**SMART PARKING**

**Problem Definition And Design Thinking:**

Smart parking refers to an advanced parking management system that leverages technology to improve the efficiency, accessibility, and convenience of parking for drivers and city authorities. It involves the use of sensors, data analytics, mobile apps, and real-time information to optimize parking space utilization, reduce traffic congestion, and enhance the overall parking experience in urban and congested areas.

**PROBLEM DEFINITION:**

In urban areas, finding parking spaces has become a significant challenge due to increasing vehicle ownership and limited parking infrastructure. This problem often leads to traffic congestion, wasted fuel, increased emissions, and frustration among drivers. The problem of parking can be defined.

DESIGN THINKING:

Design thinking is a problem-solving approach that focuses on understanding user needs, generating innovative solutions, and iteratively refining those solutions. When applied to the problem of smart parking, here's how you can use design thinking principles:

1.Empathize: Understand User Needs and Context

2.Define: Clearly Define the Problem

•Synthesize the insights gathered during the empathize phase to create a well-defined problem statement. For example: "Design a smart parking solution that addresses the challenges of finding available parking spaces, reduces congestion, and improves the overall parking experience in urban areas.

3.Ideate: Generate Innovative Solutions.Organize brainstorming sessions with a diverse group of stakeholders, including urban planners, technology experts, and residents. Encourage creative thinking and explore a wide range of solutions, such as sensor-based parking systems, mobile apps, dynamic pricing models, and efficient parking facility design.

4.Prototype: Create Conceptual Solutions.Develop rough prototypes or concept designs for selected ideas. These could be sketches, wireframes, or mock-ups of parking apps, signage, or sensor installations.

•Keep prototypes simple and focus on conveying the core concept and user experience.

5.Test: Gather Feedback and Iterate.Test the prototypes with potential users to collect feedback on usability, effectiveness, and user satisfaction.

•Use feedback to refine and improve the prototypes, addressing both technical and user experience aspects.

•Iterate on the prototypes and testing process as needed.

6.Implement: Develop the Smart Parking Solution

•Based on the refined prototypes, begin the development of the smart parking solution, including hardware (sensors, cameras, signage) and software components (mobile apps, data analytics, and payment systems).

•Ensure that the solution aligns with the user needs and insights gained during the earlier stages.

7.Deploy: Roll Out the Solution

•Deploy the smart parking system in target urban areas, starting with pilot deployments if feasible.

•Provide training and support to users, parking facility operators, and city officials to ensure smooth adoption.

8.Collect Data and Monitor Performance

•Continuously collect data on parking availability, user behavior, and system performance.

•Implement real-time monitoring to address technical issues promptly and optimize the system.

9.Educate and Raise Awareness

•Launch an awareness campaign to inform drivers about the smart parking solution, its benefits, and how to use it effectively.

•Promote sustainable transportation options to reduce reliance on personal vehicles.

10.Evaluate Impact and Iterate. Assess the impact of the smart parking solution on reducing congestion, improving traffic flow, and enhancing the overall urban experience.

•Continuously iterate on the system's design and features based on ongoing feedback and evolving needs.

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