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Title of the article:

SMART TECHNOLOGY HOME AUTOMATION

USE OF THE ARTICLE:

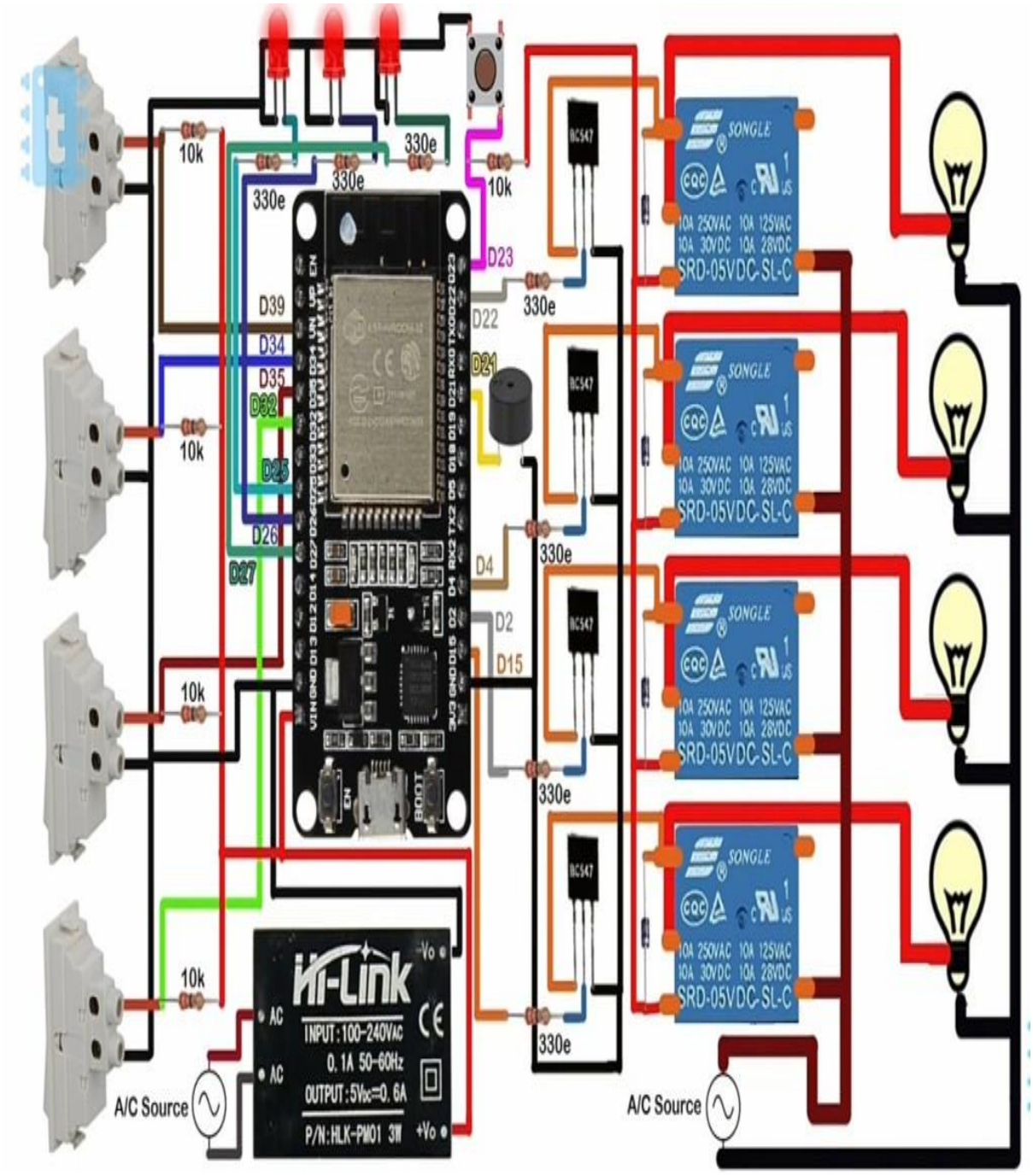
Our main motto is to reduce the man power.if you are searching for a project using which you can control the appliances over internet from your phone as well as know the status of your appliances in ON/OFF condition, that is you will be able to know the Real Time Status of your Appliances, and also control it then this is the right article you are landed on.

