SMART SOLUTIONS FOR RAILWAYS:

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PROJECT OBJECTIVES:

- The SMART SOLUTION FOR RAILWAY project aims to improve the facility to use the easiest way to reserve a ticket through online with the help of qr code scanner.
- During this project we work on IOT devices and we can gain knowledge about how to work with Watson IOT Platform.
- Connecting and exchanging the sensor data.
- Also IBM Cloudant DB is also used.
- Scan the QR code and retrieve the user details about the reservation of the ticket.
- Generating the user details in the database connecting to the xampp server for the web page.
- Storing the data in the Cloudant DB.
- With the QR code we can generate the required data.

WEB APPLICATION:

- Using the web application by writing a code in html css and js the user details can be created.
- Once the details are created it gets stored in the database.
- Once the user clicks the submit button,the QR code is generated and the unique Id is generated along with the details with the unique id is stored in the Cloudant DB.
- In python code, a ticket collector can scan the QR code and the unique is checked along with the id the passenger provided to check the details of the user.

- Also the live location of the train is tracked by using GPS tracker

IOT IS TRANSFORMING THE RAILWAYS

- **Greater Reliability and Safety**

A train that suddenly breaks down on the track can ruin the day of its passengers, lead to delays across the network, and essentially throw the entire system off-gear. However, recent developments in preventive maintenance practices prompted by IoT have helped to revive the reliability of even the oldest assets. By integrating IoT sensors crucial components like brakes, wheelsets, and engines, trains become more sensitive to their operations for more efficiency.

- **Fewer Maintenance Delays**

Undesirable downtime due to sudden repairs can soon be a thing of the past for the railways. Predictive and preventive maintenance is feasible and more effective in the IoT era. Smart sensors and analytics across the train engine, coaches, and tracks allow rail systems to be remotely checked and repaired before a small issue magnifies into huge trouble. Asset health monitoring through IoT insights implies less of maintenance delays and helps in extending the life of rail infrastructure.

- **Better Product Development in the Industry**

  Rail OEMs and operators can leverage IoT not only for better operations with the given infrastructure but also in the manufacturing processes of locomotives, wagons and train coaches. Conventional engineering solutions were not devised to support systems of systems. There can be delays and constraints in production when the process entails developing a requirements definition and then following it up with design, build, and tests. The actual feedback on product quality comes only later through sales and buyers' complaints.