**A PROPOSED OFFERING OF DENTAL CLINIC INVENTORY AND SUPPLY MANAGEMENT SYSTEM FOR**

**MCVIL**

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**PROPOSAL**

**INTRODUCTION**

**Overview of the Project**

This system is a standalone inventory and supplies management system for Macvil Dental Clinic. The project aims to replace manual inventory tracking methods with a digital solution to improve operational efficiency and accuracy. This system will enable the clinic to effectively track its dental supplies, proactively monitor stock levels, and send timely alerts to prevent stockouts and ensure a continuous supply of essential materials.

**Background Information**

Currently, the Macvil dental clinic’s inventory of the dental consumables and supplies is managed manually which can lead to inaccuracies, stockouts, and potential waste due to expired items. The proposed system will provide a structured and automated way to monitor stock levels, and track expiration dates.

**Objectives and Goals of Project**

This system aims to:

* Maintain a centralized and updated record of all dental supplies

All supply data (like item name, quantity, and category) is stored in one system, making it easy to organize and update instead of using scattered notes or spreadsheets.

* Show real-time stock levels for quick checking

The system will instantly display how many items are currently available, so staff can immediately know if an item is in stock or running out.

* Alert the user when stocks are running low

Automatic notifications or warnings will appear when supplies reach a minimum threshold, helping prevent sudden shortages.

* Track expiration dates to avoid waste and improve safety

The system will monitor expiration dates of dental supplies, ensuring expired items are removed on time to avoid risks to patients and wasted resources.

* Provide a simple and user-friendly interface for clinic staff

The design will be easy to use even for staff with little technical knowledge, so daily inventory management becomes faster and more efficient.

* Work offline without needing an internet connection

Since the system is standalone, it can function without internet access, ensuring uninterrupted use inside the clinic at all times.

**CLIENT INFORMATION**

**Name of the client organization:** Macvil Dental Clinic

**Address:** 33 MH Del Pilar, Tugatog, Malabon City, Malabon, Philippines

**Contact information:** 0976 485 2052

**Brief Description of the Client’s Business and Industry**

Macvil Dental Clinic is a small neighborhood dental clinic in Tugatog, Malabon. They offer everyday dental services like cleaning, tooth extraction, braces, and check-ups. To do all these, the clinic uses a lot of tools and dental supplies—like gloves, masks, syringes, and other items that get used up quickly. Right now, the clinic keeps track of their supplies manually, which makes it hard to avoid running out or overbuying. That’s why they need a simple digital system that can help them manage their supplies better.

**PROJECT SCOPE**

The scope of this project is to develop and deploy a standalone, offline software system specifically for managing the clinic's dental inventory.

**Specific Deliverables**

* A fully functional, standalone desktop application for Windows.
* A simple, user-friendly interface for managing inventory.
* A user manual and basic training for clinic staff.
* An inventory database containing all specified items.

**Expected Outcome**

* Improved accuracy in inventory counts and stock level reporting.
* Reduced risk of stockouts for critical dental supplies.
* Minimized waste through better tracking of item expiration dates.
* Increased operational efficiency by streamlining inventory management tasks.

**Inclusions**

Tracking of consumable and finite dental supplies only such as gloves, masks, syringes, bonding agents, composite resins.

* Features for adding, updating, and removing stock items.
* Low-stock level alerts and notifications.
* Expiration date tracking and alerts.
* Basic reporting functionality such as a list of low-stock items or items nearing expiration.
* User authentication with a single user account.

**Exclusions**

* Tracking of non-consumable equipment or assets such as dental chairs and x-ray machines.
* Financial or accounting features such as order supplies, vendor invoices, and payment tracking.
* Integration with other clinic systems such as patient management software.
* Multi-user access, network sharing, or cloud-based functionality.
* Mobile version

**Assumptions and Constraints**

* + It is assumed that the clinic will provide a dedicated computer for the system.
  + All requirements will be finalized and approved before the start of the development phase.
* The project will be developed as a standalone, offline system and will not require internet connectivity.

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Sprint 2: Basic Inventory Features

Sprint 1: Discovery & Setup

01

Create database tables (supplies, quantity, category, expiration) and basic add/update UI.

Gather requirements, prioritize features, set up development environment.

Sprint 4: Advanced Features

Sprint 3: Core Management Functions

04

03

Improve alert system, add filtering, expiration tracking.

