Electronic System Automation

Learnathon

Batch_1

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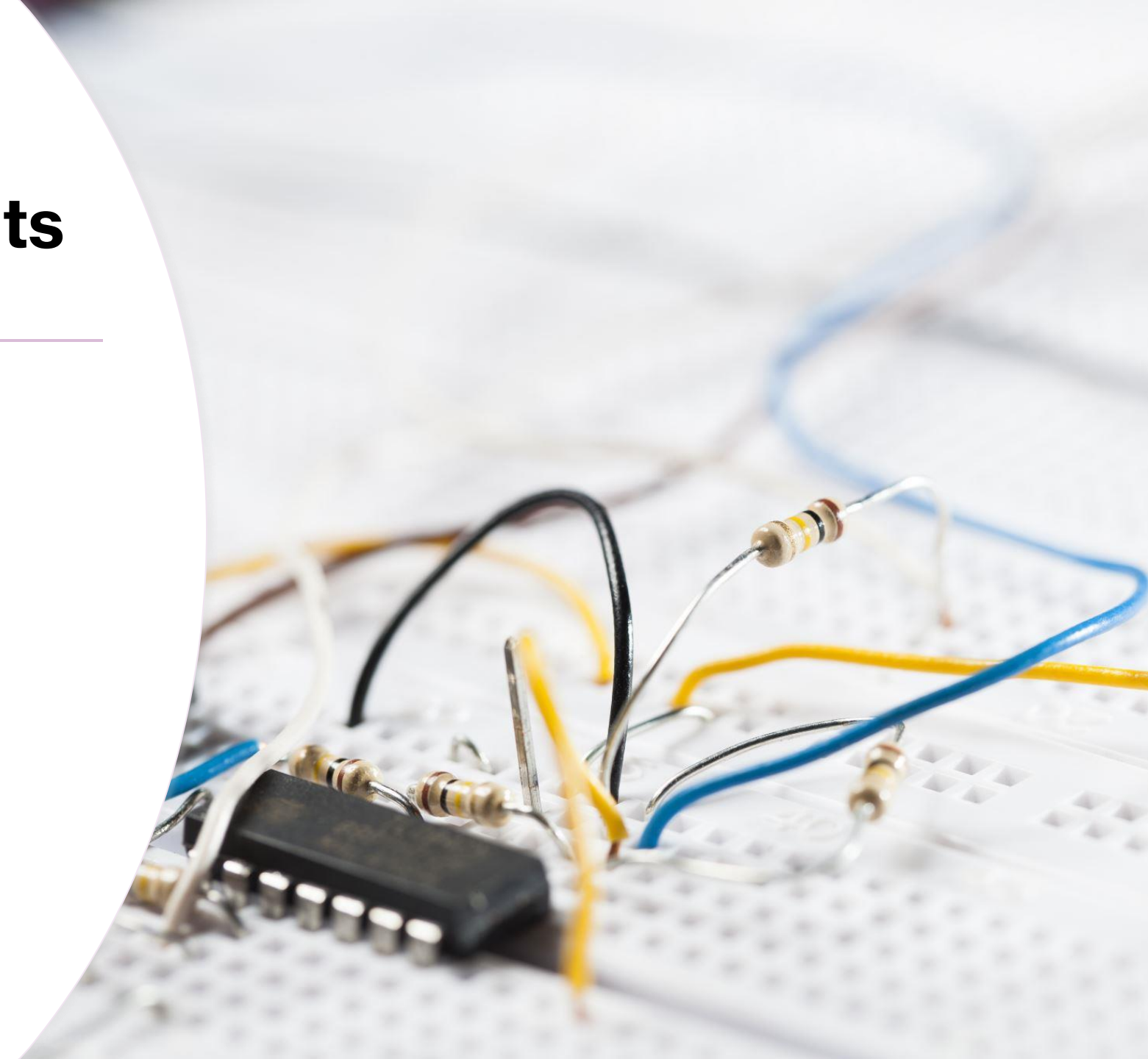
Task 1

INTERRUPT REQUEST BASED POSTING OF RFID DATA INTO GOOGLE SPREAD SHEETS

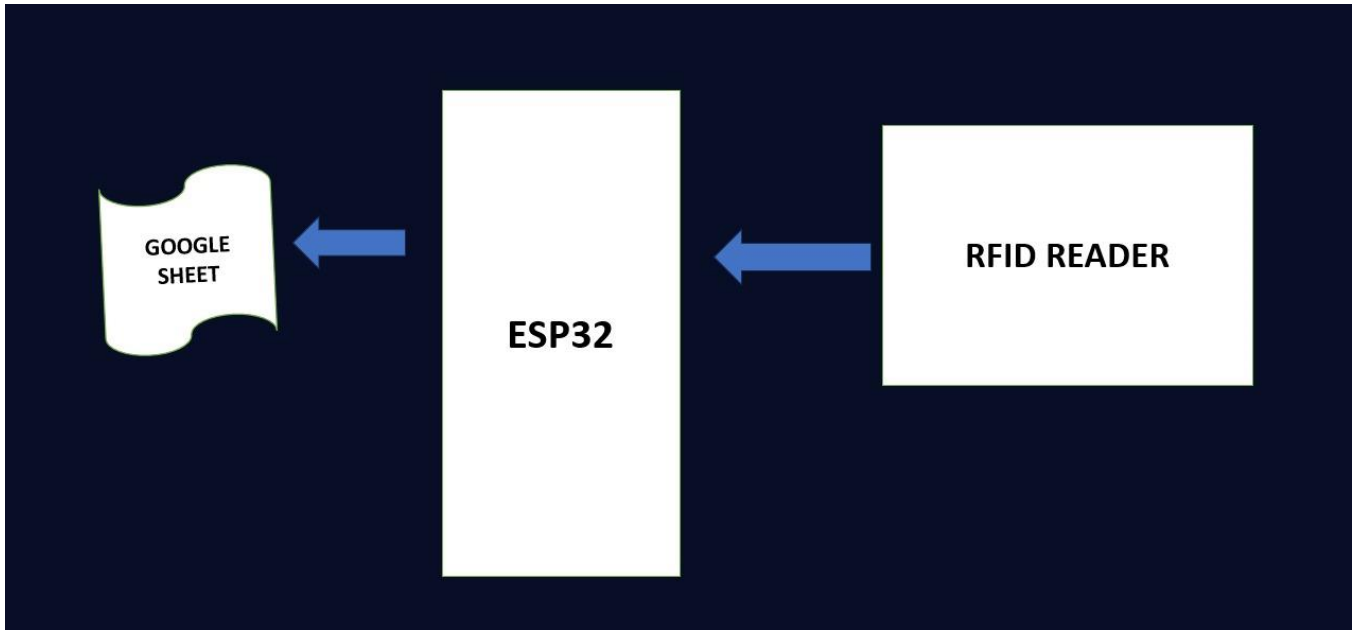
- RFID (Radio Frequency Identification) technology has become increasingly prevalent in various industries for tracking and managing inventory, assets, and personnel. One common application of RFID technology is in tracking items as they move through a supply chain or within a facility. The data collected from RFID tags can provide valuable insights into the movement and status of assets, helping organizations streamline operations and improve efficiency.