This time on techiesms we have a very different project that is almost a product and contains all the features that any Product contains. Here we present a complete solution for Internet controlled Home Automation asking with Manual Control as well as Real-Time Feedback of the Switches.Yes, you can control the appliances with Internet and also in the very regular Manual manner.In this article, I'll let you know how to make your own Internet controlled Appliances with Real Time status and Feedback Control.

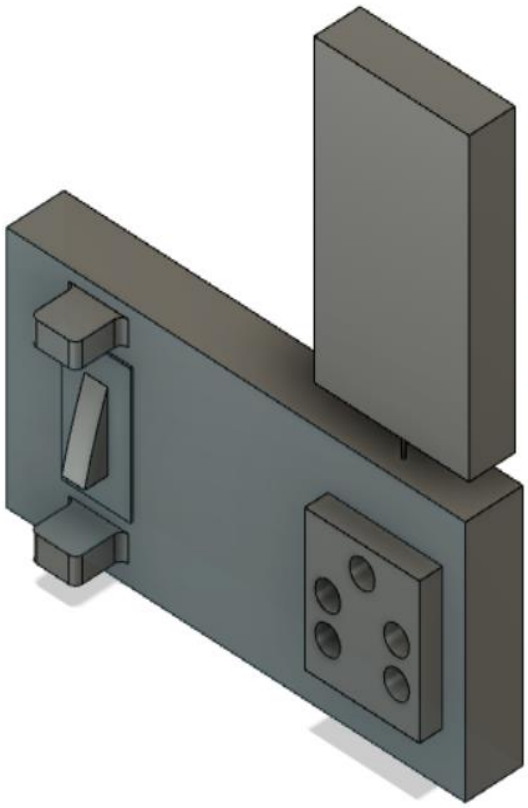
Smart Technology Home Automation

Brief introduction of this device :In this device, it connects with wifi and Bluetooth combination in this automation.it helps in on/off switches automatically.if human enters the room the device will automatically detect the human and turn on light or fan and ac. When the human is not, there in the house or room it will turn off automatically lights or fan or ac.

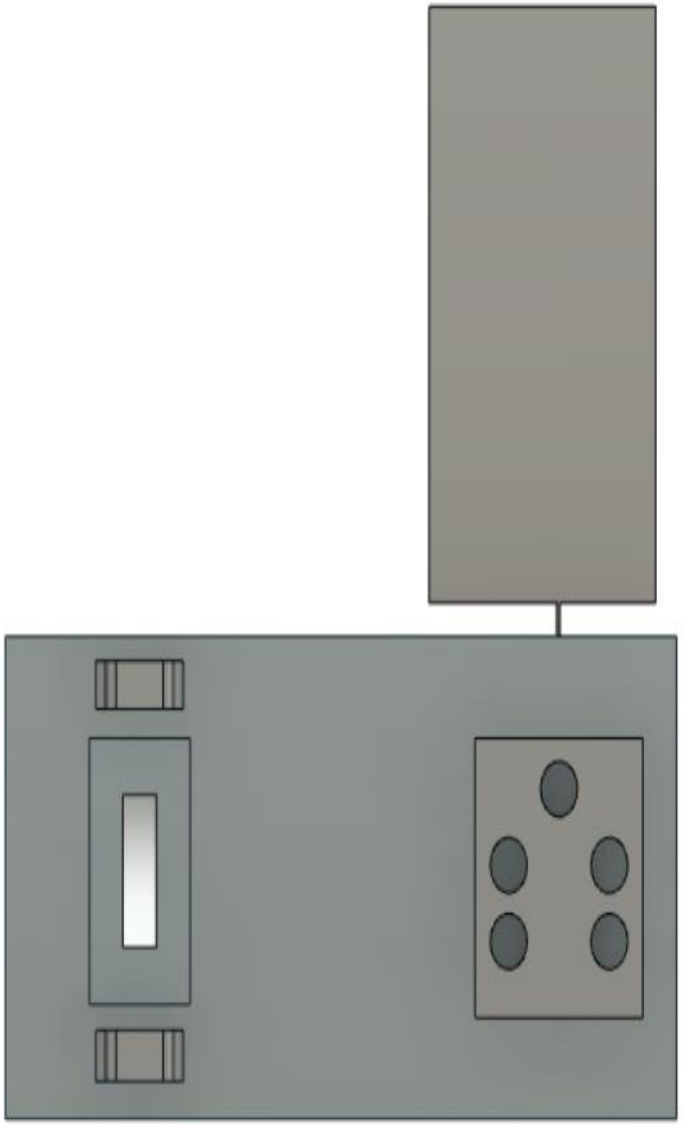
Making of circuit diagram:



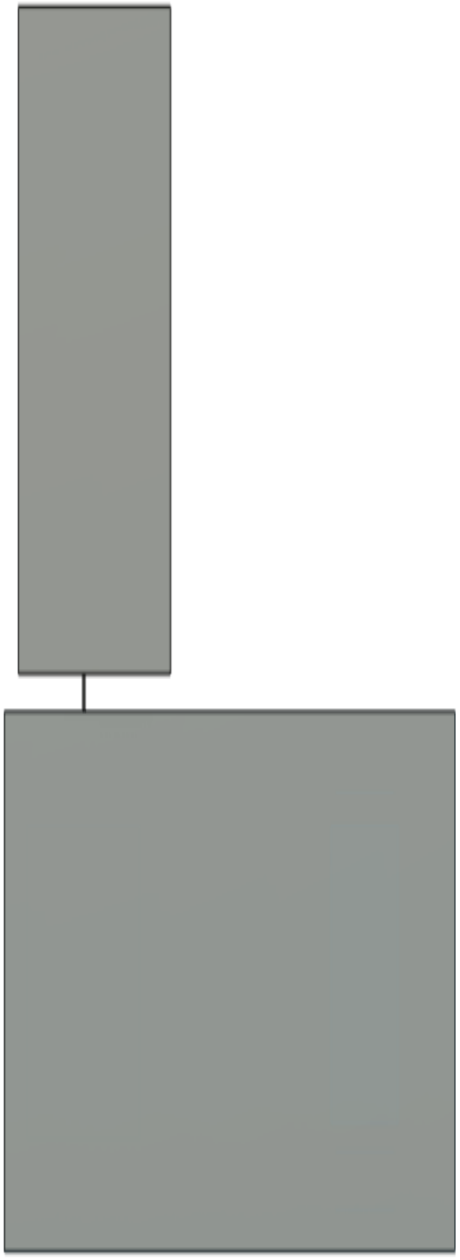
Isometric view:



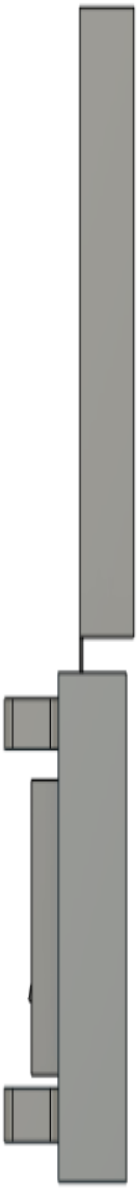
Front view:



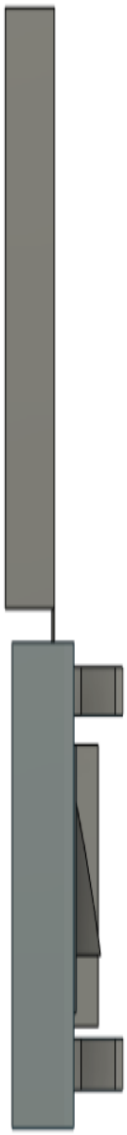
Rear view:



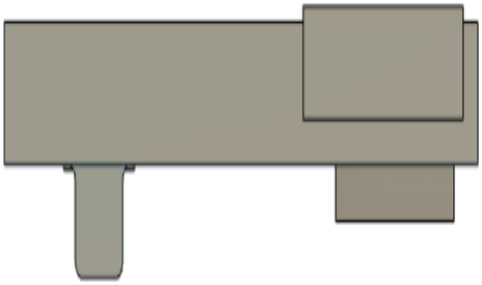
Right side view:



Left side view:



Top view:



Bottom view:

Components and their uses:

1.pir sensor:

A **passive infrared sensor** (**PIR sensor**) is an electronic sensor that measures infrared (IR) light radiating from objects in its field of view. They are most often used in PIR-based motion detectors. PIR sensors are commonly used in security alarms and automatic lighting applications.PIR sensors detect general movement, but do not give information on who or what moved. For that purpose, an imaging IR sensor is required.PIR sensors are commonly called simply "PIR", or sometimes "PID", for "passive infrared detector". The term *passive* refers to the fact that PIR devices do not radiate energy for detection purposes. They work entirely by detecting infrared radiation (radiant heat) emitted by or reflected from objects.

