** GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY (Autonomous)**

**Cheeryal (V), Keesara (M), Medchal Dist., Telangana - 501 301**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

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**MINI PROJECT ABSTRACT**

**III B.Tech. II SEM CSE - B Section**

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| **BATCH NUMBER: B-15** | **Mini Project** | **Academic Year:**  **2023-2024** |

**PROJECT TITLE: Smart Parking Assistance**

**TEAM MEMBERS:**

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***Project In-charge Guide with Date Project Coordinator***

**ABSTRACT**

Finding vacant parking spaces, especially in congested indoor lots, can be a significant source of driver frustration and wasted time. This project proposes a Smart Parking System with Availability Detection utilizing Internet of Things (IoT) technology to enhance parking efficiency and user experience. The system leverages strategically placed ultrasonic sensors throughout the parking area. These sensors emit sound waves and analyze the reflected echo to detect the presence and distance of parked vehicles. A central microcontroller processes the sensor data, determining available parking spaces in real-time. Indicator lights, with red signifying occupied and green for vacant, are mounted on the ceiling or walls to visually guide drivers to open spots. This facilitates a quicker and more streamlined parking experience. The system can be powered by either a wall adapter for continuous operation or a battery pack for temporary setups. A basic implementation focusing on sensor data processing, microcontroller control, and LED indicator display can be completed within 2-3 weeks. A more advanced version, enabling real-time data access, might take 4-6 weeks and require additional expertise in image recognition (if utilizing cameras) and mobile app development. This advanced version could offer features like displaying parking availability on a smartphone application, further enhancing user convenience. This project offers a practical and efficient solution for improving parking management in indoor lots, leading to a more positive user experience and potentially contributing to a reduction in traffic congestion.

**Objective:**

* Reduced Search Time and Driver Frustration: Drivers can locate vacant spaces swiftly, minimizing congestion and wasted time circling the parking lot.
* Improved Traffic Flow: Optimized parking search times lead to smoother traffic flow within the parking area, reducing overall congestion.
* Integration with Existing Systems: Compatibility with existing parking management systems can be explored for centralized control and data collection.

**Commercializable: Yes/No: YES**

**REFERENCES:**

1. https://www.diva-portal.org/smash/get/diva2:1690643/FULLTEXT02

**Date of Submission:**

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**Guide with Date Project In-charge**