CN PROJECT

Real-Time Heartbeat Monitoring System Using ESP32 and INMP411

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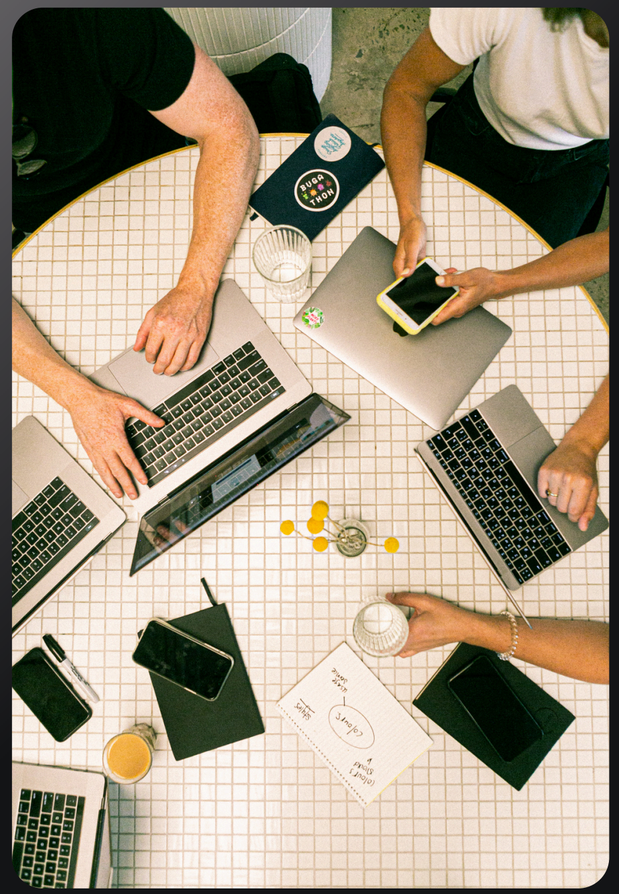
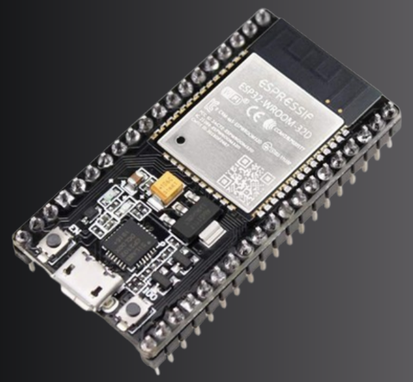
ABSTRACT

This project involves the development of a real-time heart rate monitoring system using an ESP32 microcontroller paired with an INMP411 microphone. The system captures heartbeats through audio signals, and transmits the recorded information to the endpoint using UDP over a Wi-Fi connection. This design enables continuous and remote monitoring of heart health, providing a cost-effective and scalable solution for medical and fitness applications. The project aims to deliver an efficient and reliable method for tracking heart rates in real-time while ensuring low latency in data transmission.

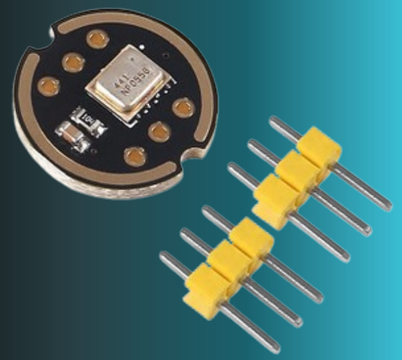


Materials Required

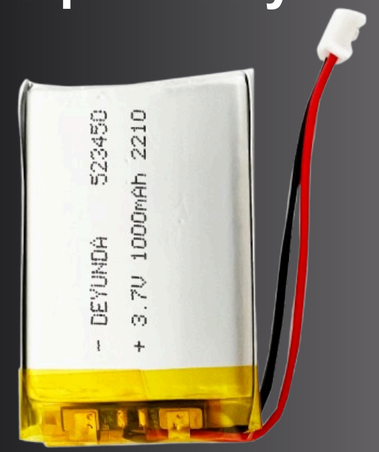
ESP32



INMP411 Mic



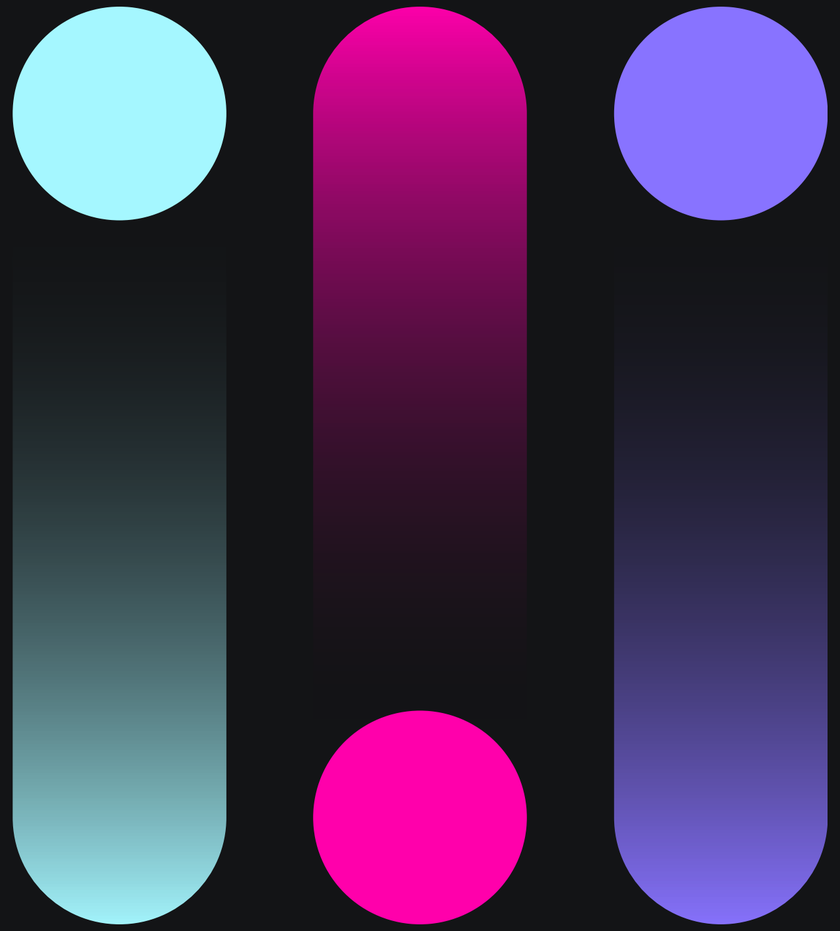
Lipo Battery



Block Diagram

Outcomes

The project will result in a real-time heart rate monitoring system that captures heartbeat audio via the INMP411 mic and sends the data to the endpoint using UDP over Wi-Fi. Users can remotely access heart rate data in real-time, making it useful for health monitoring in medical or fitness applications. The system is portable, cost-effective, and can be expanded for advanced analytics or app integration.



Thank You