SCOPE AND DELIMITATIONS:

This Capstone Project aims to develop an IoT-Integrated Tricycle Booking Platform for Web and Mobile to improve transportation at Cagayan State University – Gonzaga. The system allows students to book tricycle rides from specific places inside the campus, using IoT technology for driver verification and real-time booking operation. The system is designed for use by students and tricycle drivers.

The system covers the following:

* User Access & Role Management: The system will have separate interfaces for students and tricycle drivers. Students can register and book rides, and drivers will confirm their bookings.
* IoT Integration: The system will use RFID technology for driver authentication and a Wi-Fi module for real-time connectivity.
* Booking & Tracking: The system allows students to book tricycle rides for specific places in the campus and track available drivers in real-time.
* Automated Report Generation: The system generates tricycle booking reports to track ride transactions and improve the efficiency of the system.

Limitations:

* Campus-Exclusive Implementation: The system is specifically designed for use within Cagayan State University- Gonzaga.
* Limited IoT Functionality: The integration of IoT is primarily for driver authentication and system connectivity but does not include advanced GPS tracking.
* Platform Specific Accessibility: Students will only have access to the system via mobile and web applications, while tricycle drivers will use desktop application.
* Internet Dependence: The system requires an internet connection for real-time functionality.

SIGNIFICANCE

This study is significant as it introduces an IoT-integrated Tricycle Booking Platform designed to make commuting within Cagayan State University – Gonzaga easier, faster, and more convenient. By combining real-time booking, automated tracking, and IoT-based authentication, the system aims to simplify the transportation process for students and tricycle drivers.

* For Educational Institutions: This system helps improve campus transportation by providing a reliable and technology-driven transportation solution.
* For Students: Instead of walking to the terminal located outside the campus, they can book a tricycle with just few taps on their phone. This saves time and makes commuting around the campus much easier.
* For Tricycle Drivers: The system gives drivers a steady flow of passengers from inside the campus, helping them to earn more. More than just increasing their income, it also introduces them to a modern, digital way of managing bookings. They will learn to handle ride requests, use automated booking features, and interact with IoT-based technology, making their work more efficient and helps them adapt to the growing use of technology in transportation services.
* For Future Researchers: This study serves as foundation for future advancements in campus transportation, IoT integration, and smart mobility solutions.