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IoT Based Mining Tracking and Worker Safety Helmet

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Abstract: *The Worker Health Monitoring Helmet with an Emergency Call System is designed to ensure the safety and well-being of workers in hazardous environments. The system integrates a NodeMCU microcontroller, heart rate sensor, and push-button for continuous monitoring of workers' health, specifically tracking heart rate. The helmet is equipped with a buzzer that sounds in case of an emergency or abnormal health reading. The emergency call function allows workers to send distress signals with a push-button, instantly notifying supervisors via the Blynk IoT platform for real-time monitoring and response. The system is powered by a lithium battery, regulated by a 7805 voltage regulator, ensuring stable operation. Components like zero PCBs, wires, female headers, spacers, and cable ties are used to securely assemble the system inside the helmet, providing a compact and functional setup. This project aims to enhance worker safety by providing immediate alerts in emergency situations and continuous health tracking in risky work conditions.*

Keywords: Worker Health Monitoring Helmet

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