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(Approved by A.I.C.T.E. & Affiliated to J.N.T.U Kakinada)
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Department of Electrical and Electronics Engineering

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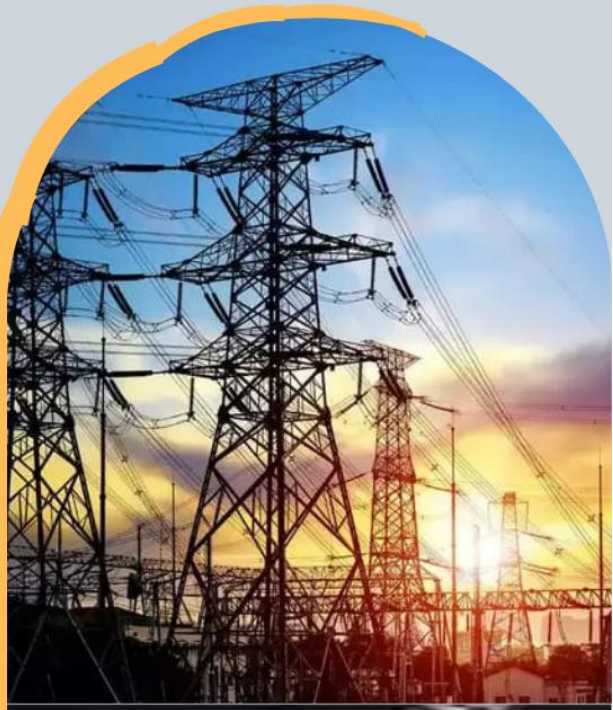

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VISIONANDMISSIONOFTHEDEPARTMENT

VISION:

ToberecognizedasaCentreofExcellence inthe fieldofEducationandResearchso as to produce Competent & Ethical Engineers capable enough to contribute to the society.

MISSION:

- Todevelopinnovative,efficientandproficientelectricalengineers.
- To keepthecurriculum industryfriendly,withdueregardtotheUniversity curriculum.
- Tobeaplaceforinnovativeblendedlearningandentrepreneurshipdevelopmentin multidisciplinary areas.
- To promoteethicaland moralvaluesamongthestudentsso astomakethememerge as responsible professionals.

PROGRAMEDUCATIONALOBJECTIVES(PEO's)

PEO1: ToproduceElectricalandElectronicsEngineeringgraduateswhohavestrong foundation in Mathematics, Sciences and Basic Engineering

PEO2: Toprovide intensivetraining inproblemsolving, laboratoryskillsanddesignskills to use modern engineering tools through higher education and research.

PEO3: Ability to pursue higher studies and to seek employment in a variety of engineering technology positions and work successfully in their chosen career aspirations and generate entrepreneurs.

PEO4: Toinculcateinstudentsprofessionalandethicalattitude,effectivecommunication skills, teamwork skills, multidisciplinary approach, and an ability to relate engineering issues to broader social context through life-long learning.

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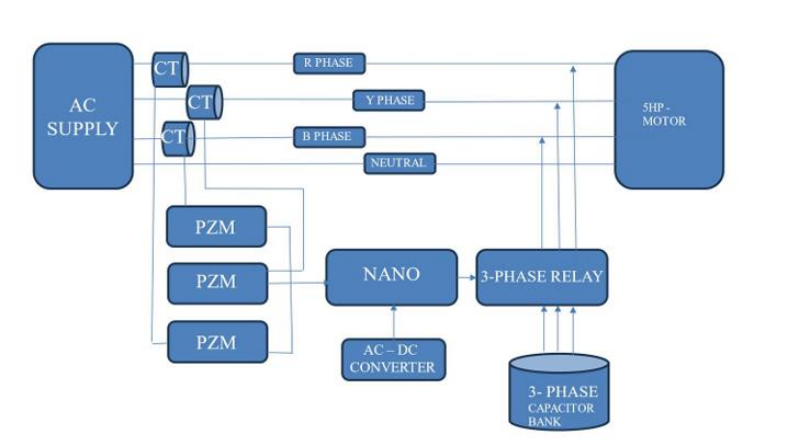
1. AUTOMATICPOWERFACTORCORRECTIONUSINGIOT

M.Sachin, B. Venkata Ram, Gopal Sai, Ch. Adhinadh,D. Raghu Ram
B. Hari
SUPERVISOR: Mr.B.N.CH.V.Chakravarthi, M.Tech.

