

**PILLPOINT: COMPREHENSIVE ONLINE PHARMACY SERVICES**

**A System Manual by**

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## **I. Project Identification**

### **A. Description of the Project**

PillPoint, a software project aimed at revolutionizing access to medical supplies in Butuan City, aligns with the growing trend of using mobile applications to enhance healthcare accessibility and patient empowerment. This innovative platform seeks to address challenges in medication accessibility, which is a significant issue in many areas, including the Philippines. Through cutting-edge technology, PillPoint aims to create a user-friendly platform that connects consumers with local pharmacies, streamlining the process of locating and purchasing essential medications. The app will provide a comprehensive directory of pharmacies, enabling users to find nearby stores based on their specific needs, mirroring the objectives of similar applications described in the literature. Moreover, PillPoint will offer detailed information about products, including pricing, availability, and reviews, empowering consumers to make informed decisions about their healthcare purchases (Tinam-isan et al., 2024; Ghodeswar et al., 2020).

In addition to its core features, PillPoint will prioritize user experience and accessibility, featuring an intuitive interface, easy navigation, and personalized recommendations tailored to individual preferences. By addressing the challenges faced by consumers in traditional pharmacy settings, PillPoint aims to enhance healthcare accessibility, promote patient empowerment, and contribute to the overall well-being of the community. The integration of Geographic Information System (GIS) technology for locating nearby pharmacies is a significant feature that can greatly enhance the efficiency of pharmacy searches and improve overall accessibility to medications. While PillPoint shows great promise, it's important to

consider potential challenges such as data security, privacy, and content reliability. By leveraging mobile technology to improve healthcare accessibility in Butuan City, PillPoint has the potential to make a meaningful impact on community health and well-being (Tinam-isan et al., 2024; Maghinay et al., 2021)

## B. Objectives of the Project

The PillPoint project is dedicated to enhancing the accessibility and convenience of acquiring medical supplies for residents of Butuan City. With this goal in mind, we have established the following specific objectives:

1. **Develop a user-friendly interface:** Create an intuitive and visually appealing platform that facilitates easy navigation and product discovery.
2. **Provide comprehensive product information:** Offer detailed descriptions, images, and pricing information for a wide range of medical products.
3. **Facilitate product discovery:** Enable users to search for products by applying various filters, ensuring convenient browsing.
4. **Implement a reliable pharmacy locator:** Enable users to find nearby pharmacies based on their location and specific requirements.
5. **Facilitate secure online ordering and delivery:** Provide a secure payment gateway and efficient delivery services to ensure the timely receipt of products.
6. **Implement a feedback and review system:** Enable users to share experiences and insights, fostering a sense of community and trust.
7. **Integrate a chatbot for medical assistance:** Provide users with basic medical information and advice, offering a convenient and accessible resource.

8. **Provide a messaging system:** Enable direct communication with pharmacies for inquiries, clarifications, or feedback to the website host.
9. **Provide a management system:** Enable pharmacies or pharmacists to maintain transparency regarding their inventory or medicine stocks for potential customers.
10. **Implement basic security measures:** PillPoint will adhere to strict data protection standards to safeguard user information.

**Table 1: The User, The Task, and The Interface**

The User	The Task	The Interface
<b>1. Potential Customer</b>	Product Search and Discovery	A website that allows filtering by product categories, brands, and keywords.
	Product Information	Detailed product pages with descriptions, images, pricing, and availability.
	Pharmacy Locator	A map-based tool to find nearby pharmacies with the availability of desired products.
	Medical Assistance Support	<b>Chatbot Page</b>
	Authentication	<b>Login and Sign-up</b>
	Contact customer support	<b>Contact page (form)</b>
<b>2. Pharmacists</b>	Inventory Management	Integrated system for pharmacy inventory system
	Customer Communication	Secure messaging system and feedback collection
	Medical Assistance Support	<b>Chatbot Page</b>
	Authentication	<b>Login and Sign-up</b>

The features in Table 1 align with PillPoint's core objectives of improving the accessibility and effectiveness of acquiring medical supplies. PillPoint aims to empower users with an intuitive interface equipped with robust search and browsing features, streamlining the process of finding the necessary items. In addition, including a pharmacy locator and comprehensive product details enhances informed decision-making and overall convenience.

