

CUSTOM POS & KITCHEN MANAGEMENT SYSTEM

PREPARED FOR: Cafe One

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EXECUTIVE SUMMARY

This proposal outlines the development and implementation of an integrated Point of Sale (POS) and Kitchen Display System (KDS) specifically designed for **Cafe One**. The primary objective is to modernize the ordering process, ensuring that every Fried Rice order placed at the cashier terminal is instantly and accurately transmitted to the kitchen staff.

By replacing manual paper "chits" with a digital real-time interface, Cafe One will significantly reduce human error, decrease customer wait times, and gain valuable insights into daily sales performance. This system is not just a tool for transactions, but a foundation for operational excellence and business growth.

2. PROJECT OVERVIEW & OBJECTIVES

Cafe One requires a robust system that can handle high-frequency transactions during peak hours. The "Fried Rice" business model depends on speed and volume; therefore, the software must be lightweight, fast, and intuitive.

Primary Objectives:

- **Automation:** Eliminate the physical movement of paper slips from the counter to the kitchen.
 - **Accuracy:** Ensure special instructions (e.g., "extra spicy," "no onions") are clearly visible to chefs.
 - **Efficiency:** Track the time taken from "Order Placed" to "Order Ready."
 - **Data-Driven Decisions:** Provide the owner with reports on which items are most profitable.
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3. CURRENT SYSTEM ANALYSIS & PROBLEM STATEMENT

Currently, Cafe One operates on a manual or semi-manual basis. Through our observation, we have identified the following "Pain Points":

1. **Communication Latency:** During busy lunch hours, the cashier must yell or walk to the kitchen to deliver orders, causing delays.
 2. **Order Errors:** Handwritten notes are often misinterpreted by kitchen staff, leading to food waste and unhappy customers.
 3. **Lack of Visibility:** The cashier has no way of knowing how many orders are currently backed up in the kitchen before taking a new one.
 4. **No Sales History:** Calculating daily profit requires hours of manual book-keeping at the end of the day.
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4. PROPOSED SYSTEM ARCHITECTURE

The system will be built using a **Client-Server Architecture** optimized for a Local Area Network (LAN). This ensures the system works even if the internet connection is unstable.

4.1 Software Stack

- **Frontend:** React.js (For a fast, single-page application experience).
- **Backend:** Node.js with Express (To handle real-time data processing).
- **Real-time Engine:** Socket.io (To push orders to the kitchen screen instantly without refreshing).
- **Database:** MongoDB or PostgreSQL (To store sales and menu data securely).

4.2 Network Topology

[Insert Diagram: Cashier PC -> Local Router -> Kitchen Screen]

The system will run on a local server. The Cashier terminal and Kitchen screen will communicate through a dedicated Wi-Fi/LAN router provided as part of the hardware package.

5. MODULE 1: CASHIER MANAGEMENT INTERFACE

The Cashier module is designed for "Three-Tap Ordering." A cashier should be able to complete an order in under 15 seconds.

Key Features:

- **Dynamic Menu Grid:** Large, color-coded buttons for different Fried Rice varieties (Veg, Chicken, Seafood, Mixed).
 - **Modifier Panel:** A pop-up menu for add-ons (Extra Egg, Chop Suey, Chili Paste) and exclusions (No MSG, No Leeks).
 - **Order Queue Management:** Ability to "Hold" an order if a customer is still deciding.
 - **Multi-Payment Support:** Cash
 - **Automated Receipt Printing:** Prints a customer receipt and a backup kitchen small-slip if needed.
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6. MODULE 2: KITCHEN DISPLAY SYSTEM (KDS)

This module replaces the traditional kitchen printer. It will be displayed on wall-mounted monitor.

Key Features:

- **Order Cards:** Each order appears as a digital card containing the order number, items, and time elapsed.
 - **Color-Coded Urgency:**
 - **Green:** 0-5 minutes.
 - **Yellow:** 5-10 minutes.
 - **Red:** Over 10 minutes (Urgent).
 - **Status Update:** One-tap to mark an order as "In Preparation" and another tap for "Ready for Pickup."
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7. MODULE 3: ADMIN & ANALYTICS DASHBOARD

The owner of Cafe One will have a password-protected dashboard to monitor the business.

Key Features:

- **Menu Management:** Update prices or hide "Out of Stock" items instantly.
- **Sales Reports:** View total revenue by day, week, or month.
- **Peak Hour Analytics:** Identify which hours of the day require more staff.
- **Audit Logs:** Track which cashier logged in and any deleted/voided orders to prevent theft.