Required Components

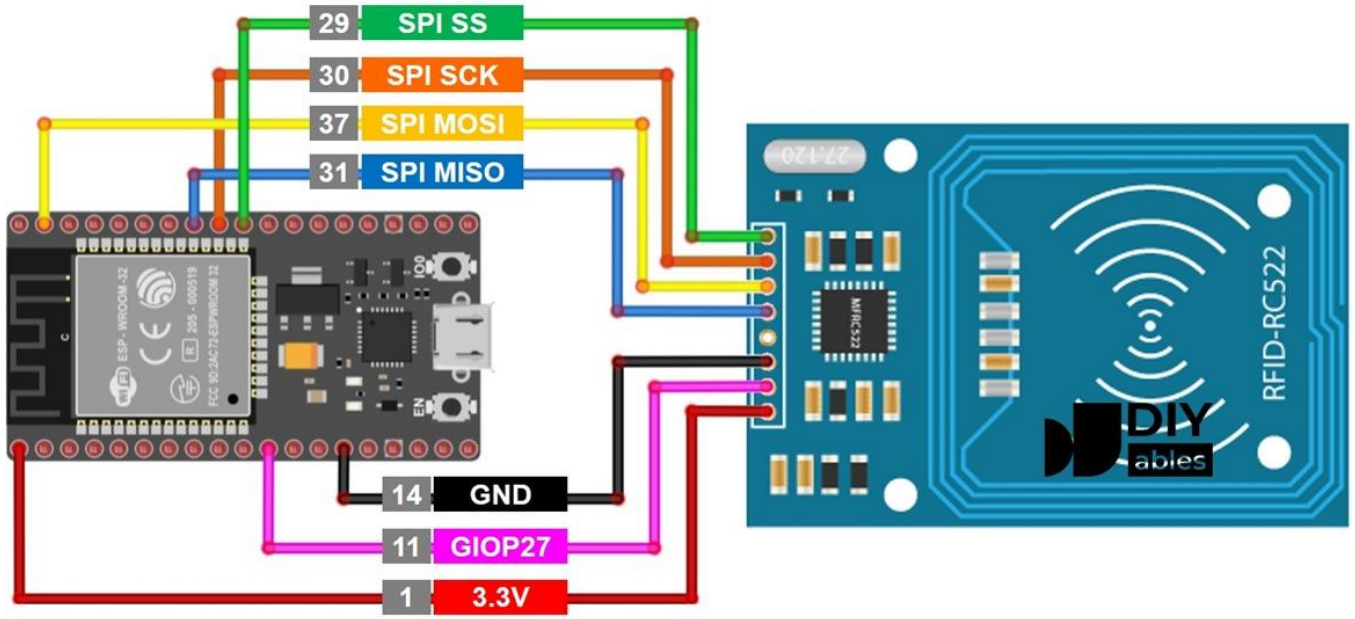
- 1. ESP-32
- 2. RFID
- 3. Bread Board
- 4. Connecting wires
- 5. Cable



Block Diagram



Circuit Diagram



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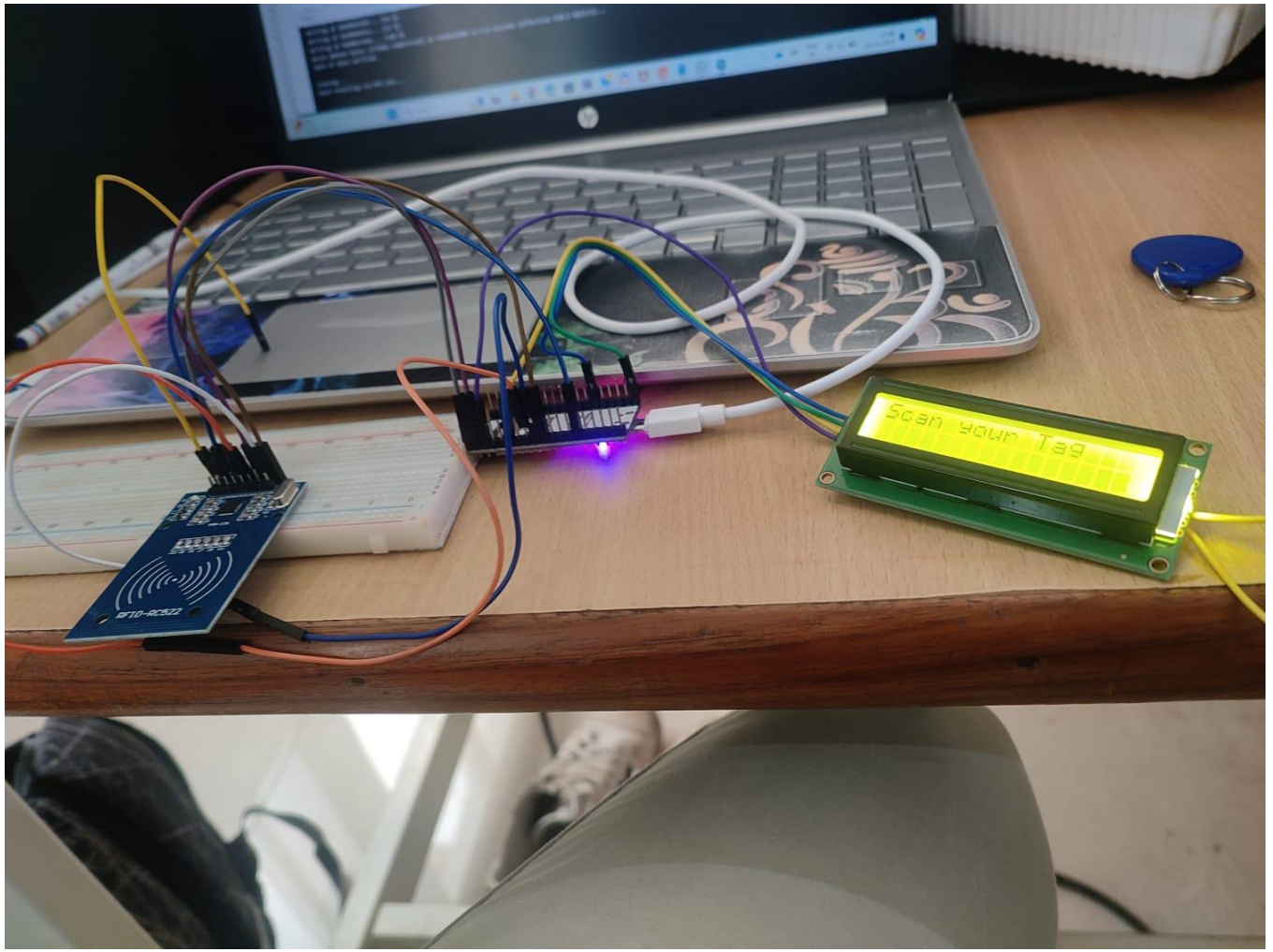


Outcome

- The outcomes of the proposed projects are multifaceted. The attendance Google Sheet system employing ESP32 and RFID technology aims to streamline and automate attendance tracking processes, fostering efficiency and accuracy. The integration of RFID with ESP32 not only facilitates seamless data collection but also demonstrates the convergence of physical and digital realms by updating attendance records in real-time on a Google Sheets platform