PillPoint provides pharmacists with a comprehensive system for managing prescriptions, inventory, and customer interactions. This streamlined approach enhances operational efficiency and ensures that patients receive accurate and timely assistance.

In summary, the features highlighted in Table 1 emphasize PillPoint's dedication to providing a valuable and user-friendly platform for consumers and healthcare professionals.

### C. The Scope of the Project

The purpose of this project is to improve the accessibility of medical supplies in Butuan City by creating and implementing a user-friendly platform that connects customers with local pharmacies. The platform, PillPoint aims to:

#### **1. Geographical Scope:**

The study will focus on Butuan City, including all registered pharmacies in it. Data on pharmacy locations, stock availability, price, and delivery capabilities will be gathered to ensure a complete picture of the city's medical supply ecosystem.

#### **2. Users:**

The target audience is all Butuan City residents, with a concentration on those who have difficulty accessing medical supplies, such as people with limited mobility, elderly patients, and rural residents. The software will also support pharmacy operators by offering capabilities for inventory management, order processing, and delivery coordination.

### **3. Limitation:**

The study is limited to Butuan City, and the findings may not be directly applicable to larger cities with more complex logistical challenges. Additionally, the study will focus primarily on over-the-counter (OTC) medications and medical supplies rather than prescription medications, which involve additional regulatory requirements.

### **D. Rationale and Benefits of the Project**

PillPoint is a proposed web application that aims to address the significant challenges faced by individuals in Butuan City when it comes to accessing essential medical products. The project responds to the growing need for convenient and effective healthcare solutions, particularly in remote or underserved areas. By leveraging technology, PillPoint seeks to link consumers with local pharmacies through a centralized platform that facilitates product discovery, information access, and procurement.

The development of PillPoint aligns with the principles of Human-Computer Interaction (HCI) by emphasizing user experience and accessibility. The application is designed to be user-friendly and intuitive, catering to a diverse range of individuals, including medical students, specifically those with limited technological proficiency. With features such as an intuitive interface,

comprehensive product details, and a reliable pharmacy locator, PillPoint aims to enhance the healthcare experience and enable individuals to make well-informed decisions about their medical needs.

PillPoint offers a multitude of benefits for individuals and the community of Butuan City. By addressing the challenges associated with accessing medical products, the application provides a valuable solution that enhances healthcare accessibility, convenience, and decision-making. The following benefits highlight the positive impact of PillPoint on the community:

### **Increased Accessibility to Essential Medicines**

PillPoint provides a streamlined and centralized platform that improves access to medical products for residents of Butuan City, particularly those in remote or underserved areas. This ensures that individuals can obtain the healthcare products they need without having to travel long distances to multiple pharmacies.

### **Convenience and Time-Saving**

The application simplifies the process of discovering, comparing, and purchasing medical products. By allowing users to browse multiple pharmacies from a single platform, PillPoint saves users time and effort, offering a more efficient way to fulfill their healthcare needs.

### **Support for Local Pharmacies**

PillPoint strengthens the relationship between local consumers and community pharmacies. By providing a platform for local businesses to list their

products, it boosts the visibility and business of pharmacies in Butuan City, contributing to the local economy.

### **Improved Healthcare Decision-Making**

By offering a reliable pharmacy locator and detailed product information, PillPoint empowers users to make better decisions regarding their healthcare needs. This leads to improved self-care and better management of personal health.

### **User-centered Design and Usability**

Built with Human-Computer Interaction (HCI) principles, PillPoint is designed to be intuitive and accessible, even for users with limited technological skills. The user-friendly interface, combined with detailed product information, ensures that users can navigate the platform easily and make informed purchasing decisions.

## **II. Project Context**

### **A. Description of the User**

PillPoint is designed to cater to a diverse range of individuals residing in Butuan City who require access to medical products. The target audience includes students seeking essential supplies for their studies, healthcare professionals in need of specialised equipment or medications, patients requiring prescription drugs or over-the-counter remedies, caregivers purchasing products for dependents, and individuals seeking general health and wellness items. Pillpoint is highly focused on providing and addressing the diverse needs of these user groups in general scope, PillPoint aims to provide a comprehensive and inclusive platform for medical product procurement.