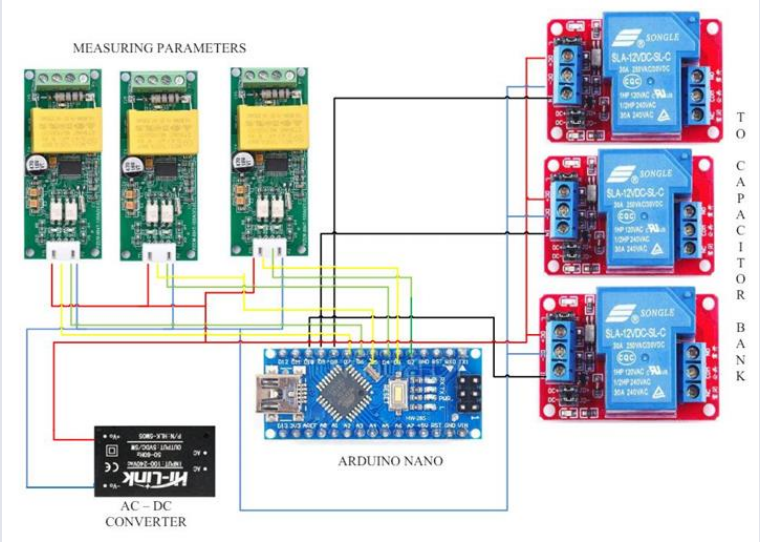
Objectiveoftheproject:

The presence of the reactive power in the electrical systems can lead to a range of undesirable effects, such as increased current draw, greater losses, higher maintenance costs, and reduced power stability. To address these issues, we have designed and built a scaled prototype of a reactive power management and control system, equipped with live data monitoring and real-time visualization capabilities. Byusing PZEM-004TV30sensors and embedded systems, we are able to measure various parameters, including voltage, current, frequency, power factor, active power, reactive power, apparent power, active energy, and apparent energy in all three phases of the electrical system. The collected sensor data can remotely monitor and control different aspects of reactive power and power factor, and switch capacitor banks as needed. The entire prototype was developed using the Arduino IDE, which provides a flexible and customizable platform for designing and testing the system. Overall, our reactive power management prototype represents a useful and innovative solution that has the potential to improve the efficiency and stability of electrical systems

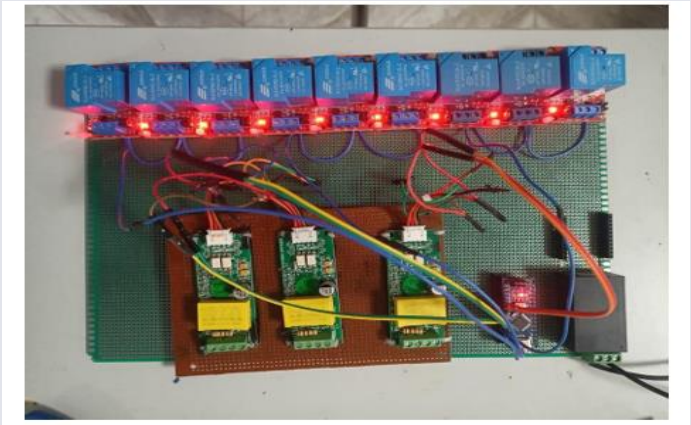
BLOCKDIAGRAM OF POWER MANAGEMENT SYSTEM:



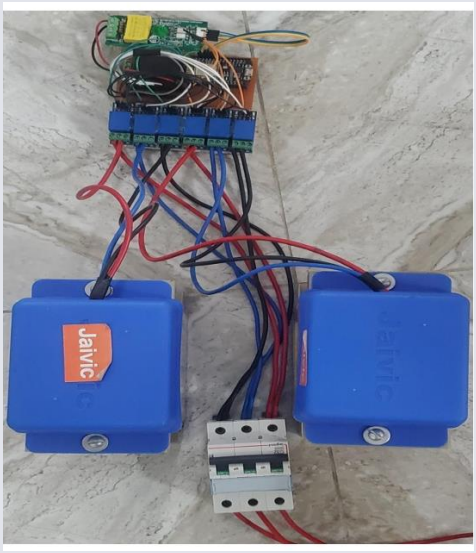
PCBCIRCUITDIAGRAM:



PCB HARD WAREKIT:



HARDWARE DIAGRAM OF COMPLETE CIRCUIT:



CONCLUSION:

In conclusion, Power management systems play a crucial role in ensuring the stability and efficiency of the electrical grid. By regulating reactive power flow, these systems can improve power quality, reduce losses, and increase energy efficiency. With advances in technology, including AI, machine learning, and advanced monitoring and control systems, power management systems will continue to evolve and become even more effective. Additionally, as renewable energy sources become more prevalent and the demand for clean energy increases, power management systems will play an increasingly important role in integrating these energy sources into the grid. Overall, the future of power management systems is promising, and they will continue to be an essential component of the modern electrical grid

