Android Based Electrical Appliance Control

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Abstract— As the world gets more and more technologically advanced, we find new technology coming in deeper and deeper into our personal lives even at home. Home automation is becoming more popular around the world and is becoming a common practice. The process of home automation work by making everything is the house automatically controlled using technology to control and do the jobs that we would normally do manually. Our project illustrates Application control system accessed by a remote device such as mobile phone to allow owner to control, monitor and coordinate the appliances.

Key words: Android Operating System, Wi-Fi Control, Home Automation, Smart Home

I. INTRODUCTION

Home automation can be defined as a system implemented at a residential place whereby the in tension is to make the place intelligent so that energy is conserved and security is maintained.

Our system will be free from all this giant components, which, indirectly suggests that our system has a good quality of portability.

This Wi-Fi protocol has some upper hand benefits like its range is in the radius of 150-200m .The mobile application can also extend the security of the system via an implementation of the password protected application.
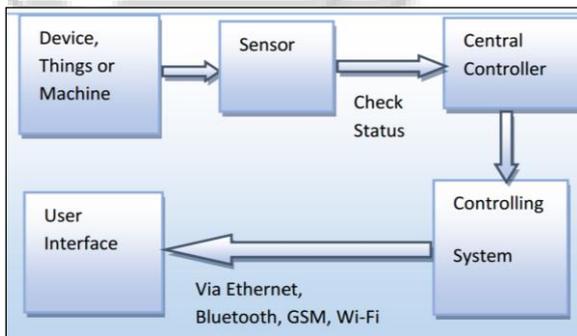
II. BLOCK DIAGRAM

Fig. 1: Block Diagram of System

In this section, discussed different Home Automation System with their technology with features, benefit and limitations they have.

"The Figure" shows Basic Architecture of Remote Home Automation. Figure Basic Block Diagram of Home Automation. The Home automation system that uses Wi-Fi technology.

System consists of three main components; web server, which presents system core that controls, and monitors users' home and hardware interface module(Arduino PCB (ready-made), Wi-Fi shield PCB, 3 input alarms PCB, and 3 output actuators PCB.

Which provides appropriate interface to sensors and actuator of home automation system. The System is better from the scalability and flexibility point of view than the commercially available home automation systems.

The User may use the same technology to login to the server web based application. .If server is connected to the internet, so remote users can access server web based application through the internet using compatible web browser.

III. CIRCUIT DIAGRAM & ANALYSIS

The power supply for the circuit the 230v. 50Hz AC mains is converted to D.C. 12V by using of cell phone charger. Then it is filtered by capacitor C1 regulated by IC 7805 Regulated 5V is used to power the circuit except controller but relays operate to 12 V supply.

The microcontroller is the heart of our system. It is an 8-bit microcontroller with 8KB flash programmable & erasable read only memory. It was 32 input / output (I/O) lines two 16bit times/counters, a five vector two level interrupt architecture, a full duplex serial port on chip oscillator and clock circuitry. The crystal frequency 11.0592 MHz along with two 100pf capacitor provides basic clock frequency to microcontroller AT 89s52. Here we provide the separate button for rest which is connected to the pin no.9 of microcontroller.

The port 2.0 provide to the Display (LCD 16*2). When the motor is healthy condition and faulty condition the LCD is display Motor ON/OFF.

The BC 547 transistor connected between VCC and GND pin.BC547 of base connected to the 2 combination pins. Here VCC equal to +5V. If these two pins are short so, the VCC connected to base. Hence base- Emitter junction forward bias and +5V is directly ground so, VCC Supply is take in output and motor is ON. If these combination pins not shorted because of no water flow to delivery pipe so, the collector emitter junction forward bias. The VCC supply is ground and output take zero so the motor is OFF.
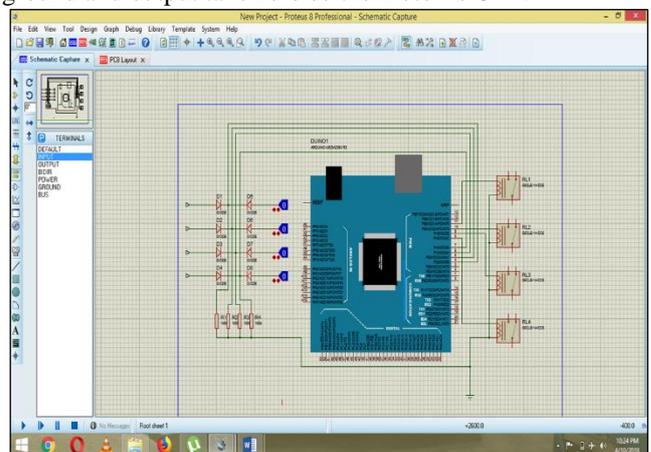

Fig. 2: Circuit Diagram

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IV. IMPLEMENTATION OF HARDWARE

Fig. 3:

The operation of these submersible motor under this condition such as Dry-running and overloading for long time will reduce their life significantly high temperature of motor, occurring faults. It should be control by starter of the motor, but Dry running condition is not controlled by starter. The project consist a smart electronic monitoring devices attached to the submersible motor device is microcontroller and sensors attached.

V. ADVANTAGES

– Reduce the bills of electricity
– Reduce installation costs
– -Integration of mobile devices
– Saves energy and time.

VI. CONCLUSION

The home automation using Internet of Things has been experimentally proven to work satisfactorily by connecting simple appliances to it and the appliances were successfully controlled remotely through internet. The designed system not only monitors the sensor data, like temperature, gas, light, motion sensors, but also actuates a process according to the requirement, for example switching on the light when it gets dark. It also stores the sensor parameters in the webpage (database) in a timely manner. This will help the user to analyze the condition of various parameters in the home anytime anywhere.

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