ATHARVA EDUCATIONAL TRUST'S
ATHARVA COLLEGE OF ENGINEERING
**(Approved by AICTE, Recognized by Government of Maharashtra
& Affiliated to University of Mumbai - Estd. 1999 - 2000)
Academic Year 2024-25(ODD SEM)
ISO 2100:2018 ISO 14001:2015 ISO 9001:2015
NAAC Accredited A⁺
Department of Electronics & Telecommunication Engineering**

Second Year Project Presentation	
Group No:	11
Date of Presentation:	16-01-2025
Group Members Names:	Sujanya Sapaliga Jishnu Udyavar Ayush Talkar
Guide's Name :	
Project Title:	Smart Alarm System

INTRODUCTION

- The Smart Alarm System is an innovative device designed to enhance daily routines by combining traditional alarm functionality with modern features like weather forecasts and news updates. It uses an Arduino board as the core to integrate multiple sensors and modules. By leveraging real-time data from APIs, it provides accurate and up-to-date information. This system offers a compact and cost-effective solution for improving productivity and convenience.
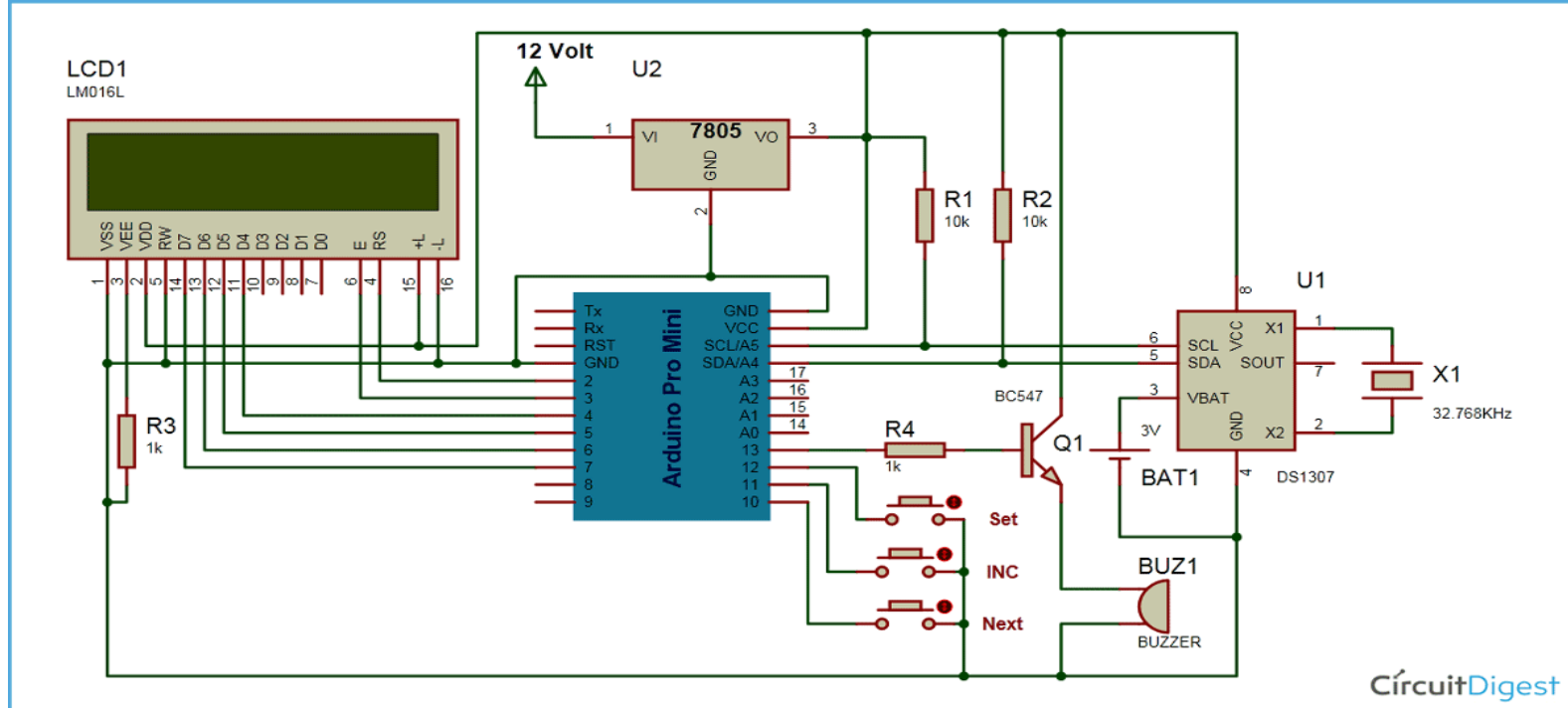
List of Components