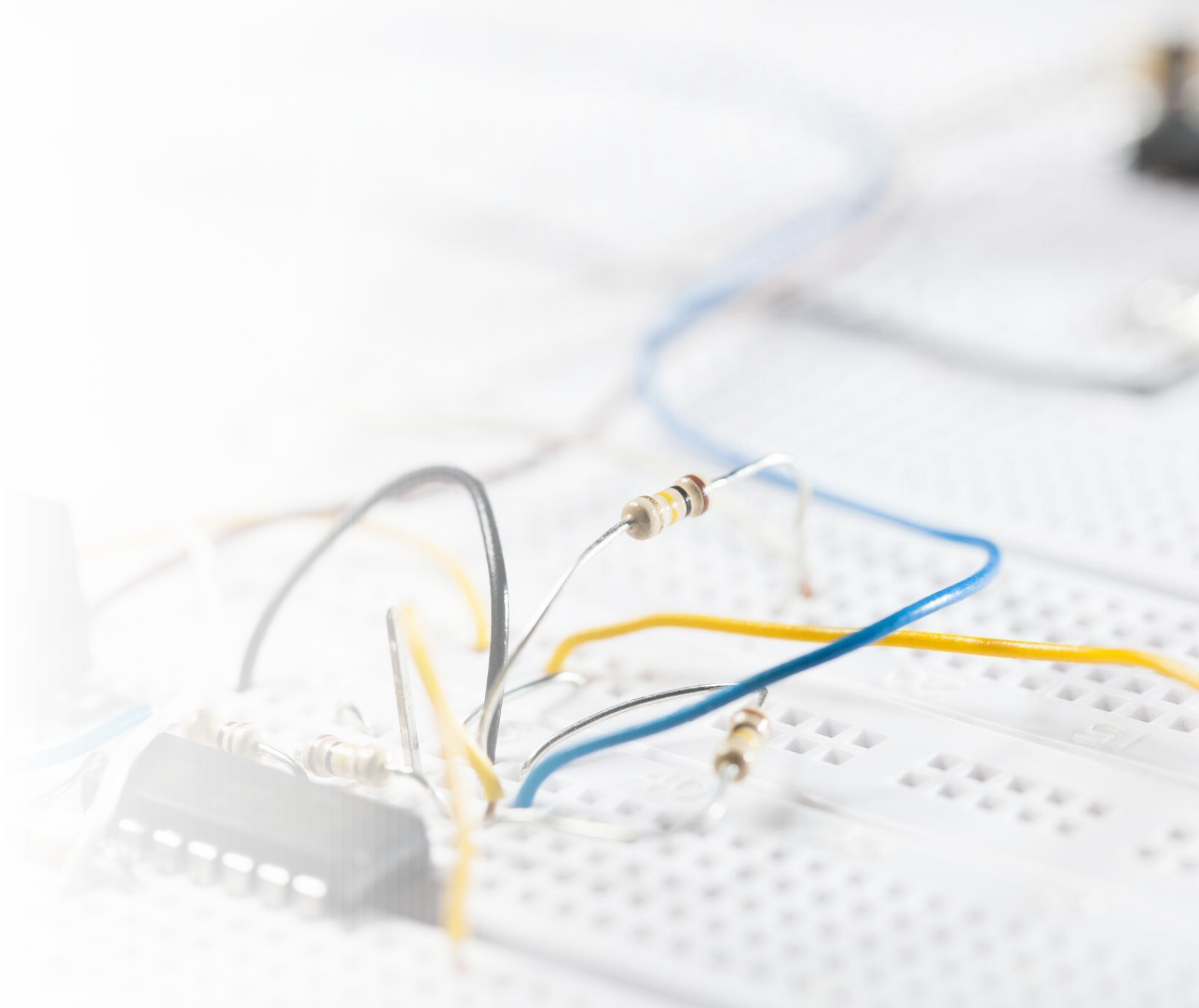
Task 2

INTERRUPT REQUEST BASED ON AUDIO INPUT FROM I2S MICROPHONE

- Interrupt Request (IRQ) based on audio input from an I2S (Inter-IC Sound) microphone is a technique used to trigger interrupts in a microcontroller or digital signal processor (DSP) when audio data is received from an I2S microphone. This approach is commonly employed in applications where real-time audio processing or analysis is required, such as voice recognition, noise detection, or audio recording

Required Components

- 1. ESP-32
- 2. INMP441 Microphone Module
- 3. Push button
- 4. Bread Board
- 5. Connecting wires
- 6. Cable



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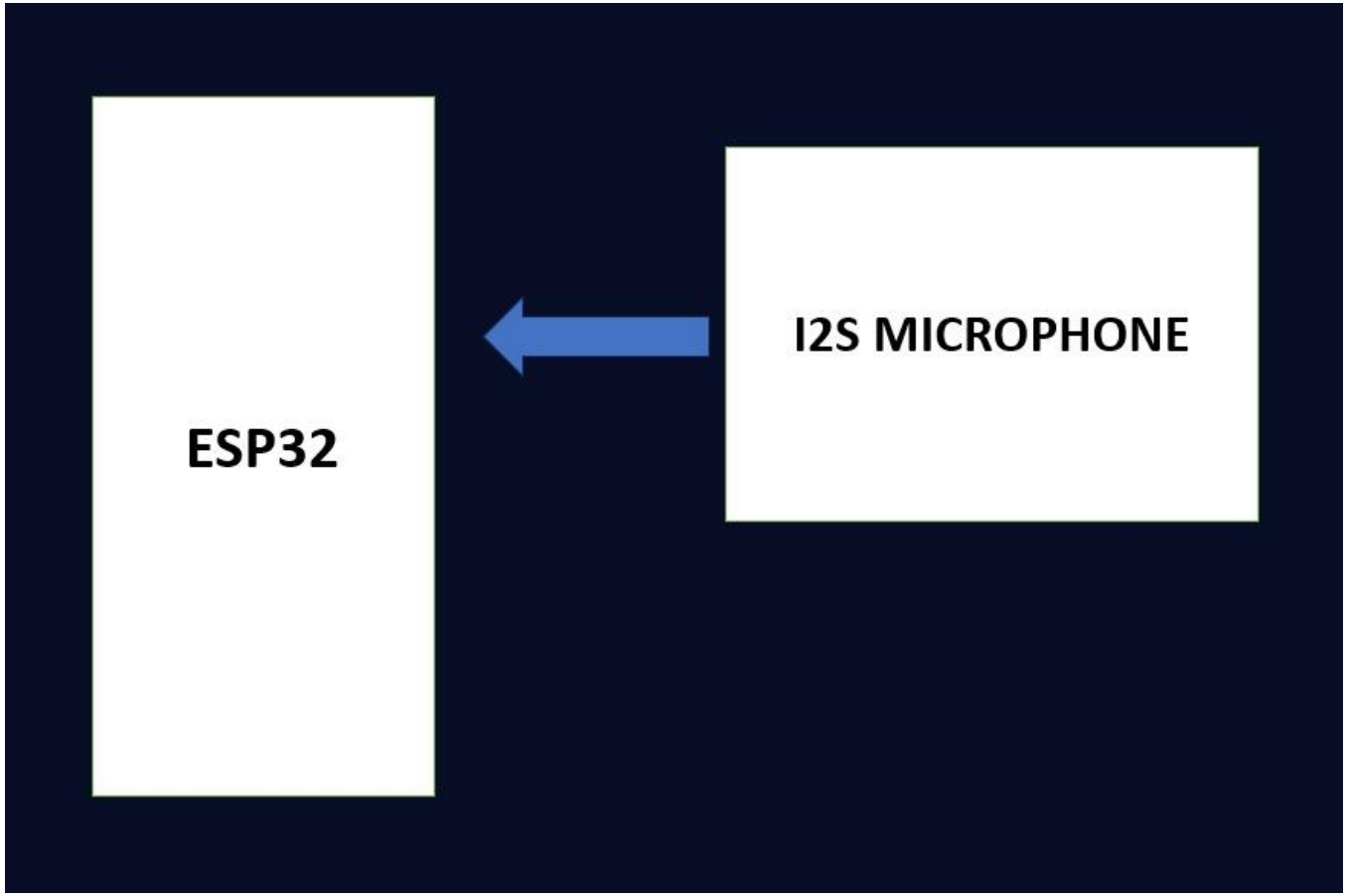

