ARUJ PUNIA
2310994767

Task 7.1C
Embedded Systems

SIT 210

Me • 05 October 2024 1:56 PM

Aruj Punia 2310994767 | Reviewing Project - Raspberry Pi Pico-Based Air and Sound Pollution Monitoring System by Rahul | Project Overview: Rahul's project, the Raspberry Pi Pico-Based Air and Sound Pollution Monitoring System, addresses global challenges related to air and sound pollution, particularly in urban environments. The system uses sensors for real-time monitoring and provides data through a web interface. The goal is to make pollution data more accessible and affordable for both urban and rural areas. Positives: The use of Raspberry Pi Pico and IoT for real-time, cost-effective pollution monitoring is highly innovative. Clear focus on scalability and broad deployment potential in both urban and rural environments. The idea of integrating pollution alerts and historical data through a web-based interface is practical and user-friendly. Negatives: The presentation could include more technical details on how the data is processed and visualized in the cloud. Mobile app integration could be emphasized more to provide alerts and data on the go, enhancing usability. Overall, the project offers a strong solution to a pressing global issue and has significant potential for expansion.

Me • 05 October 2024 1:54 PM

Aruj Punia 2310994767 | Reviewing Project - IoT Weather Reporting System by Bhuwan Kumar | Project Overview: The IoT Weather Reporting System is designed to address the limitations of traditional weather monitoring by offering an affordable, real-time, and localized solution. The project utilizes an Arduino Nano for sensor data collection and a Raspberry Pi for data processing and cloud integration. It aims to deliver hyperlocal weather information through an online interface, improving accessibility for various applications like agriculture and home monitoring. Positives: Clear identification of the problem domain and challenges in current systems. Effective use of Arduino Nano and Raspberry Pi for real-time data collection and processing. Seamless cloud integration to make data accessible to users remotely. Potential for future expansion into smart agriculture and home systems. Negatives: The pitch could benefit from a live demo or visualization of data flow between components. Scalability and practical deployment challenges in diverse environments could be explored in more detail. Overall, it's a solid project with great potential for practical real-world use.

Me • 05 October 2024 1:52 PM

Aruj Punia 2310994767 | Reviewing Project - Smart Alcohol and Fingerprint Ignition Control system by Saurabh Singh Project Overview: The proposed project aims to develop a Smart Alcohol and Fingerprint Ignition Control system. This embedded system will help prevent unauthorized vehicle use by incorporating an alcohol sensor and fingerprint verification. The system is designed to address key safety issues related to drunk driving, underage driving, and unauthorized vehicle access. The alcohol sensor ensures that the driver is sober before allowing them to attempt starting the vehicle, while the fingerprint sensor verifies the identity of the driver. Only when both checks are passed will the ignition be activated, improving road safety and preventing misuse. Positives: The project tackles real-world problems, such as drunk driving and unauthorized vehicle access, which can have serious safety and legal consequences. The integration of both alcohol detection and fingerprint verification creates a robust, multi-layered security system. Using widely accessible components like the MQ-3 alcohol sensor and R307 fingerprint sensor enhances practicality and scalability. The presentation was clear in explaining the challenges in current systems and how this project fills gaps, such as the lack of real-time driver safety checks. The inclusion of communication protocols (UART, I2C/SPI, and Wi-Fi/Bluetooth) for potential remote updates is a thoughtful consideration for future expansions. Negatives: One area for improvement could be the depth of the block diagram and flow of data. Expanding on the interactions between the sensors, microcontroller, and database system could provide better clarity on how the components work together. The pitch could benefit from a live demonstration or a simulation of the system's components in action, which would provide a better understanding of how the system responds in real time. More detailed scalability and real-world application scenarios would strengthen the proposal, such as integration with existing car models or cost estimates for production.