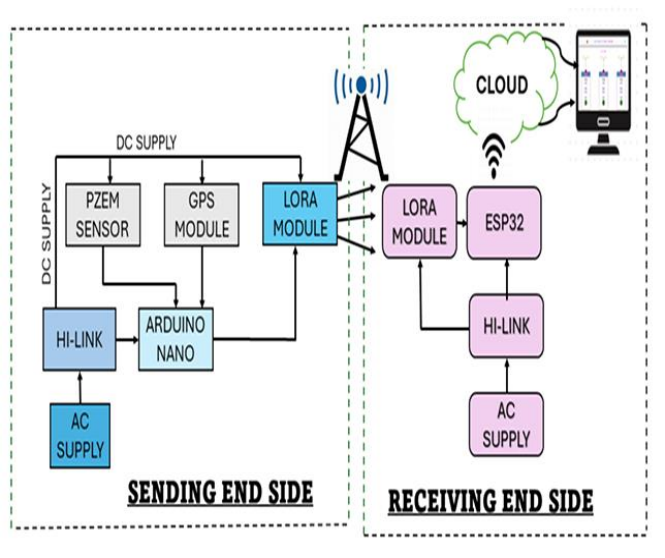
2 CENTRALIZED MONITORING SYSTEM FOR STREET LIGHT FAULT DETECTION AND LOCATION TRACKING

K. VISWAS REDDY, A. APPARAO ,G. NIKHIL, G. PRAVEEN ,
J. NITEESH KUMAR
SUPERVISOR: Dr. S. PRAGASPATHY, M.E., Ph.D.,

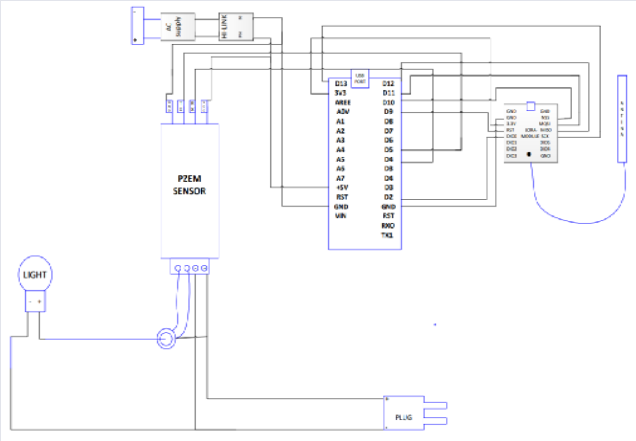
Objectiveoftheproject:

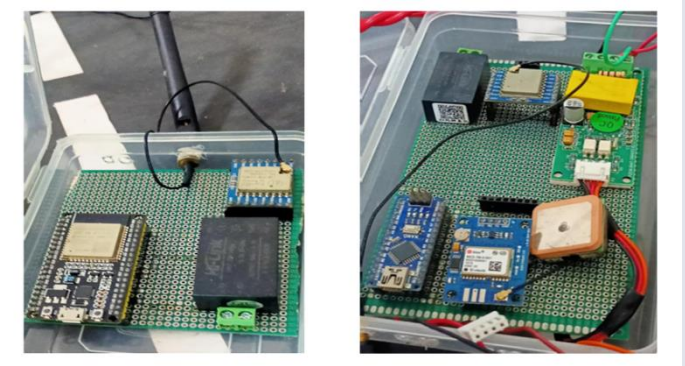
Electricity is the critical need for progress of the livelihood. In many Indian cities, the maintenance of streetlights has become a challenging and inefficient process due to the lack of a centralized monitoring system. Identifying faults, such as non- functioning lights and cable breakage, relies on citizen grievances, leading to delays, increased costs, and safety concerns. Linemen spend valuable time manually searching for faults, diagnosing issues, and fixing them, which can take several days to complete. The absence of precise fault location information further complicates the process. To overcome these obstacles, to give innovative solution that provides real time fault detection, accurate identification of fault types, and precise location tracking of faulty streetlights. This solution aims to empower linemen with efficient fault management capabilities, reducing their workload and ensuring timely maintenance. Moreover, it should enable the local authorities to proactively address faults, enhance service quality, and optimize street light maintenance processes in their respective cities. Consequently, linemen are burdened with the arduous task of manually scouring for faults, diagnosing issues, and rectifying them a process that often spans several days.