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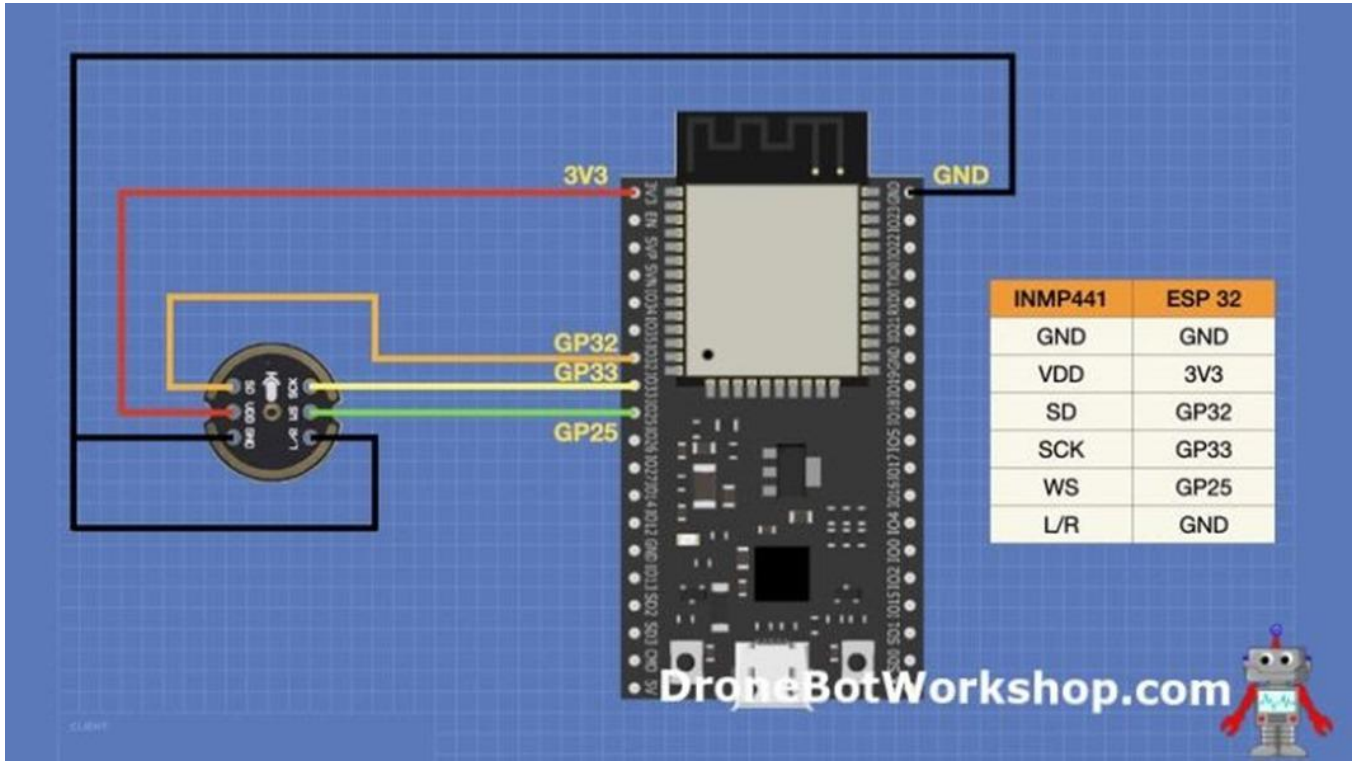

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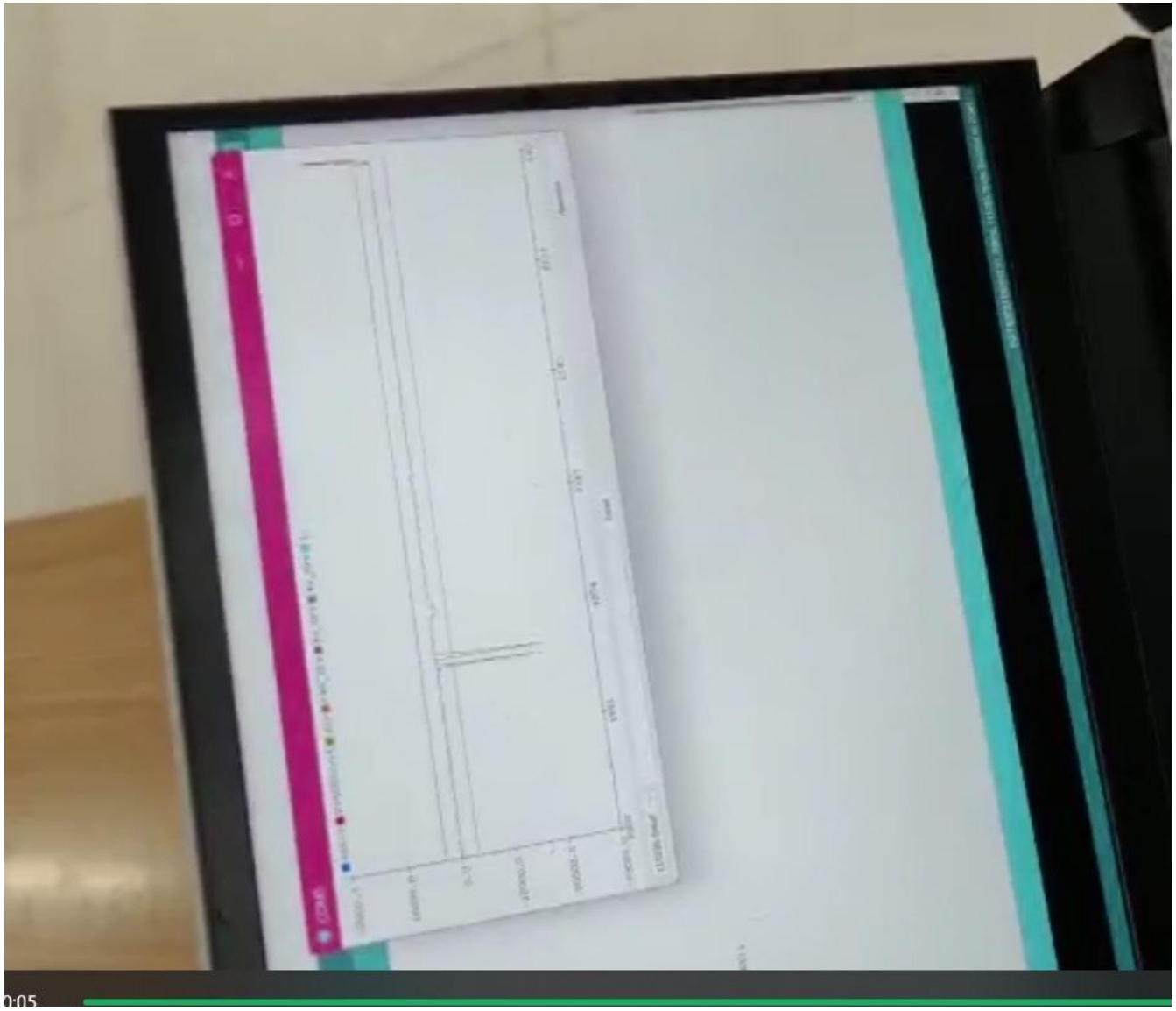


Outcome

- . In the realm of interrupting audio input using I2S from a microphone, the project seeks to offer a versatile solution for applications such as voice recognition and real-time audio processing. By utilizing the I2S interface, the system promises to provide an efficient means of capturing and interrupting audio input, thereby enhancing interactive audio systems.

