Retraction

Retraction: Intelligent Appliance Control System Using IoT
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This article (and all articles in the proceedings volume relating to the same conference) has been retracted by IOP Publishing following an extensive investigation in line with the COPE guidelines. This investigation has uncovered evidence of systematic manipulation of the publication process and considerable citation manipulation.

IOP Publishing respectfully requests that readers consider all work within this volume potentially unreliable, as the volume has not been through a credible peer review process.

IOP Publishing regrets that our usual quality checks did not identify these issues before publication, and have since put additional measures in place to try to prevent these issues from reoccurring. IOP Publishing wishes to credit anonymous whistleblowers and the Problematic Paper Screener [1] for bringing some of the above issues to our attention, prompting us to investigate further.

[1] Cabanac G, Labbé C and Magazinov A 2021 arXiv:2107.06751v1

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Intelligent Appliance Control System Using IoT

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Abstract. Automation systems have recently gained popularity due to their user-friendly design and ability to manage energy waste. This automation system is linked with “Internet of Things (IoT)” in order to be operated remotely. "Smart Home Automation System (SHAS)" is the name given to this system. In this paper, we take an approach to design a system that uses less resources and can be targeted and managed remotely. For this system, the Internet networking module Node MCU (ESP8266) is accessed through the Internet is connected with main control unit of the supply. The Blynk framework, which is multimodal and web-based, is used for home automation system. The main subject of this paper is to boost our home automation intelligence.

1. Introduction

Because of technological advancements, human-machine interaction is becoming more practical in everyday life. India is the world's third-largest producer of electricity and its third-largest user and has an installed capacity of 374.2 Giga Watt. In India about 1598 Tera Watt hour power is produced per year of which 21.04% is wasted. Our intelligent system helps in utilizing the wasted power. Human-machine interface technology has gone a bit forward by taking to the Internet which was once used for networking (IoT). The need for change in the present world is to achieve greater connectivity; the Internet of Things (IoT) is thus an invaluable tool for crosslinks. IoT is moving beyond creativity to change life [1-3]. This programme is intended to use the Internet to connect something from everywhere. IoT is an imminent technology which enables us to monitor devices over the Internet. The approach suggested is to use IoT to manage homemade devices, automating modern homes through the Internet. The user-friendly interface enables a user to access devices easily through the internet. In the design, best practises are illustrated for the fast and quick construction of an intelligent home model with the use of IOT technology, the controller and the Android device. The Internet networking module Node MCU (ESP8266) and the web-based Blynk application can be accessed through the Internet. The Blynk framework, which is multimodal and web-based, is used for home automation. As a result, power conservation is the primary concern, and this project's primary goal. The aim of this study is to reduce energy consumption (and thus electricity bills) while also ensuring the safety and protection of household appliances.

2. Smart Home Automation
In this century, automation is extremely important. Home automation makes life easier and more pleasant. Members of the family appreciate the ease of automation by having the light and fan in the room controlled automatically [4]. With the support of the internet and the Blynk app, this home automation was developed. IoT developed applications that enable users to convert non-smart devices into smart devices and access them through the Internet. It turns the house into a smart house and gives you a more reliable way to manage your home appliances. Additionally, users can track their homes and switch on/off their appliances, resulting in significant energy and bill savings. These innovations will undoubtedly rule in the future. Simple components were used to create these technologies. The key components here are the microcontroller and relays. Two components are sufficient to power your appliances, which appears to be a successful solution [5]. Step by step, we are progressing in the fields of automation and technology, as well as the updating of these technologies by adding voice recognition. When our home automation system is connected to the internet, we can access our appliances from anywhere. All of this was created with the help of the blynk application [6]. It is a largely untapped application in the field of automations, as well as the most responsible. This has the advantage of allowing several devices to access these applications, which is accomplished by the host sharing the access code and making adjustments only by the host. This is one of the primary benefits that we are bringing to the automations field with this application.