View/search inventory, edit/delete items, add low-stock alerts.

Sprint 5: Testing & Refinements

Sprint 6: Deployment & Training

06

05

Install system, provide staff walkthrough, collect feedback for next iteration.

Functional testing, bug fixes, UI polish..

Configure 1

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| --- | --- | --- | --- | --- |
| **Phase** | **Estimated Duration** | **Start Date** | **End Date** | **Key Deliverables / Milestones** |
| Planning& Basic Requirements | 2 Weeks | 1 Sep 2025 | 14 Sep 2025 | Basic requirements document Project plan |
| Simple Design | 2 Weeks | 15 Sep 2025 | 28 Sep 2025 | Basic design sketches Database scheme |
| Core Development | 6 Weeks | 29 Sep 2025 | 9 Nov 2025 | Functional core system prototype |
| Testing& Refinement | 2 Weeks | 10 Nov 2025 | 23 Nov 2025 | Tested system version |
| Deployment& Handover | 6 Weeks | 24 Nov 2025 | 30 Nov 2025 | Deployed system; User guide |
| **TotalProject Duration** | **13 Weeks** | **1 Sep 2025** | **30 Nov 2025** | Completion |

**Table 1**

**Dependencies and Critical Paths**

* The timeline is dependent on timely feedback and approval from Macvil Dental Clinic during the Discovery & Design phase.
* Defining basic requirements is crucial before starting design.
* Core development relies directly on the approved simple design.
* Testing must be completed before final deployment.

**PROJECT APPROACH**

The approach remains similar to your original plan but adapted for web-based offline deployment.

1. **Requirements Gathering** – Confirm all inventory features with the clinic staff.
2. **System Design** –
   * Create the UI wireframes using HTML/CSS mockups.
   * Design the SQLite database schema for supplies, categories, stock levels, and expiration dates.
3. **Development** –
   * Build frontend pages for adding, updating, deleting, and viewing inventory items.
   * Implement Flask routes to handle all backend operations.
   * Use Python scripts to trigger low-stock and expiration alerts.
4. **Testing** – Test all functionalities offline in a local environment.
5. **Deployment** – Package the system so it runs locally on the clinic’s computer using Python and a local server (Flask + SQLite).

**EXPECTED OUTCOME (Same Goals, Different Tech)**

* Inventory can be managed through a local browser interface without internet.
* All data stored in an SQLite file for portability.
* Alerts for low-stock and expiration dates powered by Python backend logic.

|  |  |
| --- | --- |
| **Risk** | **Mitigation** |
| Python or Flask compatibility issues on clinic computer | Install Python runtime and test the packaged app before handover |
| Data loss if database file is deleted | Regular backups of the SQLite database file |
| Staff unfamiliar with web-based UI | Provide short training and simple documentation |
| Browser compatibility issues | Test system in at least two major browsers |

**Table 2**

**PROJECT RESOURCES**

**Hardware**

* **Development Computer** – My personal laptop/desktop for all development work.
* **Clinic Computer** – One existing computer at Macvil Dental Clinic for system installation and offline access.

**Software**

* **Frontend:**
  + HTML5 for structure.
  + CSS3 for styling (with optional Bootstrap for responsive design).
  + JavaScript (Vanilla JS for interactivity, or optional frameworks like Vue.js if needed).
* **Backend:**
  + Python 3.x using Flask (lightweight framework for building the application).
* **Database:**
  + SQLite (lightweight, file-based database for offline usage).
* **Development Tools:**
  + Code Editor: Visual Studio Code (or any preferred IDE).
  + Browser: Google Chrome or Mozilla Firefox for testing UI.
  + SQLite Browser (for direct viewing/editing of database if needed).

**Human Resources**

* **Myself** – Sole developer handling the full-stack development (frontend, backend, database).
* **Macvil Dental Clinic Staff** – For requirement gathering, feedback, and testing.

**PROJECT GOVERNANCE**

**Project Developer (Angelo Bugawan):** In charge of everything — planning, designing, coding, testing, and installing the system.

**Clinic Owner:** Gives the developer the information needed about their supply problems, checks on the progress, and helps decide on anything important.

**Clinic Staff:** They’ll give feedback and try out the system to make sure it’s simple and works well for daily use.

**Adviser:** Makes sure the project follows the rules and goals set by the school and gives advice when needed.