2. ESP 32 MODULE:

ESP32 is a series of low-cost, low-power system on a chip microcontrollers with integrated Wi-Fi and dual-mode Bluetooth. The ESP32 series employs a Tensilica Xtensa LX6 microprocessor in both dual-core and single-core variations and includes built-in antenna switches, RF balun, power amplifier, low-noise receive amplifier, filters, and power-management modules. ESP32 is created and developed by Espressif Systems, a Shanghai-based Chinese company, and is manufactured by TSMC using their 40 nm process. It is a successor to the ESP8266 microcontroller.

3. Hi-Link 5 volts Power Supply:

HLK-PM01 5V/3W Switch Power Supply Module is plastic enclosed PCB mounted isolated switching step-down power supply module. It can supply 5V DC from 120V AC – 230V AC and has a power rating of 3 Watt. This makes it perfect for small projects that needs a 5 volt supply from mains. There are many advantages for these modules, such as low-temperature rise, low power, high efficiency, high reliability, high-security isolation etc.This Power Supply Module voltage source is a switching source, so you do not have to worry about fluctuations in voltage grid. It is designed to be mounted on the PCB and is the ideal solution to power pads that you take. It is widely used in a smart home, automation and control, communication equipment, instrumentation and other industries.

4. 5 volts Non-latching Relay:

The other side has three low voltage pins (Ground, Vcc, and Signal) which connect to the Arduino. Inside the **relay** is a 120-240V switch that's connected to an electromagnet. When the **relay** receives a HIGH signal at the signal pin, the electromagnet becomes charged and moves the contacts of the switch open or closed**.**

5. Two pin terminal connectors:

This **2 Pin Wire** to Board **connector** are used widely for connecting Wires to Boards, It can be for Power Supply or connecting any other perpheral like Motor to the Board. The distance between **two** mounting **pins** is in **multiple** of standard 5mm so that this **connector** can be mounted easily on general **purpose** PCBs.

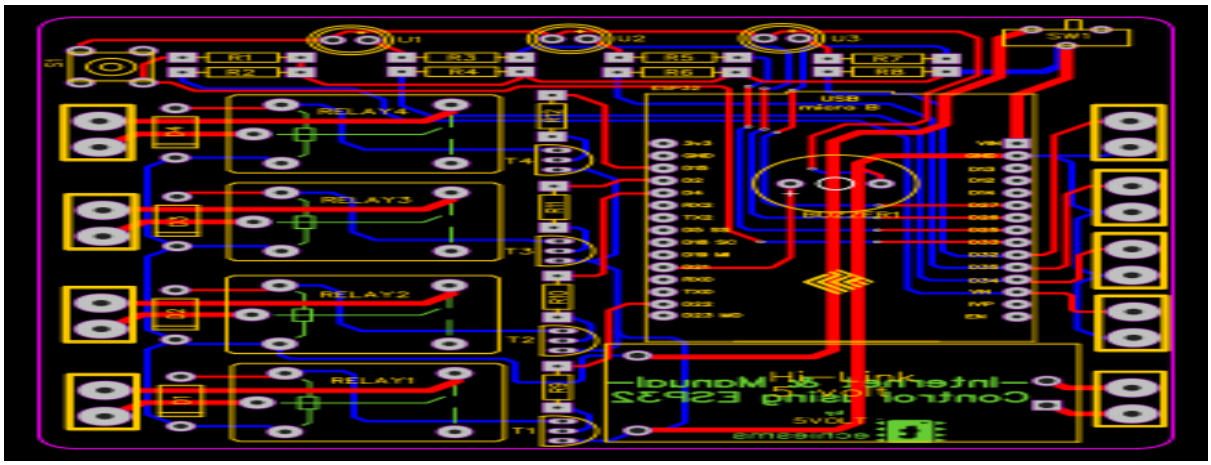
6. Buzzer:

A **buzzer** or beeper is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric (piezo for short). Typical uses of **buzzers** and beepers include alarm devices, timers, and confirmation of user input such as a mouse click or keystroke.