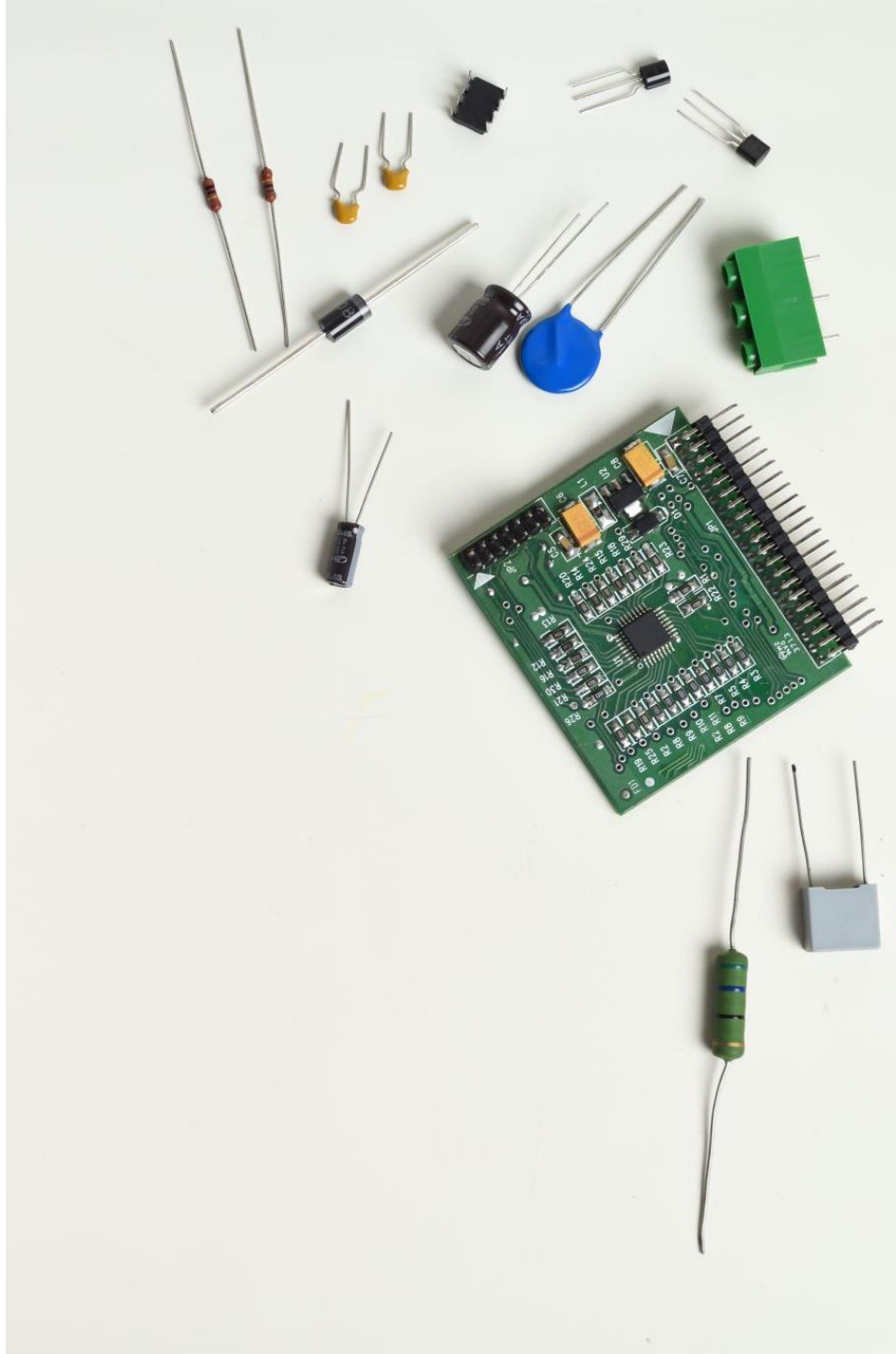
Task 3

Bluetooth Based Home Automation

- Bluetooth-based home automation systems have revolutionized the way we interact with our living spaces, offering convenience, efficiency, and control right at our fingertips. These systems utilize Bluetooth technology to connect various smart devices within the home, allowing users to remotely monitor and manage appliances, lighting, security systems, and more through their smartphones or other Bluetooth-enabled devices.

Required Components

- 1. ESP-32
- 2. Hall Effect sensor
- 3. Touch sensor
- 4. Temperature
- 5. LED
- 6. Resistor



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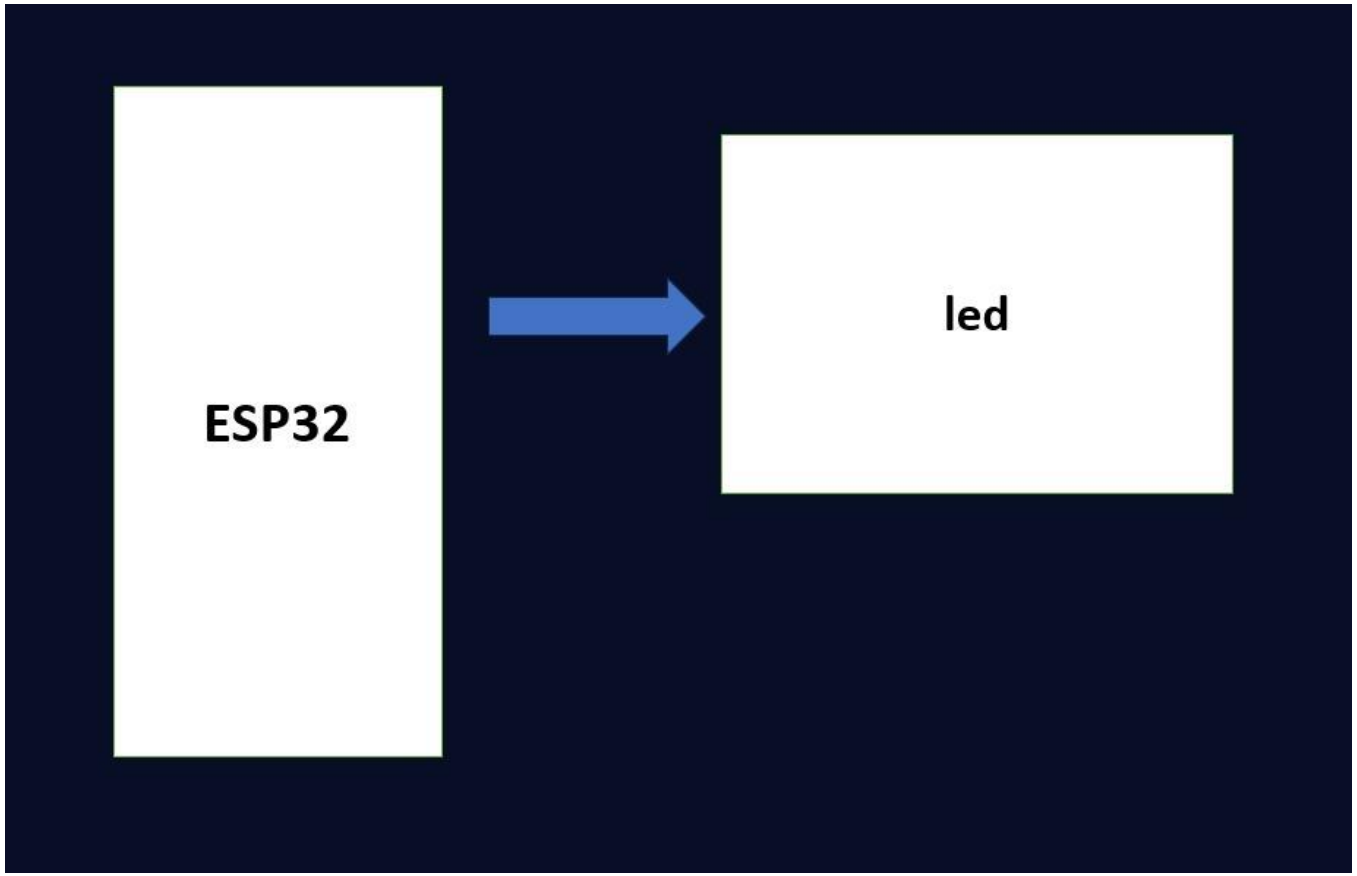