![Figure 1. Block Diagram](image)

3. System design and Implementation

In recent years, systems have been built in such a way that they are beneficial to humans. Our system is built in such a way that it can be handled in a multimodal manner, meaning that it can be operated manually as well as automatically. The benefit of multimodal is that a web-based programme will assist in managing the system's appliance even if the manual process fails [7]. The proposed model therefore aims to have more flexibility while enhancing the robustness of the device. The block diagram of our system. A main controller unit (main home circuit switching) that connects with a 24-hour Wi-Fi network can be introduced with the clever home, as seen in Figure 1. The key controller is programmed to establish an automatic connection to the network available and to connect to an automated power backup to ensure the Wi-Fi connection is not disappeared. In addition, the systems are connected to the main controller in order to turn non-intelligent devices (here, old home appliance system) into intelligent devices. Users can then connect their intelligent home and track it using the blynk IoT application via a web-based service.

System Requirement
- Node MCU (ESP8266).
- Relay.
- Blynk Application.
- Arduino Software (IDE).

Due to its small scale, reliability and simplicity of interfacing, NODEMCU (ESP8266) has been selected as a controller for this device. It contains a Wi-Fi module IEEE 802.11 b/g/n. The ESP8266 firmware is open source and built on a proprietary SDK from the chip manufacturer. The firmware includes a basic programming environment and a quick and easy scripting language. On a regular circuit board the ESP8266 chip can be installed figure 2. An USB port, a hardware reset button, a Wi-Fi antenna, LED lights and basic GPIO pins, which can be inserted into a circuit board, are also included on the board. A relay is a device that makes an electromagnetic transition. A relay enables one circuit to switch the other one after separating the two circuits [8]. Using a relay, a system with high voltage allows a low-voltage circuit is enabled and disabled. A power supply of 5V, for example, is connected to the relay by a 230V AC power supply lamp. Relays are offered at different voltages, including 6V, 9V, 12V, 24V, etc. A relay's input and output are separated into two parts. A coil produces a magnetic field when a small input voltage is applied to the input side as seen in figure 3. Normally closed (NC), normally opened (NO), and typical contactors are used in this relay (COM). Electrical equipment can be turned on or off by using the correct contactor combinations. The Arduino programme acted as the project's software-to-hardware interface. The microcontroller needs a programme to function and execute the process associated with the proposed design. It is easy to check and compile the code after it has been written [9]. To begin, the Wi-Fi shield (Wi-Fi hotspot) connects to the existing network infrastructure and launches the open source Blynk server. The Wi-Fi module then transmits a single message to the client app, which indicates whether the system is online or offline, before the input-output pins are checked. 1, 2, 3, 4, 5, 6, 7 and 8. If the client (operator) toggles any of the switches, the data is received by the Blynk server as shown in figure 4, which displays the status to the user on the led provided in the app.

### 3.1 Working Models

![Flowchart](Figure 2. Flowchart)
The NodeMCU ESP8266 controller is used in the Home Automation System, and the command is provided by the Blynk application on a mobile phone connected to the WiFi network. NodeMCU ESP8266 has an integrated WiFi module, which allows devices to be linked to a Home Automation System. An authentication token is used to link all WiFi networks. The WiFi-enabled board, which is similar with the ESP8266-based NodeMCU development board, is at the heart of today's project. It's an open source framework for creating WiFi-enabled embedded systems, based upon the famous ESP8266 WiFi module and the NodeMCU firmware. The desire to address the limitations associated with the first iterations of the ESP8266 module, which were not compatible with breadboards, led to the development of NodeMCU. It was challenging to power and even more challenging to programme. The NodeMCU board is simple to operate. Its low cost quickly won it over to makers' hearts, and it is now one of the most common boards on the market. The ESP8266 board is equipped with two channel relay modules for this project. The project flow entails controlling the NodeMCU's GPIO from a webpage on any computer connected to the board's network. The status of the GPIOs controls the coil of the relays, which allows the relay to alternate between normally open (NO) and normally closed (NC) conditions depending on the GPIO's state, effectively turning the linked appliance "ON" or "OFF." This process is now complete by providing either a Micro USB or a Vin, GND supply. It can be managed using the Blynk software on a smartphone. According to our actions, the hardware is in good working order.

4. Conclusion and Future work

The proposed system is low-cost, practical, and simple to use. The architecture as a whole is designed to be adaptable to user needs. Node MCU is easy to programme and understand. For example, a user can use their Smartphone’s blynk application (Android based) to hit a button or manually operate
the button (ON/OFF). By implementing this type of system, we can ensure that energy conservation is possible. The level of human comfort will be raised, while the cost of living will be decreased. We'd like to expand our smart home's control units in the future so that it can become more intelligent and useful in real life.

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