**SALES AND INVENTORY SYSTEM FOR KAPEÑA CAFE**

A Maintenance Document Presented to the

Faculty of Datamex College of Saint Adeline, Inc

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**INTRODUCTION**

The Kapeña Cafe Sales and Inventory System is a computerized solution developed to help the café efficiently manage its daily operations, including product sales, inventory tracking, and report generation. Its main purpose is to replace the traditional manual recording methods that often lead to errors, delays, and difficulties in monitoring stock levels. By automating these processes, the system ensures accurate recordkeeping, faster transactions, and better decision-making for the cafe’s management and staff.

Maintenance plays a vital role in ensuring the system’s longevity and performance. Over time, software may experience issues such as bugs, slow response times, or compatibility problems due to updates in hardware or operating systems. Regular maintenance helps identify and fix these issues early, keeping the system stable, secure, and efficient. It also ensures that new features and improvements can be added to meet the evolving needs of the café.

The scope of maintenance for the Kapeña Cafe Sales and Inventory System includes, bug fixes, performance enhancements, database management, and security. These activities help preserve system reliability, improve user experience, and protect important business data. Through continuous maintenance, the system remains a dependable tool for managing sales and inventory, supporting Kapeña Cafe’s goal of delivering efficient service and consistent product quality.

**MAINTENANCE PLAN**

The maintenance plan for the Kapeña Cafe Sales and Inventory System focuses on ensuring that the system remains functional, reliable, and up to date as the café continues its daily operations. The overall strategy is to perform regular evaluations, apply timely updates, and resolve issues as they arise to prevent system downtime and data loss. Maintenance activities will be scheduled periodically and may also be performed as needed, depending on user feedback and operational demands.

**The plan includes four main types of maintenance:**

**Corrective Maintenance**

This involves identifying and fixing errors or bugs that appear during system operation. Issues such as inaccurate data display, malfunctioning buttons, or failed database connections will be promptly resolved to restore normal system performance.

**Adaptive Maintenance**

As technology and business requirements evolve, certain adjustments may be necessary. Adaptive maintenance focuses on updating the system to remain compatible with new software, or database versions. This may also include modifying system functions to align with updated cafe processes or new features requested by management.

**Perfective Maintenance**

This type of maintenance aims to enhance the performance and usability of the system. It includes improving user interface design, optimizing system speed, refining reports, and adding new functionalities based on user feedback. Perfective maintenance ensures that the system continuously evolves to meet user expectations and improve efficiency.

**Preventive Maintenance**

Preventive maintenance is carried out to reduce the risk of future issues and maintain overall system health. This includes routine database backups, system performance checks, and installation of security patches. These proactive measures help prevent potential failures and extend the lifespan of the system.

**MAINTENANCE SCHEDULE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Description | Frequency | Responsible | Status |
| Database  Backup | Create full backups of the Sales and Inventory database to ensure all sales records, product data, and inventory information are safely stored and recoverable in case of system failure. | Weekly | Admin | Ongoing |
| Security  Updates | Apply necessary patches and updates to protect the system against security vulnerabilities and unauthorized access, ensuring that customer and transaction data remain secure. | Monthly | Deployment Team | Scheduled |
| Bug Fixes | Identify and resolve system bugs that may affect sales transactions, report generation, or inventory monitoring to maintain smooth system operations | As Needed | Developer | Ongoing |
| System  Performance  Check | Regularly assess the performance of the Sales and Inventory System, including load times and data processing speed, to optimize efficiency and prevent slowdowns during café operations. | Quarterly | Developer | Not Started |
| Data Validation and Cleaning | Review and clean the database to remove duplicate or outdated records, ensuring data accuracy for sales reports and inventory summaries. | Monthly | Database Administrator | Ongoing |

**Issue Tracking & Bug Reports**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Issue ID** | Description | Severity | Reported By | Date Reported | Status |
| BUG001 | |  | | --- | |  |  |  | | --- | | Inventory data not updating after a sales transaction. | | High | Cashier | 09/15/2025 | Fixed |
| BUG002 | Low-stock notification not appearing for some items. | Medium | Admin | 09/20/2025 | In Progress |
| BUG003 | Product image not displaying in the Sales Form. | Low | |  | | --- | |  |  |  |  |  | | --- | --- | --- | | |  | | --- | |  |  |  | | --- | | Cashier | | | 9/26/2025 | Fixed |
| BUG004 | System report generation takes too long when printing daily sales. | High | Cashier | 10/1/2025 | Fixed |
| BUG005 | User login occasionally freezes after incorrect password entry. | Critical | |  | | --- | |  |  |  | | --- | | Admin | | 10/7/2025 | Ongoing |

**Backup & Recovery Plan**

A reliable backup and recovery plan is essential to protect the data and functionality of the Kapeña Café Sales and Inventory System. Since the system handles critical business information such as sales records, inventory data, and user accounts, maintaining regular backups ensures that operations can quickly resume in the event of data loss, corruption, or system failure.

