**Project Title**

**A Smart, User-Friendly Inventory and Ordering System: Reducing Waste and Improving Efficiency in Restaurant Supply Chains**

**Abstract**

This project proposes the development of a smart and intuitive inventory and ordering system designed to support restaurants in automating supply chain processes. Many small and medium-sized restaurants still rely on manual spreadsheets or basic software, which often leads to errors, wasted stock, and inefficiencies. The proposed system will automate order generation, monitor stock levels in real time, and predict future requirements based on usage patterns. By implementing a clean, user-friendly interface and intelligent automation, the project aims to reduce waste, save time, and increase operational efficiency. The system will be implemented using **C#** for the front and back end, supported by a relational database such as **MySQL**. The outcome will be a prototype capable of demonstrating improved ordering accuracy and simplified stock control for restaurant managers.

**Project Aim**

The aim of this project is to design and implement a smart, user-friendly inventory and ordering system that automates restaurant supply management.  
Current systems are either too complex, require technical training, or rely heavily on manual input, leading to human error and unnecessary waste. This project seeks to address these issues by creating an efficient, automated system that simplifies operations and supports sustainability within the restaurant industry.

**Generalised Objectives**

1. To analyse existing restaurant inventory and ordering processes and identify inefficiencies.
2. To design a user-friendly interface that allows quick training and minimal user input.
3. To implement an automated ordering feature that triggers supplier requests when stock reaches predefined thresholds.
4. To integrate a database for real-time inventory tracking and data persistence.
5. To evaluate the system’s effectiveness in reducing waste and improving order accuracy through testing and simulated restaurant data.
6. To ensure scalability for future integration with supplier APIs and analytics dashboards.

**Ethics**

This project involves no human participants or sensitive personal data.  
However, ethical considerations include:

* Ensuring that any simulated business data is fictional and anonymised.
* Avoiding misuse of collected data if the system were deployed in a real restaurant environment.
* Adhering to GDPR principles if any personal or supplier data is ever introduced during testing.
* Maintaining honesty and transparency in reporting system limitations and results.
* Promoting sustainability by focusing on waste reduction and responsible resource use.