### **B. Description of the Task/Goal**

PillPoint seeks to revolutionize the way individuals in Butuan City access and purchase medical supplies. The project's primary goal is to streamline the process of product discovery, information, and procurement, offering a convenient and efficient solution for users. By providing a centralized platform that connects consumers with local pharmacies, PillPoint aims to enhance accessibility, reduce the time and effort required to find necessary products and empower individuals to make informed decisions about their healthcare needs. Additionally, the project seeks to support local businesses and promote healthcare empowerment within the community by providing a platform for pharmacies to showcase their products and reach a wider customer base.

## C. Description of the Equipment

### **1. Hardware:**

The development of the e-commerce pharmacy website was carried out using personal computers with specifications including Intel i5/i7 processors, 8GB to 32GB of RAM, and HDD and SSD storage to ensure the smooth operation of development tools and local environments.

### **2. Software Stack :**

Recent research highlights the effectiveness of using React and Node.js for developing e-commerce platforms, especially for pharmacy websites. React's component-based architecture allows developers to create fast, responsive, and visually appealing user interfaces, which are essential for providing seamless online shopping experiences. Meanwhile, Node.js, as part of the MERN stack, enables efficient server-side operations and smooth data management between the frontend and backend (Bhatt et al., 2024; Oghlukyan & Karapetyan, 2022; Pokhriyal et al., 2024).

These technologies offer modularity, scalability, and ease of maintenance, which are crucial for adapting to changing business needs. The integration of React and Node.js in e-commerce platforms supports features like product browsing, purchasing, and order management. Moreover, utilizing these technologies can potentially reduce development costs and time when compared to traditional methods. Overall, React and Node.js provide a strong foundation for building modern, efficient, and user-friendly

e-commerce websites in the pharmaceutical sector (Bhatt et al., 2024; Oghlukyan & Karapetyan, 2022; Sarwar et al., 2023).

### **3. Development Tools:**

- **Visual Studio Code:** The primary code editor used for developing the project, with extensions for linting, debugging, and Git integration.
- **Git and GitHub:** Git was used for version control, while GitHub served as a central repository for team collaboration and code management.

## D. Description of the Environment

### **1. Development Setup:**

#### - **Operating Systems:**

The team mainly works on Windows systems and web integration for compatibility.

#### - **Local Servers:**

Developers use Node.js to run local servers, letting them instantly test changes without full deployment.

#### - **Version Control:**

Git and GitHub manage code changes, allowing easy collaboration and tracking among team members.

### **2. Security:**

#### - **Authentication:**

Secure login methods protect user accounts and data privacy.