Report Type	Information Provided	Benefit to Cafe One
Daily Sales Summary	Total revenue, cash vs. card breakdown.	Easy daily balancing of the cash drawer.
Top Selling Items	Rankings of most popular dishes (e.g., Seafood vs. Veg).	Helps in stocking ingredients like prawns or chicken.
Hourly Traffic Report	Graphs showing the busiest hours (e.g., 12 PM - 2 PM).	Helps in scheduling more staff during peak hours.
Inventory Alert	Items running low (e.g., Basmati Rice < 5kg).	Prevents "Out of Stock" situations.

8. USER MANUAL: OPERATIONAL WORKFLOW

(This section is crucial for filling pages and showing the client you understand their work.)

Step 1: Opening the Store

1. Cashier logs in with a unique 4-digit PIN.
2. System checks the connection to the Kitchen Display.
3. Initial "Cash in Drawer" is entered.

Step 2: Processing an Order

1. Customer requests "Chicken Fried Rice - Large."
2. Cashier taps **[Fried Rice Category]** -> **[Chicken]** -> **[Large]**.
3. Cashier adds "Extra Chili Paste" from the modifier list.
4. Total price is calculated automatically.
5. Cashier hits **[Submit to Kitchen]**.

Step 3: Kitchen Production

1. Kitchen screen "pings." The order appears at the end of the list.
 2. Chef sees "Chicken Fried Rice - Large (Extra Chili Paste)."
 3. Chef taps the order to show they have started cooking.
 4. Once done, Chef taps **[Done]**. The Cashier screen shows a "Ready" notification.
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9. HARDWARE SPECIFICATIONS

To ensure the software runs smoothly, we recommend the following hardware:

Component	Specification	Purpose
Cashier PC	All-in-One (Core i3, 8GB RAM) pc / desktop / laptop	Primary interface for sales.
Kitchen Tablet	Mini desktop / laptop	Receiving and managing orders.
Thermal Printer	80mm High-Speed Thermal Printer	Printing customer receipts.

Component	Specification	Purpose
Router	Dual-Band Gigabit Router	Connectivity between devices.
UPS (user likely)	650VA Uninterruptible Power Supply	Power backup for the cashier terminal.

10. PROJECT TIMELINE & MILESTONES

The project will be delivered in 4 phases over 8 weeks.

- Phase 1: Analysis (Week 1):** Menu finalization and UI design approval.
- Phase 2: Development (Weeks 2-5):** Coding the Cashier, Kitchen, and Admin modules.
- Phase 3: Testing (Week 6):** Internal testing and bug fixing.
- Phase 4: Deployment (Week 7-8):** Hardware installation, staff training, and "Go-Live" support.

Phase	Task	Duration
Phase 1	Requirement Gathering & UI Design	2 Weeks
Phase 2	Backend & Database Development	3 Weeks
Phase 3	Frontend Development (Cashier & Kitchen)	4 Weeks
Phase 4	Testing & Bug Fixing	2 Weeks
Phase 5	Deployment & Staff Training	1 Week

11. BUDGET & FINANCIAL PROPOSAL

(Note: Fill in these figures based on your local rates)

- **Software Development Fee:** 15000
- **Hardware Package Cost:** 100 000
- **Installation & Training:** 5000
- **Total Investment:** 120 000
- **Annual Maintenance (Year 2 onwards):** free

System build cost:

Description	Cost (Estimated)
Software Development	15000
Installation	5000
Annual Maintenance (AMC)	free
Total Project Value	20000

12. DATA SECURITY & BACKUP

- **Local Backup:** The system will perform a daily backup to an external USB drive.
 - **User Roles:** Different access levels for "Cashier" and "Admin" to ensure sensitive settings are protected.
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13. MAINTENANCE & SUPPORT

We provide a **1 year comprehensive warranty** covering:

- Software bug fixes.
 - Remote technical support.
 - On-site visits for hardware connectivity issues.
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14. CONCLUSION

The implementation of this POS and Kitchen system is a strategic move for **Cafe One**. It addresses the core issues of communication and efficiency while providing the data necessary to scale the business. We are confident that this solution will provide a return on investment within the first few months of operation.

15. APPENDICES

- *Appendix A: Sample Receipt Design*
- *Appendix B: Full Menu Item List*
- *Appendix C: Terms and Conditions*