

# **SMART SOLUTION FOR RAILWAYS USING IOT**

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## **PROBLEM SOLUTION FIT:**

There are a large number of applications of Wireless sensor networks like monitor physical or environmental conditions, such as temperature, sound, pressure, etc. It can be used for monitoring the railway infrastructure such as rail tracks like track beds, and track equipment along with vehicle health monitoring such as bogies and wheels. This can reduce human inspection requirements for maintenance through detecting any defects and improves safety and reliability. Sensor devices are attached to the track or train mechanics. More sensors are attached according to the coverage area. The sensor nodes communicate directly with the server using satellite or GPRS system. The control room accesses the data

directly via the cloud server. Infrared Sensor used to monitor the temperature of each wheel in real time when the trains are running and send the data to the central monitoring system. wireless sensor devices are mounted on boards attached to the object being monitored. One or more sensors are mounted on a sensor board (node). The sensor nodes communicate with the base station utilizing a wireless transmission protocol. The base station collects data and transmits it to the central server through satellite or GPRS and monitoring by the system. There may be some variations on this setup. A Web page is designed for the public where they can book tickets by seeing the available seats. After booking the train, the person will get a QR code which has to be shown to the Ticket Collector while boarding the train. The ticket collectors can scan the QR code to identify the personal details. A GPS module is present in the train to track it. The live status of the journey is updated in the Web app continuously. All the booking details of the customers will be stored in the database with a unique ID and they can be retrieved back when the Ticket Collector scans the QR Code.

## SOLUTION ARCHITECTURE:

