**PHASE 1: SMART PARKING**

**PROBLEM STATEMENT:**

The smart parking problem statement involves developing a solution to efficiently manage and optimize parking space in urban areas. This include real-time monitoring, reservation systems, and data analytics to reduce congestion, minimize search time for parking spots, and improve overall parking management.

**PROBLEM DEFINITION:**

The smart parking problem has the effectively managing and optimizing parking resources in urban environment using technology. This involves the development of system and algorithm to monitor and allocate parking space efficiently, reduce traffic congestion, user experience and make the best use of parking infrastructure.

**DESIGN THINKING:**

* **PROJECT OBJECTIVES:**

The primary objective of implementing a Smart Parking System is to enhance the efficiency, accessibility, and user experience associated with parking in urban environments. The project aims to address various challenges related to traditional parking systems and leverage technology to create a more intelligent and user-centric approach. The specific objectives include:

* **Optimize Parking Space Utilization**
* **Improve User Accessibility and Convenience**
* **Increase Operational Efficiency for Parking Operators**
* **Ensure Security and Safety**
* **Provide User Education and Support**
* **IOT SENSOR DESIGN:**

Designing IoT sensors for a smart parking system involves creating hardware and software components that can detect and communicate the status of parking spaces in real-time. Below is designing IoT sensors for smart parking:

* **Sensor Selection**
* **Power Supply and sensor placement**
* **Data Transmission and Data Processing and Analysis**
* **Scalability and user interference**
* **REAL-TIME TRANSIT INFORMATION PLATFORM:**

a real-time transit information platform for smart parking involves developing a comprehensive system that provides users with up-to-the-minute information about public transit options to and from parking facilities. This platform aims to improve urban mobility, reduce traffic congestion, and encourage the use of public transportation. Here's an overview of how to design such a platform:

* **Data Integration and Parking Facility Integration**
* **Real-time Updates and GPS and Mapping**
* **Route Planning and Optimization**
* **Security and Privacy**
* **INTEGRATION APPROACH:**

Integrating a smart parking system involves connecting various components, technologies, and data sources to create a cohesive and efficient solution. Here's an integration approach for smart parking:

* **Define Integration Objectives**
* **Select Integration Technologies**
* **Data Standardization**
* **Centralized Management System**
* **Security Integration**