**A PROPOSED OFFERING OF A CLINIC RECORDS MANAGEMENT SYSTEM**

**FOR**

**HI-PRECISION DIAGNOSTICS – MALABON BRANCH**

A Thesis Project Presented to the

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In Partial Fulfillment of the Requirements for the

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By:

Catubay, Mark Lawrence L.

**MAINTENANCE DOCUMENT**

**CHAPTER I**

**INTRODUCTION**

**Project Purpose**

The Clinic Records Management System (CRMS) is a desktop application developed to provide Hi-Precision Diagnostics – Malabon Branch with a secure, reliable, and efficient tool for managing patient records, consultations, and medicine inventory.

**Importance of Maintenance**

Ongoing maintenance is critical to ensure the long-term stability, security, and usability of the CRMS. A structured maintenance plan guarantees that the application remains a dependable asset for the clinic, protects the integrity of its data, and adapts to future needs.

**Scope of Maintenance**

This document covers all post-deployment maintenance activities for the CRMS, including:

**Software Updates -** Delivering new versions of the application with feature enhancements.

**Bug Fixes -** Correcting any identified software defects.

**Security Patches -** Updating internal dependencies to mitigate potential vulnerabilities.

**Data Integrity -** Guiding the clinic staff on essential data backup and recovery procedures.

**CHAPTER II**

**MAINTENANCE PLAN**

**Strategy**

The maintenance strategy is centered on a partnership between the Project Proponent (for technical updates) and the clinic staff (for data preservation). The plan is designed to be minimally disruptive, with all technical interventions scheduled during non-operational hours.

**Types of Maintenance**

**Corrective Maintenance** - This involves fixing bugs and errors reported by the clinic staff. Issues will be logged, prioritized, and resolved based on their severity and impact on clinic operations.

**Adaptive Maintenance** - This includes modifications required to keep the application functional in a changing environment, such as updating the application to ensure compatibility with a new version of the Windows operating system.

**Perfective Maintenance** - This involves implementing improvements and optimizations based on user feedback. This could include enhancing the user interface, adding minor quality-of-life features, or improving the performance of certain functions.

**Preventive Maintenance** - This focuses on preventing future issues. For the developer, this means periodically updating third-party libraries. For the clinic, the most critical preventive maintenance task is the regular, daily backup of the database.

**CHAPTER III**

**MAINTENANCE SCHEDULE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Description | Frequency | Responsible Person | Status |
| Database Backup | **Create a complete backup of the clinic.db file by copying it to a secure, separate location (e.g., external USB drive).** | **Daily** | **Clinic Staff / Admin** | **Ongoing** |
| Security Updates | **The proponent will review dependencies for known vulnerabilities and prepare a patched version of the application.** | **As needed** | **Project Proponent** | **Scheduled** |
| Bug Fixes | **Fixes for reported errors will be developed, tested, and deployed in a scheduled update.** | **As needed** | **Project Proponent** | **Pending** |
| System Performance Check | **The proponent will perform a check during a scheduled visit to observe application responsiveness and resource usage.** | **Annually** | **Project Proponent** | **Not Started** |

**CHAPTER IV**

**ISSUE TRACKING & BUG REPORTS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Issue ID | Description | Severity | Reported By | Date Reported | Status |
| BUG-001 | The search bar text does not clear automatically when navigating away from and back to a page. | Low | Clinic Staff A | 09/20/2025 | In Progress |
| BUG-002 | On rare occasions, the application window appears blank on startup, requiring a restart. | Medium | Clinic Staff B | 09/25/2025 | Pending Analysis |

**CHAPTER V**

**BACKUP & RECOVERY PLAN**

**Backup Strategy**

The backup strategy is manual and user-driven. Due to the local nature of the system, there are no automatic or cloud-based backups. The clinic staff is solely responsible for creating and securing backups of their data.

**CHAPTER 5.1 - BACKUP PROCEDURES**

* **Frequency**: Daily, at the end of each business day.
* **Storage Location**: A dedicated, encrypted external USB drive is highly recommended.
* **Step-by-Step Guide**:
  1. Close the CRMS application completely.
  2. Open File Explorer and navigate to the following path: C:\Users\YourName\AppData\Roaming\CRMS Thesis
  3. Locate the file named clinic.db.
  4. Copy this file.
  5. Navigate to the external USB drive and create a folder named "CRMS Backups". Inside, create a folder for the current date ("2025-09-30").
  6. Paste the clinic.db file into the dated folder.

**CHAPTER 5.2 – RECOVER STEPS**

* In Case of **Data Loss** or **System Failure**:
  1. If the CRMS application is corrupted, reinstall it using the original installer file.
  2. Launch the application once to let it create a new, empty clinic.db file, then close it.
  3. Navigate to the application data folder (C:\Users\YourUsername\AppData\Roaming\CRMS Thesis).
  4. Delete the newly created empty clinic.db file.
  5. Retrieve the most recent backup copy of clinic.db from the external USB drive.
  6. Paste the backup clinic.db file into the application data folder.
  7. Launch the CRMS application. All data from the time of the last backup will now be restored.
* **Support Contact** - In case of difficulty, contact the Project Proponent immediately.

**CHAPTER VI**

**PERFORMANCE MONITORING**

**Key Performance Indicators (KPIs)**

Since the system is a local desktop application, performance is monitored through user observation and direct system analysis rather than automated tools.

|  |  |  |  |
| --- | --- | --- | --- |
| Metric | Description | Threshold | Monitoring Tool |
| Application Startup Time | The time it takes for the login screen to appear after launching the application. | Should remain under 10 seconds. | Manual Observation |
| UI Responsiveness | The perceived delay when clicking buttons, searching, or submitting forms. | The application should not feel "sluggish" or freeze during normal operations. | User Feedback |
| Resource Usage | The amount of CPU and Memory the application consumes during operation. | Should not consistently use excessive CPU (>20%) or Memory (>500 MB). | Windows Task Manager |

**CHAPTER VII**

**SECURITY MEASURES**

**Access Control**

Access is restricted to authorized personnel via username and password authentication.

**Data Protection**

User passwords are one-way hashed using bcryptjs. All database interactions use parameterized queries to prevent SQL injection.

**Physical Security**

The computer hosting the CRMS application must be physically secured within the clinic to prevent unauthorized access to the machine and the local database file.

**Data Backup Security**

The external USB drive used for backups should be encrypted and stored in a secure location.

**CHAPTER VIII**

**DOCUMENTATION UPDATES**

All changes to the CRMS that affect user interaction or system functionality will be reflected in an updated version of the User Manual. The updated manual will be provided to the clinic along with the corresponding application update.

**CHAPTER IX**

**CONCLUSION & RECOMMENDATIONS**

The long-term health of the CRMS depends on consistent adherence to this maintenance plan.

**Summary**

The plan establishes a clear process for updates, bug fixes, and critical data management.

**Recommendations**

**Prioritize Backups** - It is strongly recommended that the clinic makes the daily backup procedure a mandatory, non-negotiable part of their end-of-day closing process.

**Open Communication** - The clinic staff is encouraged to report any and all issues, no matter how small, to ensure the system can be continuously improved.