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TRAIN COLLISION DETECTOR

ABSTRACT:

The number of collisions occurred in railways. Because collisions were occurred due to track cracking and not identified the trains coming on the same track at the right time. Maximum peoples were losing their lives due to collision. Most of the accidents were occurred with negligence of humans and without proper communication from Train Traffic Control Station (TTCS).to prevent this problem we identified a sensors which will identify the railway track cracks and identify the opposite train in the same track within a short time. The purpose of the project is to develop and design a low-cost system with high integrity and reliability for enhancing to prevent the train's collisions by Train Collision Detector. In this ,we used UV sensors, IR sensors, LPC2148 processor to prevent train collision as well as track cracks

DESCRIPTION:

The methodology for the Train Collision System using ultrasonic sensors and Arduino involves sensor installation to trains to detect approaching trains. Ultrasonic sensors measure distances between trains and obstacles, sending data to an Arduino microcontroller. The microcontroller processes sensor data in real time and calculates safe stopping distances and makes buzzer. If a train's distance becomes critically close to another train or obstacle, the system triggers emergency braking and train stops with buzzer.. This methodology integrates sensor technology, real-time processing, and safety measures to prevent collisions and enhance railway safety, contributing to efficient and secure train operations.

CONCLUSION:

Train collision detectors are vital safety devices that help prevent
train collisions and improve railway safety.
With their advanced sensor technologies, algorithms, and communication systems, these detectors significantly enhance the efficiency and reliability of train operations.
Continuous advancements and widespread adoption of train collision detectors will continue to drive the improvement of railway safety and efficiency.

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