- Arduino board
- Real-Time Clock (RTC) module
- Temperature and humidity sensor
- Wi-Fi module
- Buzzer or speaker
- LCD display or OLED screen
- Push buttons
- Power supply
- Connecting wires, breadboard, or PCB

What is Arduino?

Arduino is an open-source microcontroller platform used for creating electronic projects. It is compact, programmable, and allows for the integration of various sensors and actuators to automate tasks. In this project, Arduino processes data from the PIR sensor to detect motion and triggers the alarm. Its simplicity and versatility make it ideal for beginners and professionals alike. Arduino helps bridge theoretical knowledge with practical applications in electronics and automation.

CIRCUIT DIAGRAM

Applications

- **Home Automation:** Helps users organize their day efficiently.
- **Education:** A practical project for learning about IoT and microcontrollers.
- **Workplaces:** Ensures timely reminders with current updates.
- **Travel Assistance:** Can provide localized weather forecasts.

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Guide's Name :	
Project Title:	Electric Meter

INTRODUCTION

The Electric Meter is a smart energy monitoring system designed to measure and display real-time electricity consumption. Using the ESP32 WiFi module, it connects to a mobile app, providing users with remote access to power usage data. It employs a combination of sensors to monitor voltage and current accurately, and the data is displayed on an LCD screen.

List of Components

- ESP32 WiFi module
- AC voltage sensor module
- Non-invasive AC current sensor
- LCD display
- Potentiometer
- Resistors
- Capacitors
- Connecting wires

What is ESP 32?

The ESP 32 serves as the core of the electric meter by processing data from the voltage and current sensors to calculate power usage. Its built-in Wi-Fi enables connectivity to a mobile app, allowing remote monitoring of electricity consumption. It ensures real-time data transmission for instant updates on usage. Additionally, the ESP32 can integrate with IoT systems for automation and smart energy management.

