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Energy Saving in EWS Lab using IOT Automation

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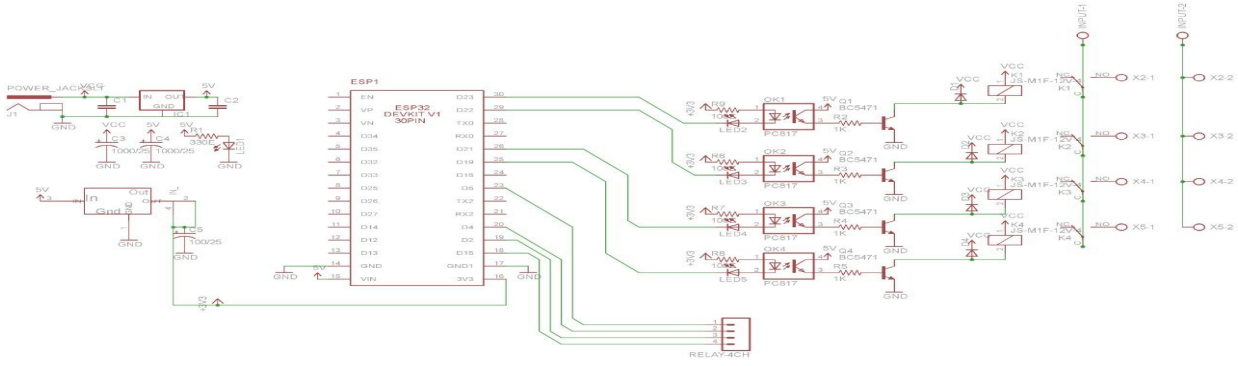
Abstract: *An IoT based office automation system is presented in this research paper. It's important for us to know that office automation system makes use of portable devices as an interface. They can communicate with the internet, by means of a less power consuming communication protocol like the wireless fidelity, ZigBee, cloud to mention but a few. The sole aim of this research paper is to widget office appliances via website using wireless fidelity (Wi-Fi) to be the interaction procedure whereas ESP32 is the server system. Hence, office appliances like bulb, fan and socket were controlled through website easily in addition a push button can also be used to manually control the appliance. The results show that the server communicated with the Arduino hardware circuit to control the electrical appliances connected to it. This paper demonstrated how energy can be fully conserved in offices.*

Keywords: ESP32 Microcontroller, Relays, IC Drivers, etc

I. INTRODUCTION

1. It is quite difficult for individual office owners to operate one or more that one Offices and keep track of each office appliances individually. At such time we need an online solution for physical office appliances control. Her we propose use of IOT technology for office appliance automation. This allows owner co control his/her office appliances through the internet using an easy to use GUI. For this system demonstration our system uses an AVR family microcontroller for the purpose.
2. A WIFI modem is used for receiving commands over the internet. We use 3 loads and a fan to demonstrate as office loads. A WIFI modem is used to receive commands over the internet. The WIFI module receives user commands over the internet. This information is then passed on n to the microcontroller.

II. BLOCK DIAGRAM



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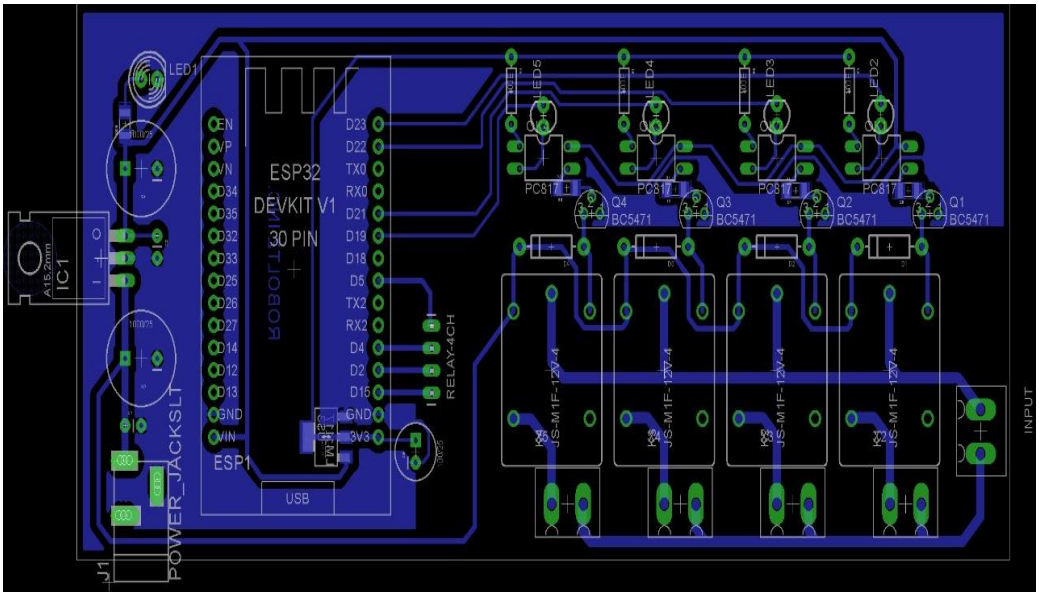
III. PCB LAYOUT



IV. ADVANTAGES

- It can assist in the smarter control of homes and cities via mobile phones. It enhances security and offers personal protection.
- By automating activities, it saves us a lot of time.
- Information is easily accessible, even if we are far away from our actual location, and it is updated frequently in real time.
- Electric Devices are directly connected and communicate with a controller computer, such as a cell phone, resulting in efficient electricity use. As a result, there will be no unnecessary use of electricity equipment.

V. DISADVANTAGES

- Hackers may gain access to the system and steal personal information.
- Since we add so many devices to the internet, there is a risk that our information as it can be misused.
- They rely heavily on the internet and are unable to function effectively without it.

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