

PUBLIC TRANSPORT OPTIMIZATION

Using IoT

Submitted by

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Abstract:

The project involves integrating IoT sensors into public transportation vehicles to monitor ridership, track locations, and predict arrival times. The goal is to provide real-time transit information to the public through a public platform, enhancing the efficiency and quality of public transportation services. This project includes defining objectives, designing the IoT sensor system, developing the real-time transit information platform, and integrating them using IoT technology and Python.

Design Thinking :

1. Define the Scope:

Determine the specific area or population that the public transport system will serve.

2. Identify Goals and Objectives:

Understand the goals of the transportation system, such as reducing traffic congestion, improving accessibility, reducing emissions, or enhancing public mobility.

3. Data Collection:

Gather data on the current transportation infrastructure, population density, commuting patterns, and other relevant factors.

4. Stakeholder Analysis:

Identify and engage with stakeholders, including commuters, local authorities, transportation providers, and environmental groups, to understand their needs and concerns.

5. Design Thinking Approach:

Conduct surveys, interviews, and observations to understand the needs and pain points of commuters.

Explore the daily challenges faced by different demographics, such as commuters with disabilities or those in underserved areas.

6. Define:

Define the specific problem areas and opportunities based on the collected data and insights.

Develop a clear problem statement that encapsulates the key issues and goals of the optimization.

7. Ideate:

Brainstorm innovative solutions to address the identified challenges. Encourage diverse perspectives and creative thinking to generate a range of ideas.

8. Prototype:

Create prototypes or simulations of potential public transportation system improvements.

Test these prototypes with a smaller group of commuters to gather feedback and refine the concepts.

9. Test:

Pilot the refined solutions in a limited area or route.

Collect data on system performance, user satisfaction, and any issues that arise during the pilot phase.

10. Implement:

Based on the feedback and data from the pilot, make necessary adjustments and scale up the optimized public transportation system.

Collaborate with relevant stakeholders and authorities to secure funding and support for implementation.

11.Evaluate:

Continuously monitor the system's performance, gathering data on ridership, efficiency, and environmental impact.

Make ongoing improvements and adjustments to ensure the system remains optimized and responsive to changing needs.