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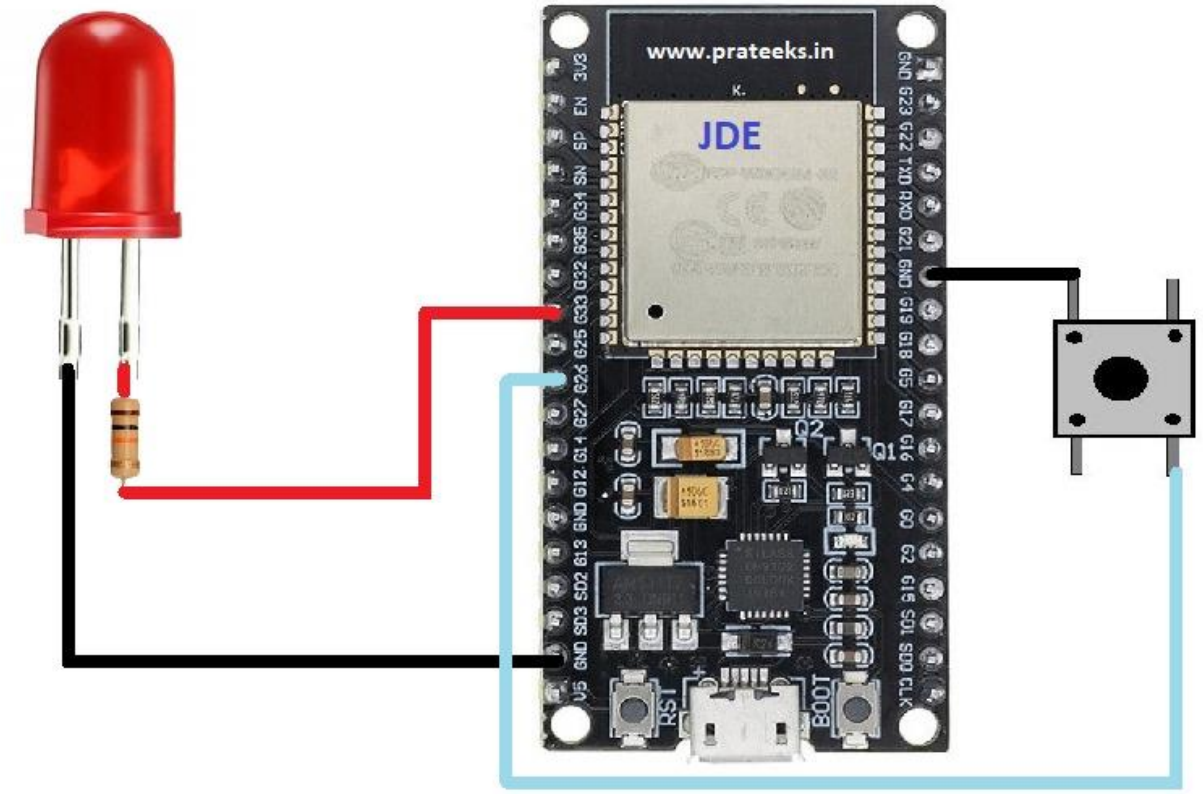

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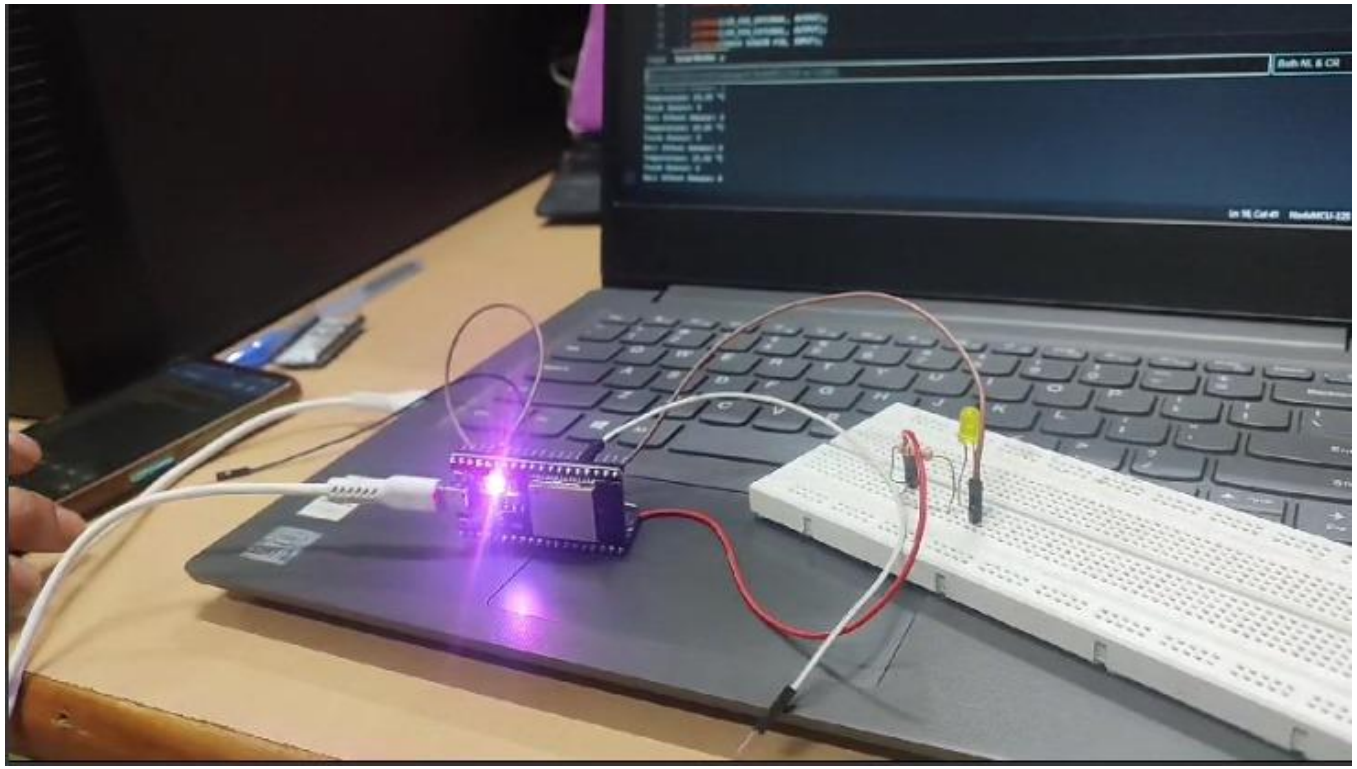


Outcome

- .Additionally, Bluetooth-based home automation and WiFi-based home automation projects aim to revolutionize smart living. The former, by leveraging Bluetooth connectivity, offers users convenient control over home devices through a mobile application, while the latter, relying on WiFi, provides users with remote access and management capabilities for smart home devices from virtually anywhere with an internet connection.

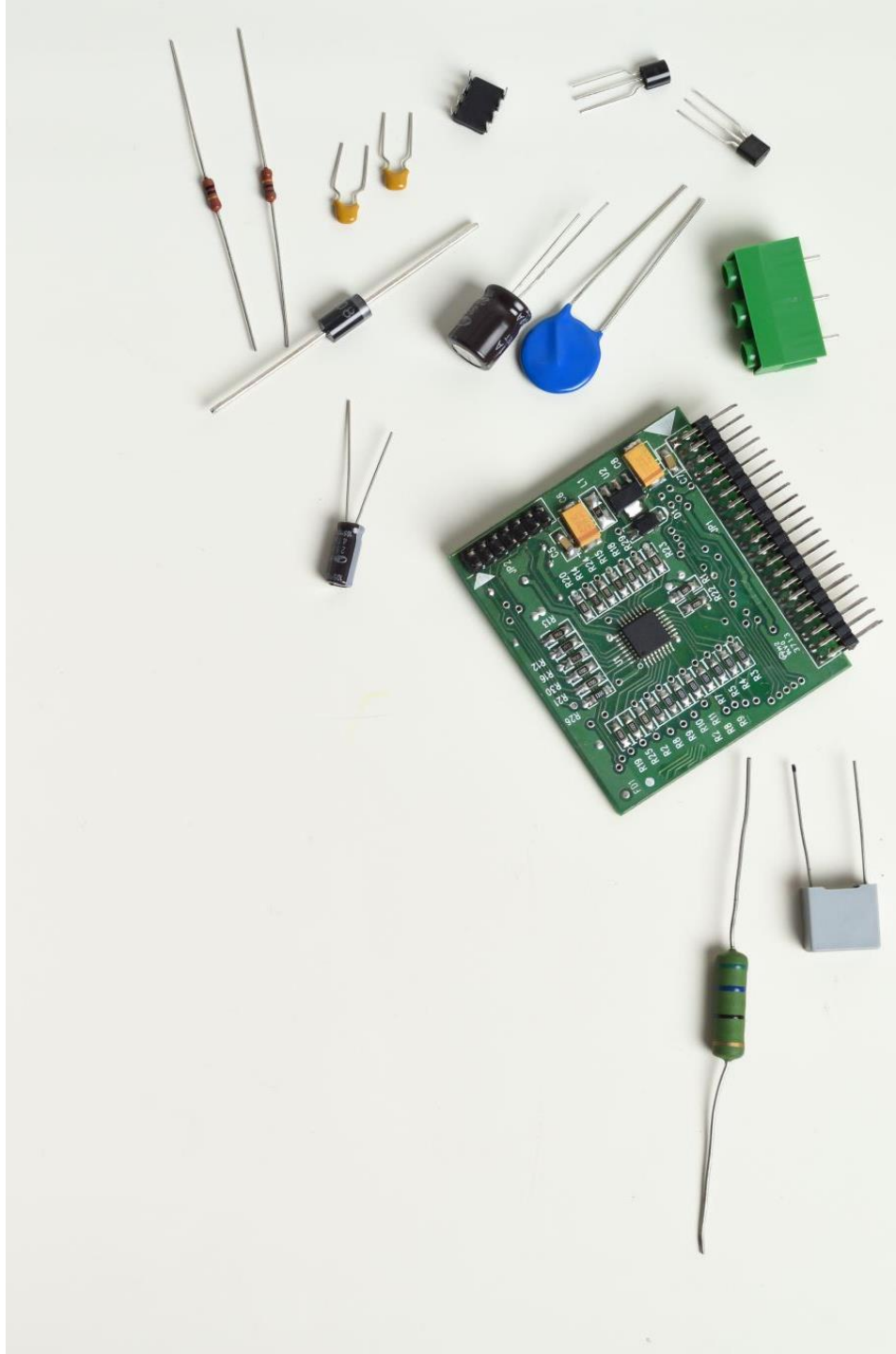
Task 4

WIFI Based Home Automation

- WiFi-based home automation systems have revolutionized the way we interact with our living spaces, offering convenience, efficiency, and control through interconnected smart devices. These systems utilize WiFi technology to connect various appliances, lighting, security systems, and other devices within the home, enabling users to remotely monitor and manage them using their smartphones, tablets, or computers.

Required Components

- 1. ESP-32
- 2. Touch sensor
- 3. Bread Board
- 4. LED-2
- 5. Resistor



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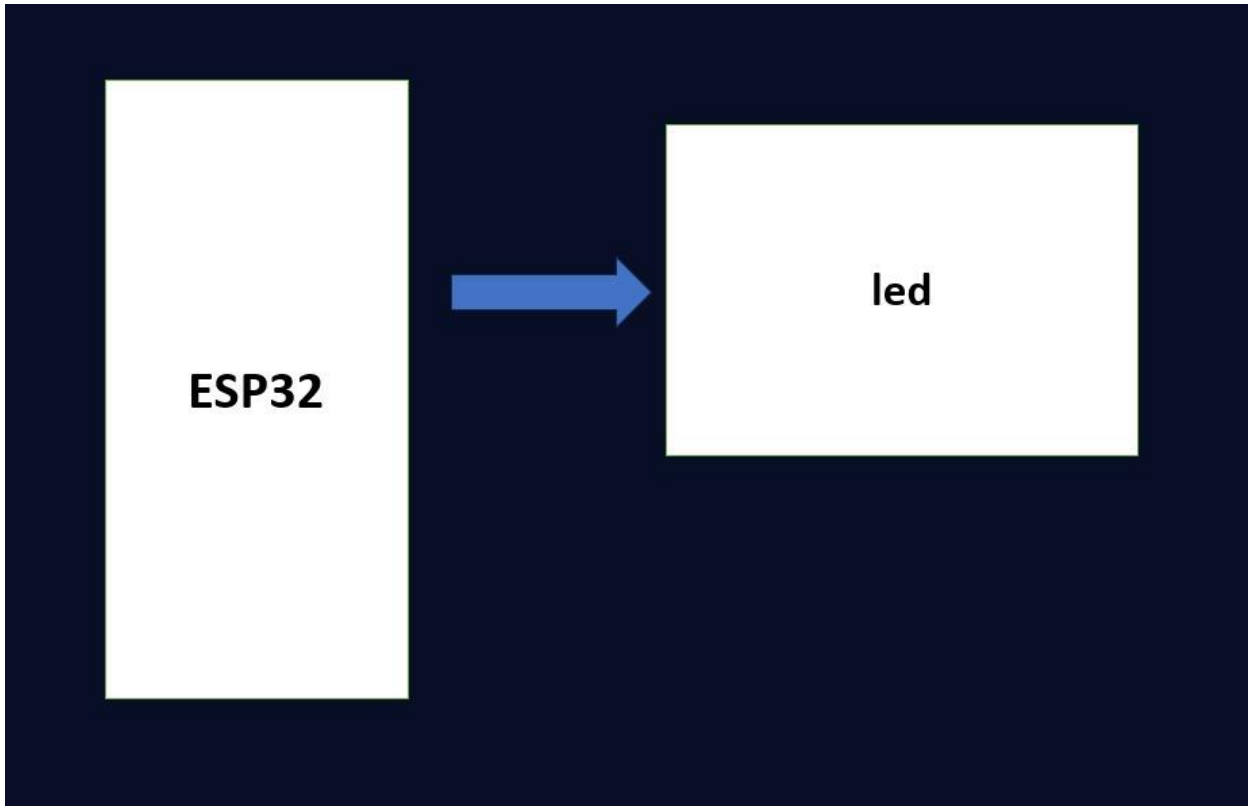

