TITLE: SMART PARKING SOLUTION WITH IOT IN CHENNAI

Project Definition:

The project aims to develop a smart parking system for Chennai using IoT sensors and cloud-based technologies. The goal is to build a network of smart parking spots across the city that can detect real-time parking availability and allow drivers to reserve spots via a mobile app. The system will use ultrasonic sensors to monitor parking spot occupancy, Raspberry Pi devices for edge computing, and cloud services to collect and analyze the data.

Design Thinking:

1. Project Objectives: The main objectives of this smart parking IoT solution are - a) Real-time monitoring of parking spot availability across the city, b) Enable online spot reservation and payment through a mobile app, c) Optimize parking space utilization in the city.

2. System Design: The system will use ultrasonic sensors mounted on parking spots to detect vehicle presence. Raspberry Pi devices will collect and preprocess this data before transmitting it to the cloud. The cloud will analyze parking availability across all connected spots.

3. Mobile Application: A cross-platform mobile app will be built to allow drivers to check parking availability across different locations, reserve a spot, and pay for it online. The appwill guide the driver to the reserved parking spot.

4. Scalability: The system will be designed to scale across the city by deploying more sensors and edge devices across new parking sites and integrating them seamlessly into the cloud platform.