**Backup Strategy**

The system follows a scheduled automatic backup strategy to safeguard all essential data stored in the database. Backups are created and saved both locally and to ensure data redundancy and availability. The following steps define the backup process:

* **Automatic Daily Backups:** The system automatically performs a backup of all sales and inventory data at the end of each business day.
* **Local Storage Backup:** Copies of the database are also stored on an external hard drive connected to the cafe main computer for quick recovery.
* **Backup Verification:** Each backup file is tested to ensure it can be restored successfully before being archived.

**Recovery Procedure**

In the event of data loss, corruption, or system failure, the following recovery steps will be performed to restore the system:

* **Identify the Issue:** Determine the cause of data loss (hardware failure, accidental deletion, or system crash).
* **Access the Latest Backup:** Retrieve the most recent verified backup file from the cloud storage or local backup device.
* **Restore the Database:** Use SQL Server Management Studio (SSMS) to import and restore the backup file into the Sales and Inventory System database.
* **Verify System Functionality:** After restoration, test all system features including login, sales, and reporting to ensure the data and functions are working properly.

**Backup Procedure**

To ensure that important data such as inventory records, and user accounts are protected, the Kapeña Cafe Sales and Inventory System follow a manual backup procedure. This procedure defines how often backups should be performed and where the backup files are stored to maintain data safety and quick recovery in case of system failure.

**Frequency of Backups**

Backups are performed on a regular and scheduled basis to prevent data loss and maintain up-to-date system information. The following schedule is recommended:

* Weekly Backups: The administrator should back up the database every week, preferably after the cafe’s closing hours when all daily transactions are complete.
* After Major Updates: A manual backup should also be created whenever significant changes are made to the system, such as adding new products, modifying inventory, or updating sales data.
* Monthly Full Backup: At the end of each month, a full backup of the database should be performed to ensure a complete and verified copy of all business data is stored safely.

**Storage Locations**

To minimize data loss, backups should be stored in multiple secure locations. The following storage methods are recommended:

* Local Storage: Backup files are first saved in a secured folder on the cafe’s main computer for quick access and restoration.
* External Drive: A copy of each backup should be saved to an external hard drive or USB drive to protect against local hardware failure.

**Recovery Steps**

In the event of data loss, corruption, or system failure, the Kapeña Café Sales and Inventory System can be restored using the most recent backup file. The recovery process ensures that all essential sales, inventory, and user data are retrieved and the system can resume normal operations as quickly as possible.

**Steps to Restore a Backup in Case of Failure**

1. **Identify the Issue**  
   Determine the cause of the failure—whether it is due to a database error, hardware malfunction, or accidental data deletion.
2. **Locate the Most Recent Backup File**  
   Retrieve the latest backup file from the Database, external drive, or cloud folder where it was saved.
3. **Open SQL Server Management Studio (SSMS)**  
   Launch SSMS on the café’s main computer and connect to the database server used by the Sales and Inventory System.
4. **Restore the Database**

* In SSMS, right-click on the “Databases” folder and select **Restore Database.**
* Choose **Device**, browse for the .bak file, and click **OK**.
* Confirm the restore operation to replace or recover the existing database.

1. **Verify Restoration**  
   After restoring, open the Sales and Inventory System and check that all sales records, inventory lists, and product details are correctly displayed. Perform test transactions to ensure the system is fully functional.