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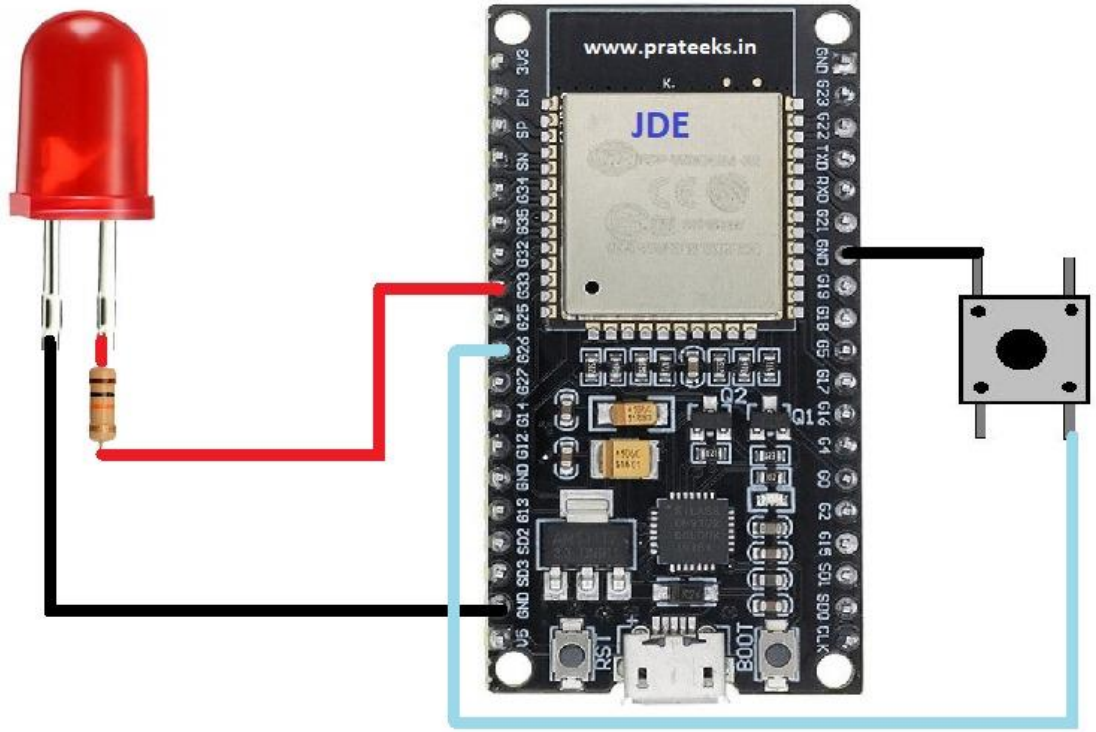

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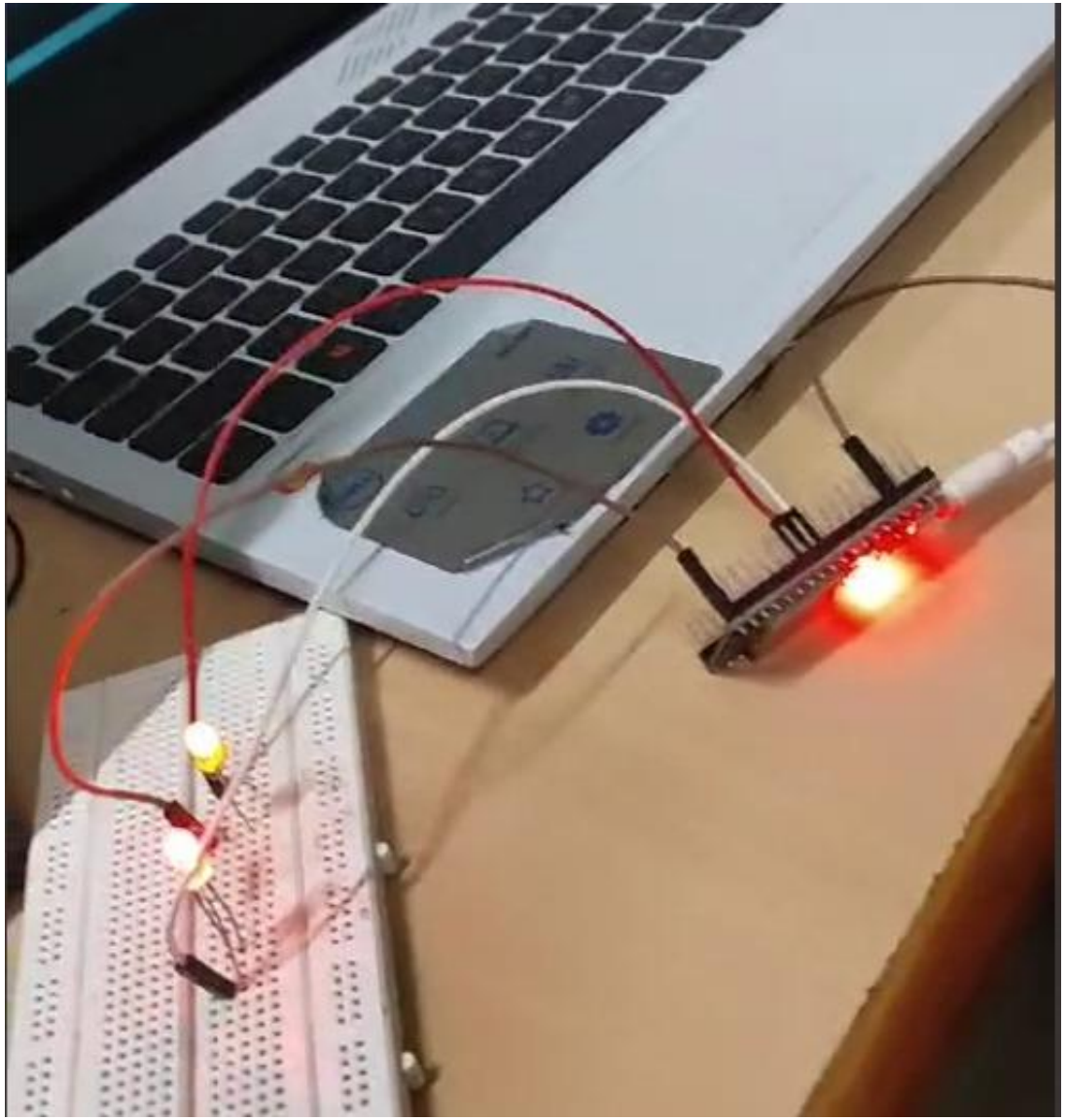

Outcome

- These outcomes collectively showcase advancements in technology, automation, and connectivity, contributing to enhanced user experiences and increased efficiency in various domains.


THANK YOU!