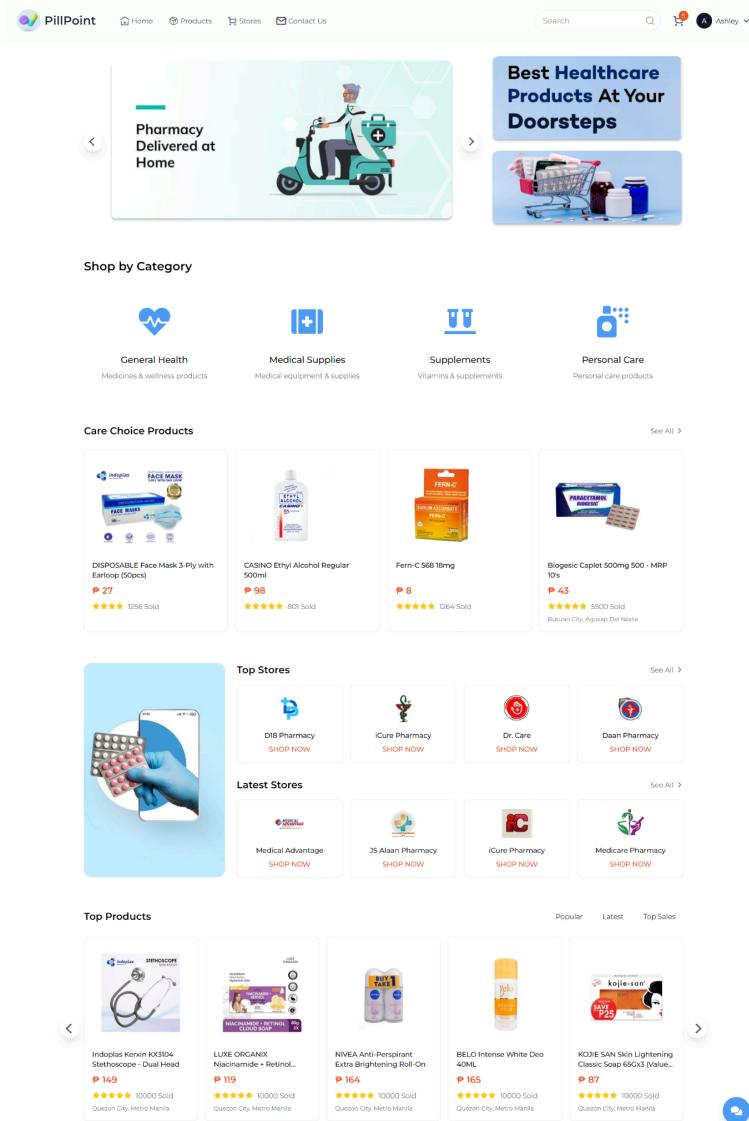
### **III. Project Design**

#### **A. Development Framework**

## B. User Interface Design

### I. Client Side

#### 1. Home Page:



**Figure 1: Home Page**

#### Description:

- The main landing page welcomes users with a dynamic banner slider and provides quick access to various healthcare products and services.

#### Contents:

- **Banner Carousel:** Rotating promotional banners with healthcare products
- **Quick Categories:** Medical supplies, supplements, personal care, general health
- **Care Choice Section:** Featured healthcare selections
- **Store Highlights:** Popular and trusted pharmacy stores
- **Top Products:** Best-selling items with sorting (Popular/Latest/Top Sales)

## 2. Product Pages

The screenshot shows a product page from PillPoint. At the top, there's a navigation bar with links for Home, Products, Stores, Contact Us, and a user profile for 'Ashley'. Below the navigation is a search bar and a sort dropdown set to 'Popular'. On the left, there are two filter sections: 'Categories' (listing General Health, Medical Supplies, Supplements, Personal Care) and 'Rating' (with options for 5 Stars, 4 Stars & Up, 3 Stars & Up, 2 Stars & Up, and 1 Star & Up). A 'Clear All' button is also present. The main content area displays a grid of 16 product cards, each with an image, name, price, and rating. The products include various medications and supplies like CASINO Ethyl Alcohol Regular, SATOCHI Japan Diabetes Effervescent Tablets, SIMPLE Green Tea Capsule Supplement, FERN-C 568.18mg, SLEEPASIL Capsule, SALONPAS Medicated Patch 10s, VICKS VapoRub 25g, BETADINE Solution 120ml, OMRON Arm Type Blood Pressure Monitor, ENFAGROW A+ Four Powder 1.8kg, DIFFLAM Forte Throat Spray 15ml, INDIOPLAS Powder Free Examination Latex Gloves (100pcs), Koi Herbal Capsules 550 Mg, BIOGESIC Caplet 500mg, SATOCHI Japan Diabetes Effervescent Tablets, Indoplus Konkin XX3104 Stethoscope - Dual Head, CASINO Ethyl Alcohol Regular 500ml, DISPOSABLE Face Mask 3-Ply with Earloop (50pcs), Phlife 20-65mm Colostomy Bag for Baby AOD Ostomy Bag, and HYGIENIX Hygienix Germkill Mega Menthol Soap 125G Triple. Below the grid, there are three small navigation dots (1, 2, 3). At the bottom, there's a section titled 'You Might Like' featuring four more product cards: Koi Herbal Capsules 550 Mg, BIOGESIC Caplet 500mg, SATOCHI Japan Diabetes Effervescent Tablets, Indoplus Konkin XX3104 Stethoscope - Dual Head, CASINO Ethyl Alcohol Regular 500ml, DISPOSABLE Face Mask 3-Ply with Earloop (50pcs), Phlife 20-65mm Colostomy Bag for Baby AOD Ostomy Bag, and HYGIENIX Hygienix Germkill Mega Menthol Soap 125G Triple.