**Contact Information for Technical Support**

If system recovery cannot be completed or technical issues persist, the following contacts should be notified for assistance:

| Support Role | | Name/Team | | Contact Information | | Responsibility |
| --- | --- | --- | --- | --- | --- | --- |
| System Administrator | | Kapeña CafeAdmin | | [support@kapenacafe.com](mailto:support@kapenacafe.com) | | Database recovery and system access |
| Developer | | Development Team | | saleinventory@gmail.com | | Technical troubleshooting and error fixing |
| IT Support | IT Maintenance Team | | +639089279846 | | Hardware and system setup assistance | |

**Performance Monitoring**

|  |  |  |  |
| --- | --- | --- | --- |
| Matrix | Description | Threshold | Monitoring Tool |
| System Uptime | Percentage of time the Sales and Inventory System is available and functional | 99% | Windows Task Scheduler Logs |
| Database Health | Ensures that the SQL Server database is running properly and data is accessible | 99% | |  | | --- | |  |  |  | | --- | | SQL Server Management Studio (SSMS) | |
| Response Time | Time taken to load forms, perform transactions, or generate reports | 5 seconds | System Performance Monitor |
| Error Rate | Percentage of system errors during transactions | 6% | Visual Basic Debug Logs |
| Backup Status | Confirms if manual backups are created regularly | Weekly | |  | | --- | |  |  |  | | --- | | Backup Log File / Manual Check | |

**Security Measures**

The Sales and Inventory System implement several security policies and measures to ensure that system data and user information are protected from unauthorized access, loss, or modification.

**Access Control**

* The system includes two user roles:
  + Admin – Full access to all system features such as managing products, ingredients, users, and generating reports.
  + Cashier – Limited access to sales and transaction modules only.
* User permissions are strictly defined to prevent unauthorized access to sensitive data.

**Authentication**

* user must log in with a unique username and password before accessing the system.
* Passwords are hidden with masking characters (●●●●●) during input to protect credentials.
* The system requires users to log out after use to prevent unauthorized access from unattended devices.

**Data Protection & Encryption**

* Passwords are encrypted in the database to prevent exposure even if database access is compromised.
* System data communication between forms and the database uses secure SQL connections to minimize the risk of injection attacks.
* Regular database maintenance ensures integrity and protection from corruption.

**Physical and Network Security**

* Only authorized personnel are allowed to use the system computer.
* The database is stored locally and protected by Windows user account security.
* The system may include manual backups to external drives stored in a secure location.

**Documentation Updates**

System documentation is regularly reviewed and updated to ensure accuracy and consistency with the latest system modifications and improvements. This process ensures that users and developers have access to the most current and relevant information.

**List of Documentation Changes:**

|  |  |  |
| --- | --- | --- |
| Date Updated | Description | Updated by |
| September 2025 | Added new module for inventory tracking | Developer |
| September 2025 | Updated user manual | Developer |
| September 2025 | Revised database diagram to reflect additional product | Developer |
| October 2025 | Improved maintenance plan section and included security measures in system documentation. | Developer |

**Conclusion & Recommendations**

**Conclusion**

The maintenance activities for the Sales and Inventory System for the Kapena Cafe Shop have played a crucial role in sustaining the system’s overall reliability and performance. Through regular maintenance tasks such as database monitoring, bug fixing, and performance evaluation, the system continues to operate efficiently and provide accurate data for daily business operations.  
Security measures and documentation updates have also been implemented to ensure data integrity and to adapt to any changes in user requirements or technological advancements. The system remains user-friendly, functional, and essential to the cafe’s operations by supporting both administrative and cashier activities in monitoring sales and inventory efficiently.  
Overall, the system maintenance plan has strengthened the stability, usability, and sustainability of the Sales and Inventory System, ensuring that it continues to meet the cafe’s operational goals and business needs.

**Recommendations**

To further enhance and future-proof the Sales and Inventory System for the Cafe Shop, the following recommendations are suggested:

* **Automate Data Backups:** Implement an automatic backup feature to safeguard all sales and inventory data against accidental deletion, hardware failure, or software errors.
* **Upgrade Security Protocols:** Integrate stronger authentication such as multi-factor login and encrypted password storage to prevent unauthorized access.
* **Regular System Audits:** Conduct quarterly system audits to ensure data accuracy, system responsiveness, and proper database performance.
* **Enhance User Interface:** Improve the graphical interface and navigation design to make the system more visually appealing and user-friendly for both Admin and Cashier users.
* **Integrate Analytics Tools:** Add sales and inventory analytics dashboards to help visualize sales trends, low-stock alerts, and product performance in real-time.
* **Provide User Training:** Offer short refresher training sessions for system users to minimize human error and improve system efficiency.
* **Cloud Integration:** Consider migrating the system to a cloud-based platform to improve data accessibility, backup security, and scalability for future branches.
* **Continuous Improvement:** Maintain open communication with end users to gather feedback, identify new requirements, and apply updates that enhance performance and usability.