BLOCK DIAGRAM OF STREET LIGHT FAULT DETECTION AND LOCATION TRACKING:



CIRCUIT DIAGRAM & RECEIVER AND TRANSMITTER KIT:





CONCLUSION:

In conclusion, the implementation of our monitoring system for street light fault detection and location tracking marks a significant milestone in the realm of urban infrastructure management. By harnessing the capabilities of state-of-the-art components such as HI Link, Arduino, PZEM sensor, and GPS tracker, we have engineered a comprehensive and robust solution designed to revolutionize the way street light maintenance is conducted. Through meticulous design and integration, our system not only detects non-functioning streetlamps in real-time but also provides precise location data, thereby saving invaluable time for linemen and streamlining the fault identification and resolution process. This efficient utilization of technology translates into tangible benefits for both operational efficiency and public safety. By empowering linemen with the necessary tools and insights to expedite maintenance interventions, our project contributes to a safer, more sustainable urban environment while also ensuring minimal service disruptions for residents. Furthermore, our commitment to leveraging technology for social good underscores our dedication to improving the quality of life for communities across diverse urban landscapes. As we reflect on the achievements of our project, we recognize its potential to serve as a catalyst for continued innovation and collaboration in infrastructure management, thereby paving the way towards a brighter, more resilient future for all stakeholders involved. Through ongoing refinement and adaptation, we remain steadfast in our pursuit of excellence, committed to realizing the full potential of our monitoring system to address the evolving needs of urban environments and enhance the well-being of those who call them home.

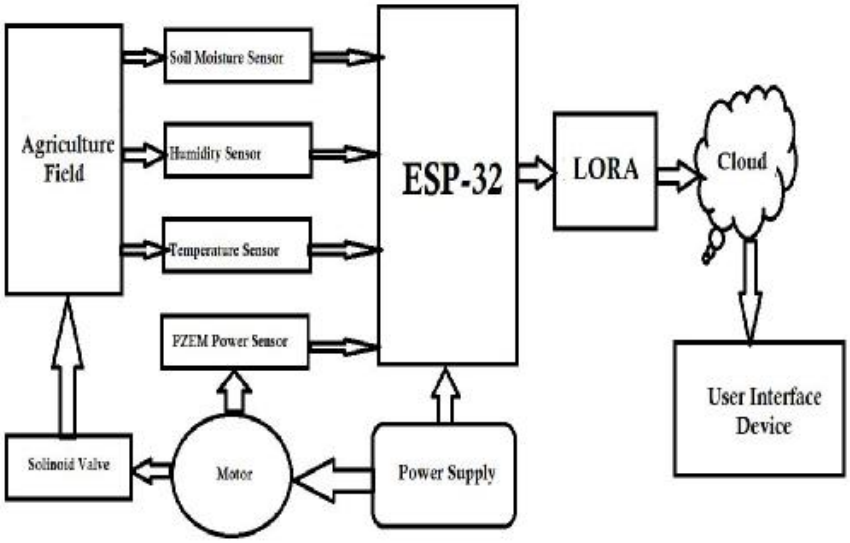
3. REAL-TIMEPRECISIONIRRIGATIONSYSTEMFOR OPTIMALCROPYIELDANDWATERCONSERVATION

K.Rohi Kumar K.Naga Deepak, D.Satish ,G.Balaji Ravi Kumar ,D.Dinesh Varma
SUPERVISOR: Mrs.I.V.V.Vijetha , M.Tech.(Ph.D).

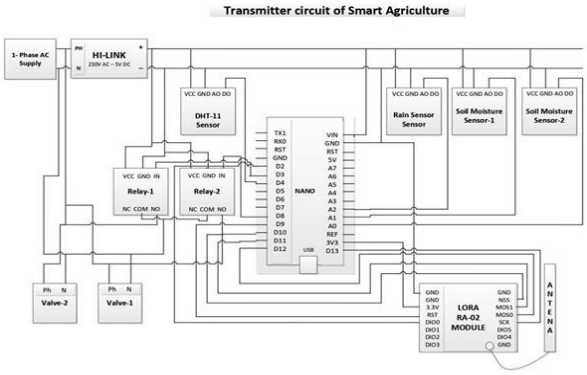
Objectiveoftheproject:

In contemporary farming, efficient water management plays a crucial role in achieving optimal crop yields, endorsing water conservation, and upholding ecological balance.
Current irrigation systems often lack precision, resulting in water wastage, suboptimal plant growth, and environmental degradation. This issue is pronounced evident in piped and micro irrigation networks, where manual control fails to adapt to fluctuating soil moisture conditions. This inconsistency in water distribution negatively affects agricultural yield and water conservation efforts. The core problem is the absence of an automated mechanism to regulate water release based on real-time soil moisture and centralized monitoring system. To tackle this, we've developed a real-time unified monitoring platform for automatic regulation of water release valves. Through the integration of soil moisture sensors, monitoring systems, and decision making processes, our solution addresses the gap between water supply and crop demand, enhancing resource utilization and minimizing environmental impact. The amalgamation of instantaneous soil moisture information from various sensors into a centralized dashboard demands robust mechanisms for data collection, transmission, and processing. This real-time model, which unequivocally scrutinizes soil moisture data and associated parameters, significantly contributes to informed decisions concerning the timing and volume of water release.

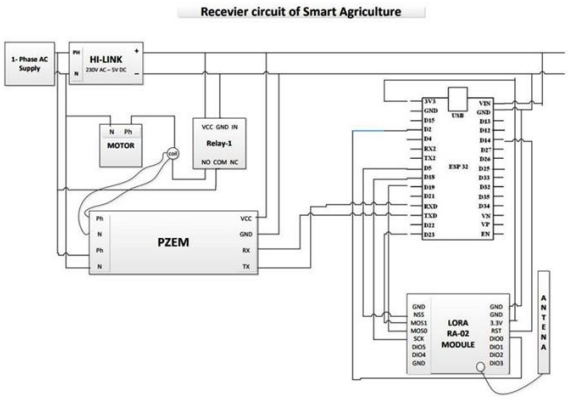
BLOCK DIAGRAM OF REAL-TIME PRECISION IRRIGATION SYSTEM FOR OPTIMAL CROP YIELD AND



CIRCUIT DIAGRAM:

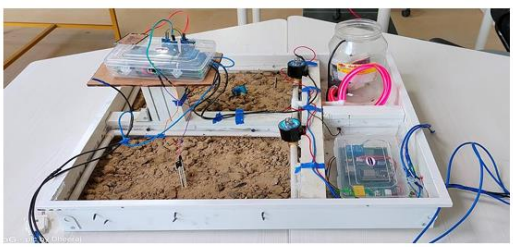


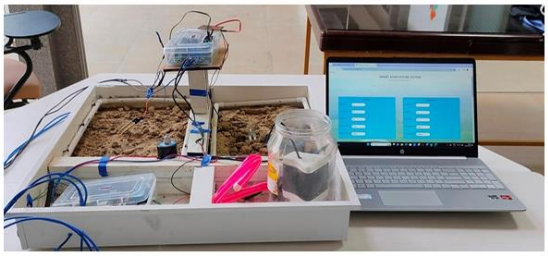
(a) Circuit diagram of Transmitter Circuit



(b) Circuit Diagram of Receiver Circuit

HARDWARE DIAGRAM:





CONCLUSION:

In conclusion, Our smart irrigation system's deployment provides a simple to utilize and affordable way to maximize agricultural water utilization. It significantly enhances the sustainability of farming techniques and has a greater impact in areas where water is sparse. For organic crop production, the integration of a solenoid valve is very important since it ensures accurate watering. The automation of this system significantly lowers labor costs and saves time, making it a financially viable solution for contemporary agriculture. All things considered, this invention is a significant advancement toward ecologically conscious and resource-efficient farming. the development of a Real-Time Precision Irrigation System for Optimal Crop Yield and Water Conservation using the Internet of Things technology is leads to more efficient water distribution, ensuring that crops receive the required amount of water precisely when needed. This efficiency reduces water wastage and promotes sustainable agricultural practices. By providing crops with precise amounts of water tailored to their specific needs, the system enhances overall crop yield. This is achieved through timely irrigation adjustments based on real-time data, resulting in healthier plants and increased productivity. The project emphasizes the importance of conserving water resources, particularly in regions facing water scarcity or drought conditions. By utilizing advanced technology to optimize water usage, the system contributes to the conservation of this vital resource for future generations. Efficient water management translates into cost savings for farmers, as they can reduce water consumption and associated expenses such as energy costs for pumping and irrigation infrastructure maintenance. This economic benefit further incentivizes the adoption of precision irrigation systems.. The project underscores the role of precision irrigation in promoting environmental sustainability by minimizing the environmental impact of agricultural practices. By reducing water runoff, soil erosion, and nutrient leaching, the system helps preserve soil health and water quality

