

Project Innovation: smart bus Optimizing Public Transport IBM Naan Mudhalvan-Group 2 Internet Of Things(IOT)

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Project Definition

The project definition phase is crucial for outlining the goals, objectives, and scope of the optimization project. We will identify the current pain points in the public transport system, analyze user feedback, and gather data on passenger volumes and routes. This information will help us develop a comprehensive plan to enhance the overall travel experience. As the project innovation our goal is to optimize public transport by implementing various improvements. These include the replacement of conductors with seat allocation, bus time arrival notifications, reservation and a convenient payment system. By utilizing IoT sensors and a real-time transit information platform, we aim to create a seamless and efficient public transport experience. Let's explore the project document below to understand the steps involved in achieving this objective

Design Thinking

Empathize

Gather insights and understand the needs and challenges of commuters.



Define

Define the problem statement and establish project goals based on user research.



Prototype

Create prototypes to visualize and test different concepts.



Project Objectives

1

Enhance Efficiency

Streamline bus operations and reduce delays through effective route planning and optimized schedules.

2

Improve Passenger Experience

Offer real-time information, comfortable seating arrangements, and seamless connectivity.

3

Increase Accessibility

Ensure accessibility for individuals with mobility challenges and provide user-friendly payment options.

IoT Sensor Design

Utilizing IoT sensors, we will create a smart monitoring system for buses. These sensors will collect data on passenger count, temperature, and location. This will enable us to optimize bus capacity, improve maintenance planning, and provide accurate arrival time predictions for passengers.

Real-Time Transit Information Platform

"Knowing when the next bus will arrive is a game-changer for commuters. Our real-time transit information platform will provide up-to-the-minute updates on bus arrival times, route changes, and any disruptions. Say goodbye to unpredictable waits and plan your journey with confidence."

Integration Approach

IoT Sensors for Public Transportation

- GPS tracking sensors
- Passenger counters
- Temperature and humidity sensors
- Accelerometers for detecting sudden stops or impacts
- Proximity sensors for detecting nearby objects or people

In addition to these sensors, we will use API integration to connect with existing transportation systems, such as fare collection and ticketing, to ensure a seamless user experience.

Data Connectivity

Establish secure and reliable data connections between buses, sensors, and the central information system.

User Interface

Create an intuitive and user-friendly interface for passengers to access real-time information and manage bookings.

Transportation cards will use IoT-based devices for contactless ticketing and payment, allowing for a safer and more convenient experience for passengers.

Payment System Improvement



Contactless Payment

Introduce contactless payment options using transportation payment cards or mobile devices for quick and convenient transactions.



QR Code Payment

Implement QR code payment solutions to facilitate easy and secure payments for passengers, including payments made with transportation payment cards.