TASK - 3

**Case Study – Improving Public Transportation Efficiency Using AI**

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| **Design Thinking Phase** | **Application to the Problem** | **Solution Found** |
| **Scope** | Identify inefficiencies in public transportation: Conduct surveys, analyze traffic congestion data, and study commuter patterns. | Found that delays, overcrowding, and lack of real-time updates were major concerns for commuters. |
| **Empathize** | Interview daily commuters, bus/train operators, and city planners to understand pain points. Observe rush hour crowding and delays. | Key issues: Inconsistent schedules, lack of route optimization, and inefficient ticketing systems. |
| **Define** | Frame the problem: “How might we optimize public transportation to reduce delays and improve commuter experience?” | Problem Statement: Inefficiencies in scheduling, routing, and information accessibility cause delays and commuter frustration. |
| **Ideate** | Brainstorm solutions such as AI-based route optimization, real-time bus tracking, digital ticketing, and smart scheduling systems. | Potential solutions: AI-powered traffic prediction, automated scheduling adjustments, and an integrated commuter app. |
| **Prototype** | Develop and test an AI-powered scheduling system and a mobile app for real-time tracking and digital ticketing. | Created a prototype for an AI-based route planner and a real-time tracking app for buses and trains. |
| **Validate** | Collect feedback from test users, measure improvements in travel time and efficiency, and refine the solutions. | Found that AI-optimized routes reduced delays by 25%, and real-time tracking improved commuter satisfaction. Adjustments made for better user experience. |
| **Implement** | Scale solutions city-wide, collaborate with transport authorities, and integrate AI-powered tracking into existing infrastructure. | Launched a city-wide smart transportation system, implemented predictive scheduling, and partnered with transit agencies to ensure system adoption. |