4. IOT-BASED BABY INCUBATOR MONITORING & ALERTING SYSTEM

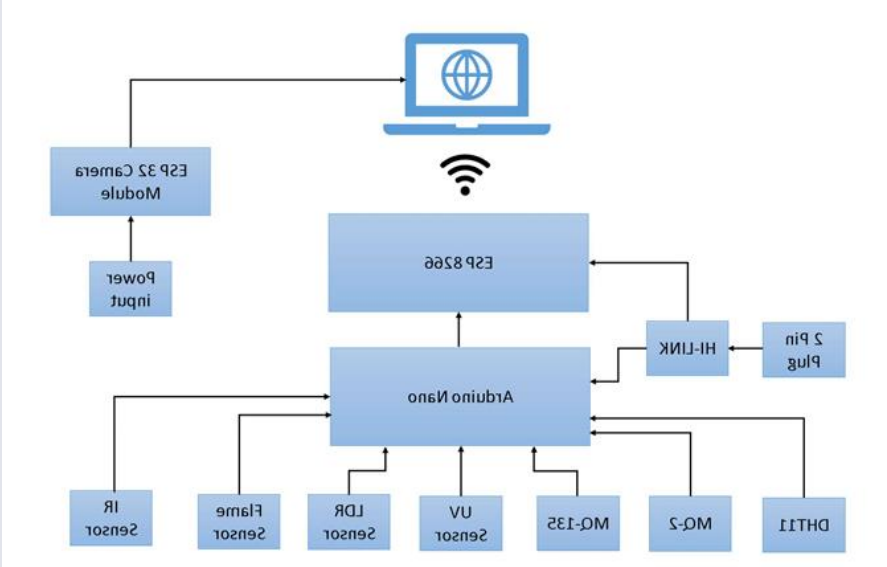
K. JAYA SURYA, G. ROHITHA RAJ, K. DURGESH, K. SRI RAM KOTI ,
K. HARISH SATTI REDDY

SUPERVISOR: MRS. K. BHANUPRIYA, M. Tech

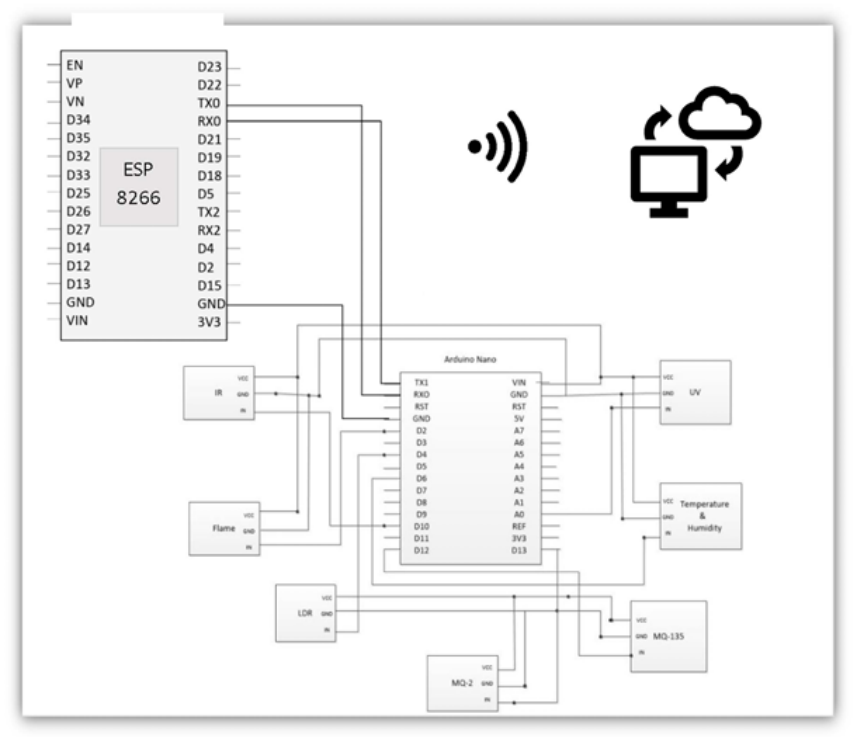
OBJECTIVEOFTHEPROJECT:

It can be easy to think of an incubator as just a bed for a sick baby, but it's so much more than a place for sleeping. An incubator is designed with such techniques and care that it can provide a safe and sound atmosphere for a newborn baby to rest until its vital organs are still in a development stage. Our main goal is to make a smart baby incubator that can detect baby's condition and in case anything goes wrong, the system can trip itself so that the conditions can return to a normal state. We will integrate it with IoT and a mobile app so that doctors can check the baby's condition remotely.