*Figure 2: Product Page*

## Description:

- Detailed product listings are organized by categories with comprehensive filtering and sorting options.

## Contents:

- **Product Gallery:** Multiple product images
- **Product Info:** Name, price, rating, stock status
- **Shipping Options:** Standard/Express delivery
- **Store Information:** Seller details, ratings, chat response rate
- **Product Description:** Features, specifications
- **Related Products:** "You Might Also Like" section

### 3. Product Details Page

The screenshot shows the product details page for 'CASINO Ethyl Alcohol Regular 500ml' on the PillPoint platform. At the top, there's a navigation bar with links for Home, Products, Stores, and Contact Us. A search bar and a user profile icon are also present. The main product image is a white bottle of 70% isopropyl alcohol labeled 'CASINO'. Below the image, the product name 'CASINO Ethyl Alcohol Regular 500ml' is displayed, along with a 5-star rating, 0 reviews, and 0 items sold. The price is listed as ₱ 98. Shipping options include P30 (10 hours) and P50 (5 hours). The seller information shows a Medical Advantage store with a rating of 4.5 stars, 45.2K followers, and a member since 2022. The 'Chat Response Rate' is 79%. There are 'Add to Cart' and 'Buy Now' buttons. The 'Product Description' section includes a '70% Solution Ethyl Alcohol for Antiseptic Disinfection' and 'Hospital-Grade Disinfectant for Personal and Professional Use'. The 'Features' section lists: Quick-Drying Formula, No Sticky Residue, Pleasant Mild Scent, and With Moisturizing Agents to Prevent Skin Dryness. The 'Specifications' section includes: 70% Ethyl Alcohol Content, FDA Approved, 500ml Bottle with Secure Cap, Kills 99.9% of Germs, Added Moisturizers, 2 Years Shelf Life, Made in Philippines, and External Use Only. The 'Reviews' section shows a 4.5 star rating from 2 reviews. Two reviews are listed: one from Maria\*\*\* (2024-03-15) and one from John\*\*\* (2024-03-10). The 'You Might Also Like' section recommends other products like NEUROGEL TAB 911 PR, INDOPLAS Powder-Free Examination Latex Gloves, LUXE ORGANIX Nasalmucin + Retinol Clou., and Daxion C 75ml/50ml. The bottom of the page has a footer with social media icons and a copyright notice.

**Figure 3: Product Details Page**

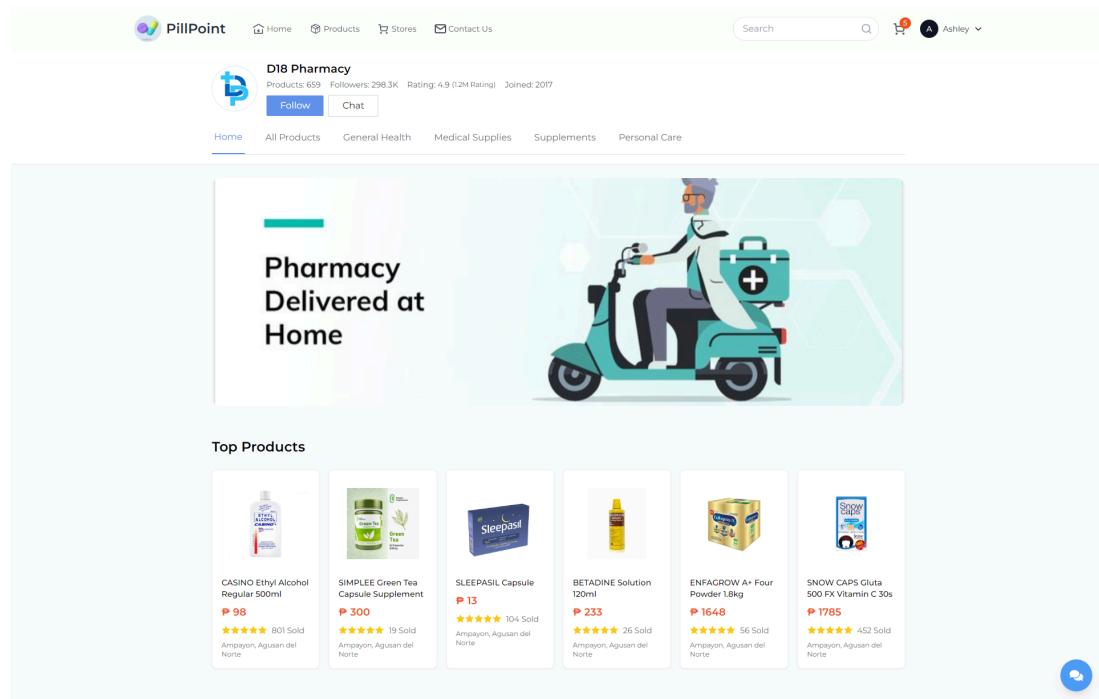
### Description:

- Detailed product information and purchasing options

### Contents:

- **Product Images:** Multiple views
- **Core Details:** Price, ratings, availability
- **Description:** Features, specifications
- **Shipping Options:** Standard/Express delivery
- **Reviews Section with Modal:** User feedback and ratings
- **Similar Products:** Related recommendations

## 4. Store Front Page



*Figure 4: Store Front Page*

### Description:

- Dedicated store profile and product catalog

## Contents:

- **Store Header:** Rating, followers, member status
- **Store Analytics:** Chat response time, product count
- **Product Categories:** Filtered product views
- **Store Banner:** Promotional content
- **Top Products Grid:** Best-selling items
- **Product Sorting:** Latest, price, popularity options

## 5. Store Locator Page

The screenshot shows the PillPoint Store Locator page. At the top, there is a navigation bar with links for Home, Products, Stores, and Contact Us. On the right side of the header, there is a search bar, a shopping cart icon, and a user profile for 'Ashley'. Below the header, the page is titled 'Map' and features a table titled 'Stores Ordered'.

Stores Ordered	Price	Availability	Address
Product 1 Variation: Red	₱ 49	45	Ampayon, Agusan Del Norte
Product 2 Variation: Red	₱ 49	45	Ampayon, Agusan Del Norte
Product 3 Variation: Red	₱ 49	45	Ampayon, Agusan Del Norte
Product 4 Variation: Red	₱ 49	45	Ampayon, Agusan Del Norte
Product 5 Variation: Red	₱ 49	45	Ampayon, Agusan Del Norte
Product 6 Variation: Red	₱ 49	45	Ampayon, Agusan Del Norte

To the right of the table is a map showing the location of Ampayon, Butuan, Philippines. The map displays several rivers and roads, with a yellow route line and a blue pin marking the store's location. The map also includes labels for Sumilhon, Pianing, Tagubo, and Anticala. A small Mapbox logo is visible at the bottom left of the map area.

Figure 5: Store Locator Page

## Description:

- Dedicated General Store Inventory and Map Locator

## Contents

- **Search bar:** Inventory and Location
- **Registered Product Inventory:** name, price, availability, and address
- **Map:** API Map Interface

## 6. User Profile

The screenshot shows the PillPoint user profile interface. At the top, there's a navigation bar with the PillPoint logo, Home, Products, Stores, Contact Us, a search bar, a shopping cart icon with a '6' notification, and a user dropdown for 'Ashley'. Below the navigation, there are sections for 'All Orders' (listing 'To Received', 'Complete', and 'Cancelled' tabs), 'Order ID: ORD001' (Paracetamol, 2 units, P300, status 'To be Delivered'), and 'Order ID: ORD002' (Vitamin C, 1 unit, P200, status 'To be Delivered'). Both orders show a timeline with 'Order Placed' and 'Processing' steps. A 'My Reviews' section below shows 'No reviews yet'. On the right side, there's a profile summary with a large circular profile picture, 'Edit profile' and 'Logout' buttons, and fields for Gender (Not specified), Status (Not specified), Education (Not specified), Location (Ampayon, Agusan Del Norte), Contact Information (Not specified), About Me (No bio provided), Tags, and a Following section listing Anthony Taylor, Matthew Martinez, and Ashley Robinson.