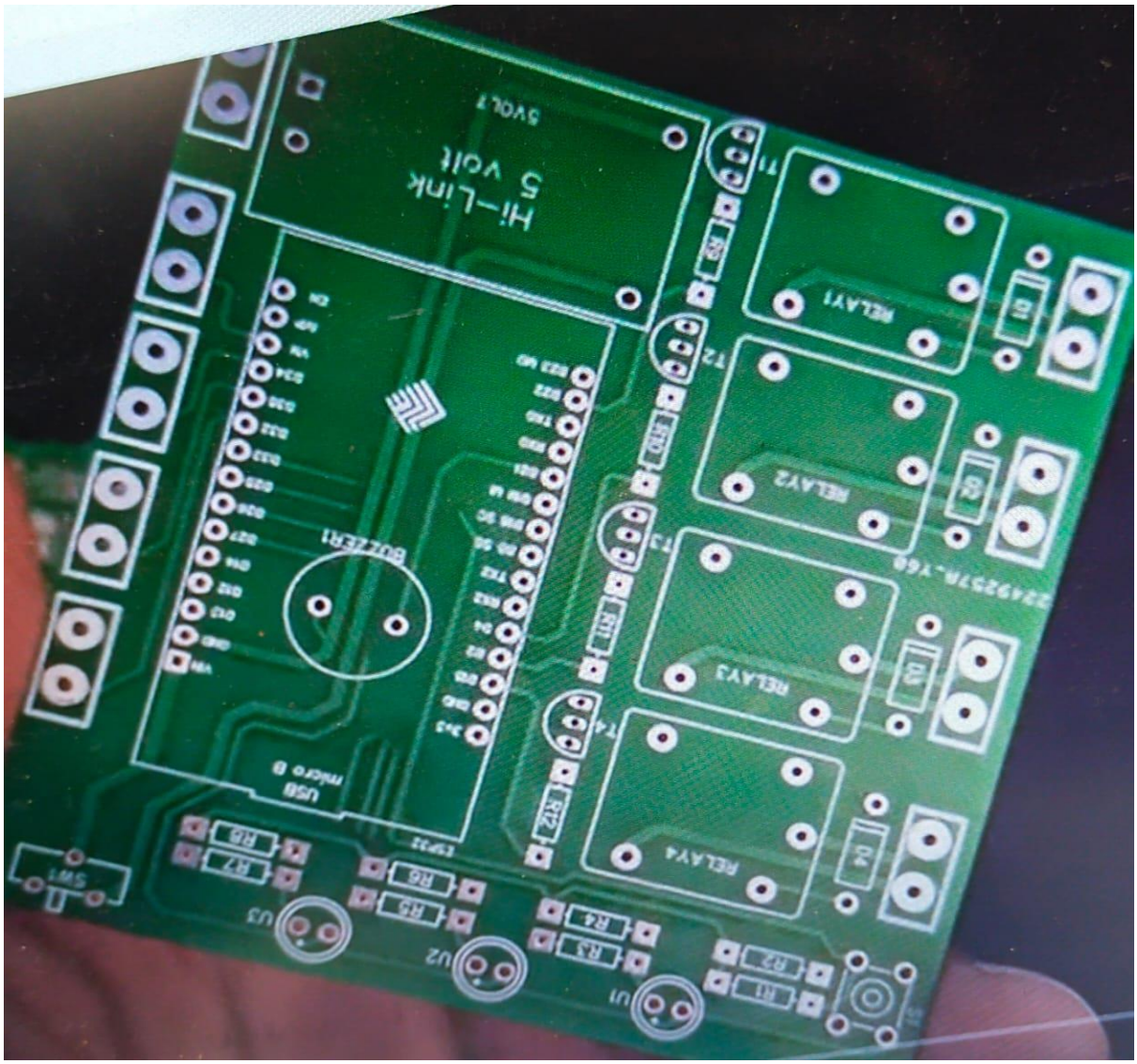
7. BC547 transistor:

BC547 is a general purpose BJT NPN transistor mostly used in electronics hobbyists and educational electronics projects. Besides these uses it can also be used in commercial circuits. It comes in TO-92 packaging and the maximum output current this transistor can handle is 100mA. The transistor is having very good DC current gain and low noise capabilities due to which it is ideal to use in signal amplification stages. The typical saturation voltage is only 90 millivolts which is also a good sign to use it as a switch.

Our circuit model (pcb):



Our pcb in reality:



Assembled components by soldering into PCB looks like this