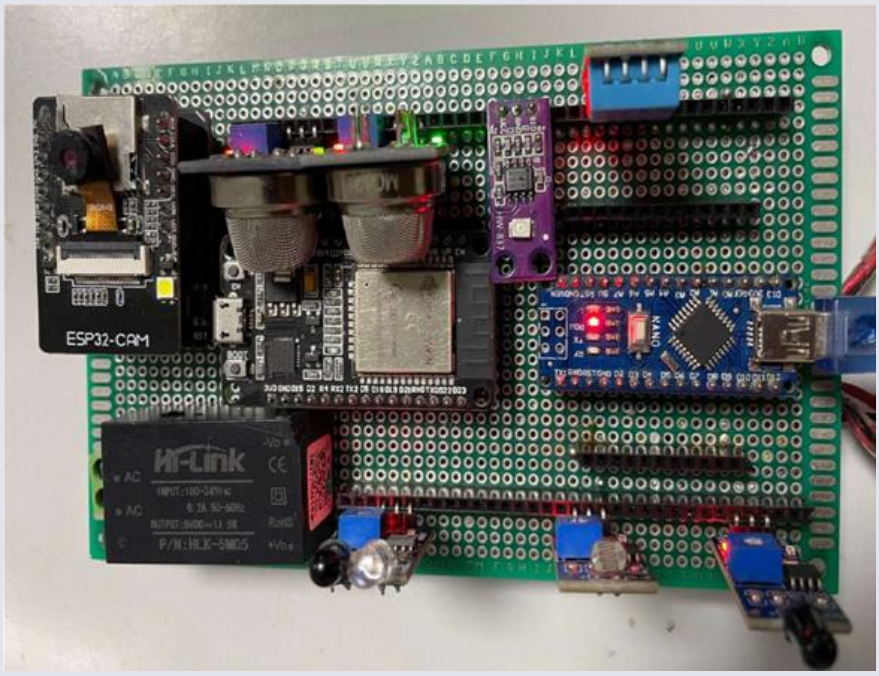
BLOCK DIAGRAM OF INCUBATOR MONITORING & ALERTING SYSTEM:

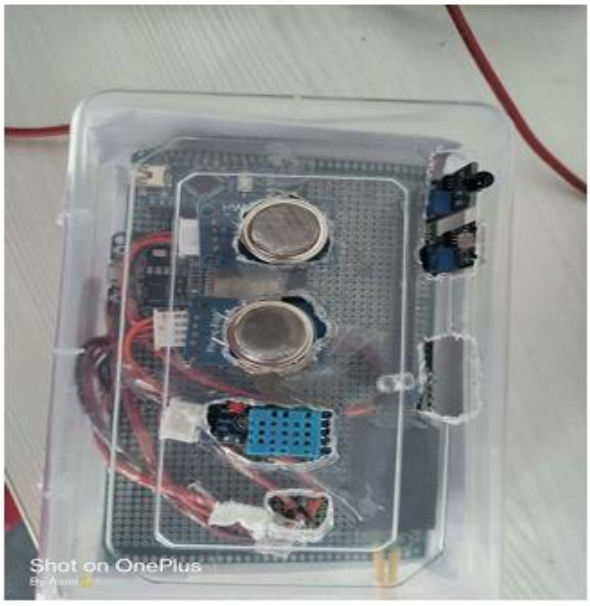


CIRCUIT DIAGRAM:

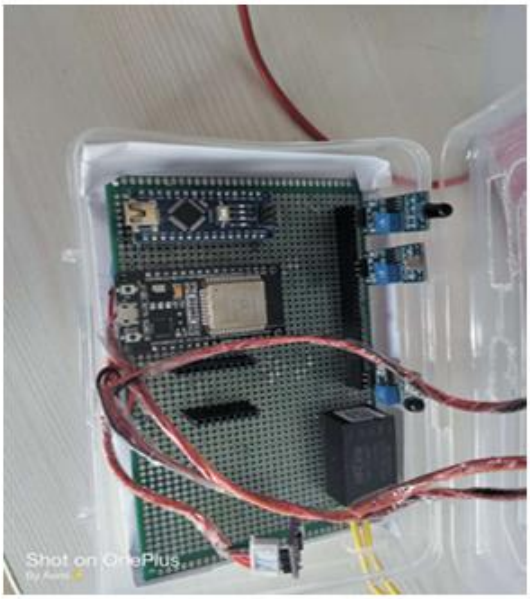


PCB HARDWARE DIAGRAM:





(b) PCB Hardware Diagram - 1



(a) PCB Hardware Diagram - 2

CONCLUSION OF THE PROJECT:

In conclusion, the development and implementation of the IoT-based baby incubator monitoring and alerting system represent a significant advancement in neonatal care technology. The system effectively addresses the critical need for continuous surveillance and proactive intervention to ensure the safety and well-being of infants in incubators.

