data transfer through the WIFI node from cloud storage is concluded, and also from the data source, the home automation involves the sensors and microcontroller we have to conclude the project. In future the home automation is constructed throughout the world. After 2030 home automation projects have more scope to build this type of automation in the home. This project is done using anstm32f103 microprocessor with sensors. It gives home automation without the use of manpower. In the future, it gives new technology to the world.

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