

School Canteen Pre-Order System

Introduction

The School Canteen Pre-order System is designed to address several challenges commonly faced in school canteens, such as long queues, limited student break times, food shortages, and unnecessary wastage. In many schools, students often spend a large portion of their recess or lunch break waiting in line, which leaves them with little time to eat and relax. This situation is made worse during peak hours when demand is at its highest, leading to meal shortages or, conversely, unsold food that goes to waste.

The system provides a structured solution by allowing students to conveniently pre-order their meals in advance, either for the same day or for future dates. By doing so, canteen staff can better forecast demand, prepare food in the right quantities, and schedule meal preparation more efficiently. This reduces waiting time for students, minimizes food waste, and optimizes inventory management for the canteen.

In addition, the pre-order system integrates modern payment options, such as e-wallets and prepaid balances, to support cashless transactions, making it more convenient and secure for both students and staff. Notifications and order tracking features ensure that students are updated about their meals, while reporting tools give administrators insights into daily sales, consumption trends, and popular menu items.

Ultimately, the School Canteen Pre-order System enhances the overall dining experience for students, helps canteen staff operate more effectively, and promotes sustainability by reducing unnecessary food waste.

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Phase 1 - Client Side

The client-side system will serve as the primary interface for students, teachers, and canteen staff. It will be accessible via both desktop and mobile devices for convenience. Where end users can browse menus, place orders, and monitor their transactions. It should be designed with simplicity to minimize the need for supervision.

Features

1. User Registration & Login
 - Students and staff can securely create accounts with credentials such as ID number, name, and contact details.
 - Authentication prevents unauthorized access and protects sensitive data such as payment records.
 - Forgotten password and account recovery options should be available.

2. Menu Browsing
 - Students can view the daily menu, which shows available food items, prices, and stock levels.
 - Items are grouped by category (e.g., mains, snacks, beverages, desserts).
 - Dietary information (e.g., vegetarian or allergen tags) may also be displayed for transparency.
3. Meal Pre-ordering
 - Students can select specific items and reserve them for designated timeslots (recess, lunch, after-class).
 - Orders can be placed in advance for same-day pickup or future days, helping canteen staff forecast demand.
 - The system ensures students cannot order items that exceed available stock.
 - Students can cancel or modify orders before the cut-off time set by the canteen.
4. Payment Options
 - Support for cashless transactions, including:
 - i. QR-based payments via E-wallets (GCash, Maya, etc.)
 - ii. Prepaid balances linked to a student's account.
 - Transactions are logged, and receipts are generated digitally.
 - Failed or pending payments are flagged for follow-up.
5. Order Tracking
 - Users can monitor the status of their orders in real-time (Pending, Confirmed, Preparing, Ready for Pickup, Completed).
 - A queue or countdown timer may show estimated preparation time during peak hours.
6. Notifications
 - Real-time updates on order status (confirmed, ready for pickup, out of stock).
7. Order History
 - Students can view past orders with details such as date, time, items, and total cost.
 - Quick reordering allows frequently purchased items to be added to the cart in one click.

Phase 2 – Server Side

The server-side system will handle the administrative and backend operations of the canteen. It will be developed using PHP and MySQL with XML integration, where it ensures accurate handling of orders, payments, inventory, and reporting.

Features

1. Admin Authentication
 - Only authorized staff can access the server system.

- Roles can be defined (e.g., cashier, kitchen staff, manager), each with varying privileges.
- Login credentials are secured, and admin activity is logged for accountability.

2. Menu Management

- Administrators can add, update, or remove food items in the database.
- Each menu item includes attributes such as category, price, daily availability, and stock quantity.
- Menu changes are reflected instantly on the client side.

3. Inventory Management

- Automatic deduction of stock occurs whenever a pre-order is placed.
- Inventory thresholds can be set to trigger low-stock alerts.
- Wastage or canceled orders can be logged to refine demand forecasting.
- XML integration allows inventory records to be exported for reporting or re-imported from suppliers.

4. Order Management

- Staff can view all incoming orders in a dashboard, sorted by timeslot (recess, lunch, etc.).
- Orders can be updated in real time (e.g., mark as "In Preparation," "Ready," or "Fulfilled").

5. User Management

- Admins can view all registered student accounts.
- Accounts can be reset, blocked, or reactivated if necessary.
- Prepaid balances can be topped up or adjusted by authorised personnel.

6. Payment Records

- Every transaction is logged with details such as user, amount, payment method, and timestamp.
- Refunds or voided transactions are tracked for accountability.
- Reports can be generated to reconcile payments with orders.

7. Report Generation

- **Sales Reports** – Show daily, weekly, and monthly totals for revenue.
- **Inventory Reports** – Track consumption patterns of each item, helping forecast restock schedules.
- **Order Trends** – Identify popular items, peak ordering hours, and seasonal demand.
- **XML Reports** – Export order and inventory data into structured XML files for archiving or integration with other systems.