Through the integration of various sensors, real-time data processing, wireless communication, and remote monitoring capabilities, the system offers a comprehensive solution for monitoring environmental conditions and detecting potential hazards within the incubator environment. The timely generation of alerts enables caregivers and medical personnel to respond promptly to any abnormalities, thereby minimizing risks and optimizing the care provided to vulnerable newborns. While the system has demonstrated promising results in initial testing, ongoing refinement and optimization are essential to further enhance its reliability, scalability, and usability in clinical settings. With continueddevelopment and validation,the IoT-based baby incubator monitoring and alerting system holds great potential to improve outcomes and enhance the quality of care for neonates worldwide.

5. Smart Home Control with ESP8266 and Customized Android Application Interface

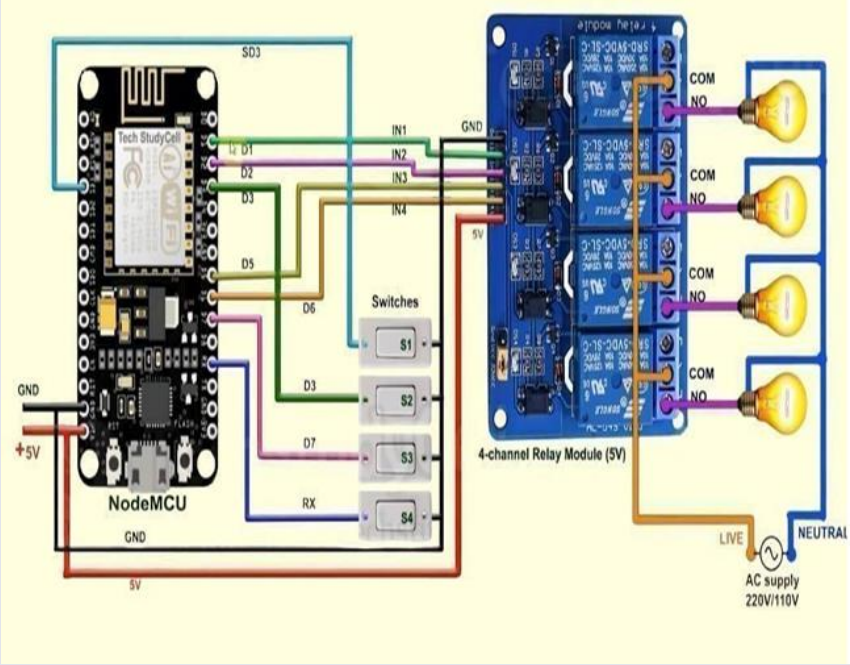
G. Sri Sai Tejas,B. M S R Murthy,D. Phanindra Babu ,G. Vamsi Pratap Varma ,J. Rakesh Kumar

SUPERVISOR:Dr.IDAMAKANTIKASIREDDY,Ph.D.

OBJECTIVEOFTHE PROJECT:

This project focuses on developing a cost-effective and wireless Home Automation System the use of Node MCU which is an open-source Wi-Finagled microcontroller based on the ESP8266 chip, with IoT because it is simple and user-friendly interface with the network for home automation. If the Node MCU is connected with Wi-Fi, then you can control the relay from anywhere able to control all your appliance with Cadio, Google Home and Amazon Alexa. And if there is no internet, still you can control the appliances manually with switches. And you can also add timer and create a scheduler to control these appliances automatically. Monitor the real time feedback on the Cadio, Google Home IoT applications. Our design aims to enhance the living experience for the elderly and disabled, while also improving overall home functionality and comfort through smart automation.

CIRCUIT DIAGRAM:



HARDWARE:

CONCLUSION:

In conclusion, this project has successfully demonstrated the feasibility and practicality of developing an individual control home automation system using low-cost, locally available components. The system, based on the ESP8266 chip and NodeMCU microcontroller, offers a cost-effective solution for controlling a wide range of home appliances, including security lamps, televisions, air conditioning systems, and entire lighting systems. One of the key advantages of this system is its compact design, which allows for the integration of all necessary components into a small and inconspicuous container. Despite its small size, the system offers comprehensive control capabilities and can be easily adapted to suit various home automation needs. In summary, this project has shown that affordable and versatile home automation solutions can be developed using readily available components. By offering convenient remote-control functionality and supporting a wide range of appliances, this system has the potential to enhance comfort, convenience, and efficiency in households while also paving the way for further innovations in the field of home automation.