

## **Wi-Fi based Wireless advanced Home Automation system**

The project aims at designing an advanced home automation system using Wi-Fi technology. The devices can be switched ON/OFF using a Personal Computer (PC) through Wi-Fi.

Automation is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. These had greater importance than any other technologies due to its user-friendly nature. These can be used as a replacement of the existing switches in home which produces sparks and also results in fire accidents in few situations. Considering the advantages of Wi-Fi an advanced automation system was developed to control the appliances in the house.

Wi-Fi (Short for **Wireless Fidelity**) is a wireless technology that uses radio frequency to transmit data through the air. Wi-Fi has initial speeds of 1mbps to 2mbps. Wi-Fi transmits data in the frequency band of 2.4 GHz. It implements the concept of frequency division multiplexing technology. Range of Wi-Fi technology is 40-300 feet.

The controlling device for the automation in the project is a Microcontroller. The data sent from PC over Wi-Fi will be received by Wi-Fi module connected to Microcontroller. Microcontroller reads the data and decides the switching action of electrical devices connected to it through Relays and Triac switches. The Microcontroller is programmed used embedded 'C' language.

### **Features:**

1. Wi-Fi based user-friendly interfacing.
2. Low power consumption.
3. Controls high and low voltage devices.
4. Long life.

**This project provides exposure to the following technologies:**

1. Wi-Fi.
2. Interfacing of Wi-Fi module and microcontroller.
3. Embedded C programming.
4. Conversion of AC supply to DC supply.
5. Design of PCB.
6. LCD interfacing.

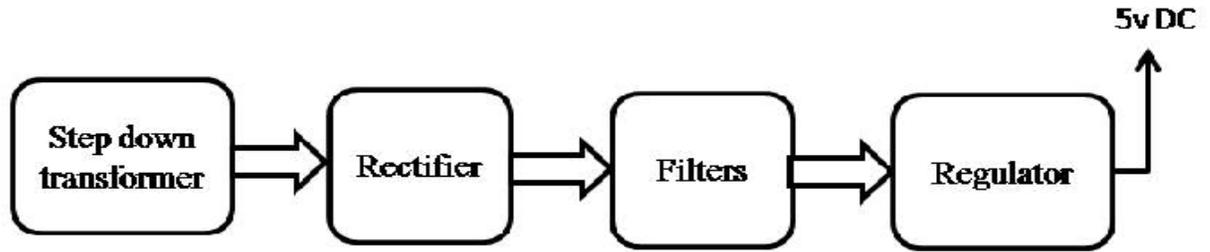
**The major building blocks of this project are:**

1. Regulated Power Supply.
2. Microcontroller.
3. LCD with driver.
4. Microcontroller.
5. Crystal Oscillator.
6. LED indicators.
7. Relay and Triac.
8. Wi-Fi module

**Software's used:**

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

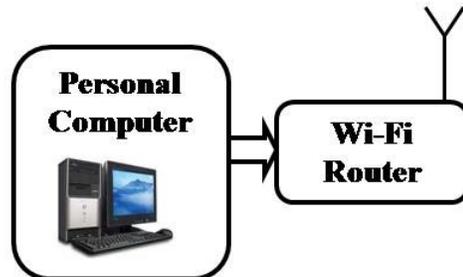
**Regulated Power Supply:**



Block diagram:

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### 1. Transmitter



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## 2. Receiver