CIRCUIT DIAGRAM
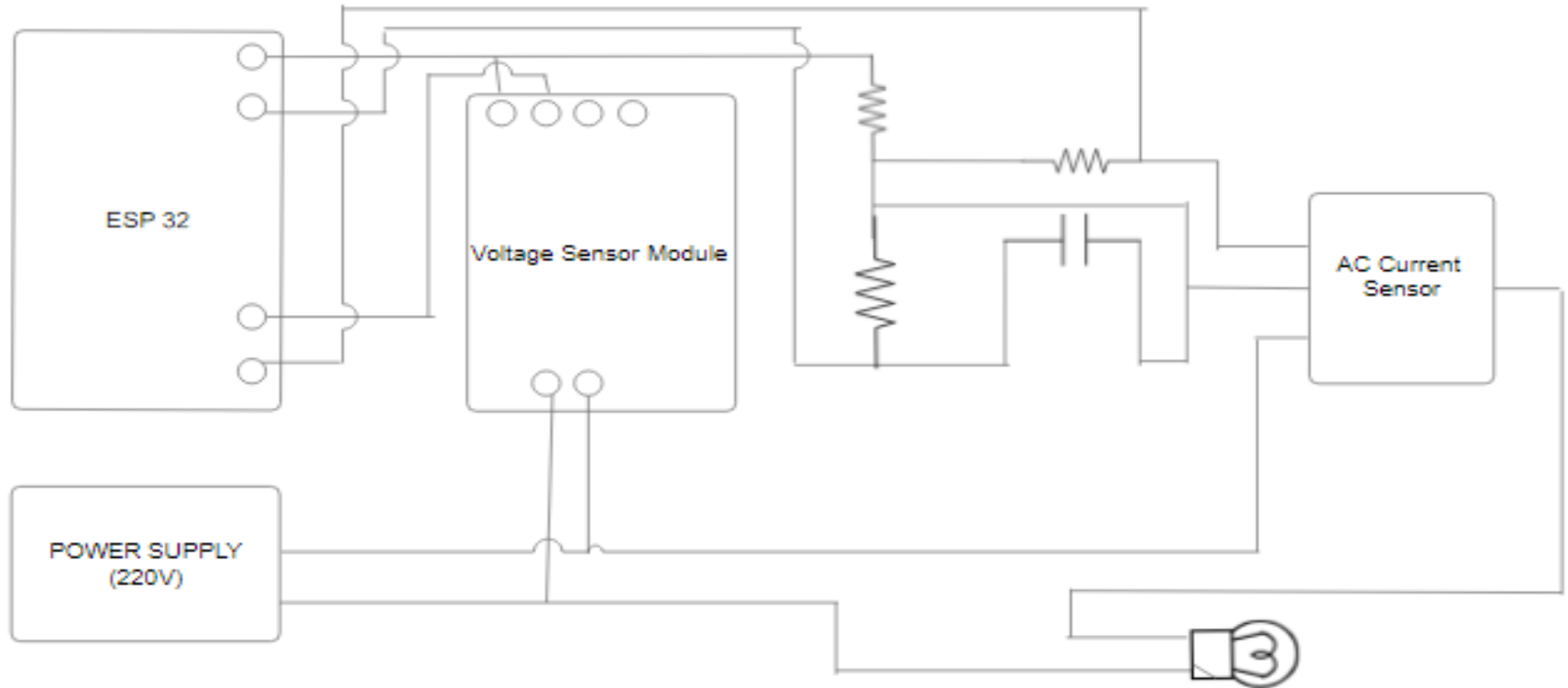
Applications

- **Residential Use:** Track electricity consumption and identify high-usage appliances.
- **Industrial Monitoring:** Monitor and optimize power usage in factories.
- **Smart Grids:** Integrate with larger energy management systems for enhanced control.
- **Educational Purposes:** Demonstrates the use of IoT in energy monitoring.

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Guide's Name :	
Project Title:	Smart Energy Saving Power Strip

INTRODUCTION

The Smart Energy Power Saving Strip is an Arduino-based extension cable designed to optimize energy consumption. It allows users to control electricity flow and monitor voltage levels in real time. The RGB indicator provides a visual cue for voltage status, with red signaling high voltage and green signaling low voltage. This innovative design promotes energy conservation and safety.

List of Components

- Arduino board
- Relay module
- Voltage sensor module
- RGB LED
- Power outlets
- Push buttons
- Power supply
- Connecting wires, breadboard, or PCB

What is Arduino?

Arduino is an open-source microcontroller platform used for creating electronic projects. It is compact, programmable, and allows for the integration of various sensors and actuators to automate tasks. In this project, Arduino processes data from the PIR sensor to detect motion and triggers the alarm. Its simplicity and versatility make it ideal for beginners and professionals alike. Arduino helps bridge theoretical knowledge with practical applications in electronics and automation.

CIRCUIT DIAGRAM

Applications

- **Home Automation:** Helps households save energy by monitoring and controlling power usage.
- **Workplaces:** Prevents energy wastage from idle electronics.
- **Industrial Use:** Monitors voltage levels to protect sensitive equipment.
- **Safety:** Alerts users about unsafe voltage conditions