❖ SMART PARKING

1. **PROBLEM DEFINITION:** THE CONVENTIONAL PARKING EXPERIENCE IN URBAN AREAS OFTEN LEADS TO INEFFICIENCIES, WASTED TIME, AND ENVIRONMENTAL IMPACT DUE TO DRIVERS CIRCLING FOR AVAILABLE SPOTS. THIS CREATES CONGESTION, INCREASES EMISSIONS, AND FRUSTRATES USERS. THE PROBLEM STATEMENT IS TO ENHANCE URBAN PARKING SYSTEMS THROUGH THE IMPLEMENTATION OF A SMART SOLUTION THAT OPTIMIZES PARKING AVAILABILITY, REDUCES CONGESTION, AND MINIMIZES ENVIRONMENTAL IMPACT.

2. 2. **DESIGN THINKING INNOVATION:** DESIGN THINKING ENCOURAGES A USER-CENTRIC APPROACH TO PROBLEM-SOLVING. IN THE CONTEXT OF SMART PARKING, THIS WOULD INVOLVE EMPATHIZING WITH USERS (BOTH DRIVERS AND CITY PLANNERS), DEFINING THEIR NEEDS AND PAIN POINTS, IDEATING CREATIVE SOLUTIONS, PROTOTYPING AND TESTING TO ENSURE EFFECTIVENESS. BY EMPLOYING DESIGN THINKING, THE SOLUTION COULD INCORPORATE ELEMENTS SUCH AS USER-FRIENDLY INTERFACES, REAL-TIME DATA, AND SEAMLESS INTEGRATION WITH EXISTING URBAN INFRASTRUCTURE.

3. **PROBLEM SOLVING ON IOT PLATFORM:** LEVERAGING THE INTERNET OF THINGS (IOT) PROVIDES AN INNOVATIVE SOLUTION TO THE PARKING PROBLEM. IOT DEVICES LIKE SENSORS CAN BE DEPLOYED IN PARKING SPACES TO MONITOR OCCUPANCY IN REAL TIME. THIS DATA CAN THEN BE TRANSMITTED TO A CENTRALIZED PLATFORM. THROUGH DATA ANALYTICS AND MACHINE LEARNING ALGORITHMS, THE PLATFORM CAN PROVIDE DRIVERS WITH UP-TO-DATE INFORMATION ON AVAILABLE PARKING SPACES, OPTIMIZING THEIR SEARCH AND REDUCING CONGESTION. ADDITIONALLY,

THE PLATFORM COULD OFFER CITY PLANNERS VALUABLE INSIGHTS FOR TRAFFIC MANAGEMENT AND URBAN PLANNING.