**Figure 6: User Profile**

### Description:

- Personal account management

### Contents:

- **Order History:** Past purchases
- **Account Settings:** Personal info
- **Delivery Addresses:** Saved locations
- **Review Section:** Reviewed Products

## 7. Order Process Pages

### A. Cart Page:

- **Product Summary:** Items, quantity, price
- **Shipping Options:** Delivery methods
- **Total Calculation:** Items + shipping

### B. Checkout Page:

- **Delivery Details:** Address, contact
- **Payment Options:** Available methods
- **Order Summary:** Final review

### C. Order-Check Page:

- **Order Status:** Processing/Shipped
- **Delivery Timeline:** Expected arrival
- **Payment Details:** Amount, method used

**Shopping Cart**

Product	Quantity	Price	Action
 Biogesic Caplet 500mg 500 - MRP 10's Variation: blue	- + 5	₱ 43	<a href="#">Delete</a>
Standard (₱30) <a href="#">Change</a>			

[Proceed to Checkout](#)

**You Might Also Like**

  
Portable 7 Compartment Miniature First Aid...  
₱ 107  
★★★★★ 100 Sold  
Quezon City, Metro Manila

  
COLGATE Plax 500ml Fresh Tea  
₱ 247  
★★★★★ 721 Sold  
Quezon City, Metro Manila

  
SATOCHI BEST 12 DIABETES  
₱ 989  
★★★★★ 1 Sold  
Ampayon, Aguinaldo del Norte

  
CASINO Ethyl Alcohol Regular 500ml  
₱ 98  
★★★★★ 891 Sold  
Ampayon, Aguinaldo del Norte

  
SIMPLLEE Green Tea Capsule Suplement  
₱ 300  
★★★★★ 19 Sold  
Ampayon, Aguinaldo del Norte

**Checkout**

\* Delivery Address  
Eddie Jr De Pedro (+63)12345678  
Ampayon, Butuan City [Change](#)

**Products Ordered**

 Biogesic Caplet 500mg 500 - MRP 10's Variation: blue  
Quantity: 5 [CHANGE](#)

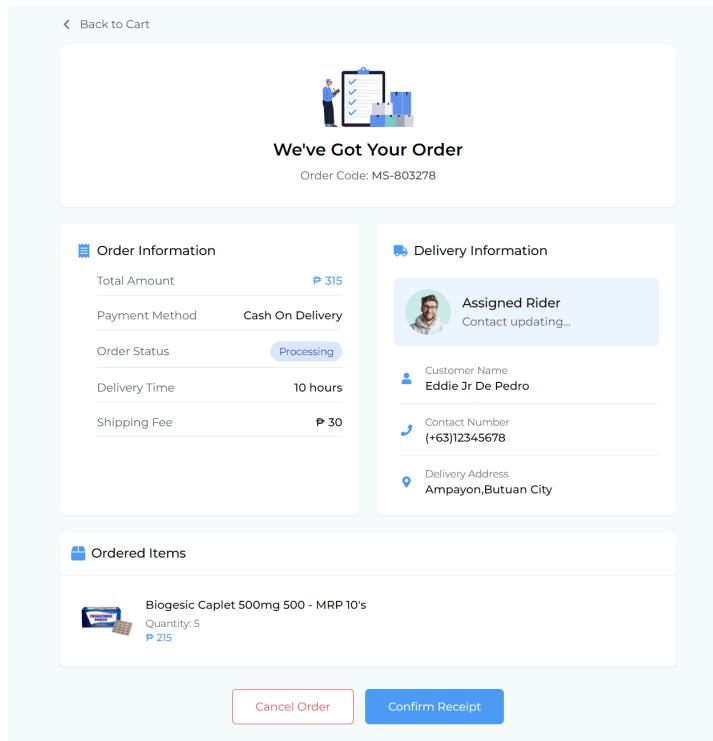
Shipping Option: Standard Delivery  
Get By 15-18 Mar [CHANGE](#)

**Payment Method**  
Cash On Delivery [CHANGE](#)

Merchandise Subtotal: ₱ 215  
Shipping Total: ₱ 100  
Total Payment: ₱ 315

[Place Order](#)

Figure 7: Cart & Checkout Page



**Figure 8: Order-Check Page**

## 8. Chat Support and Contact Us

### A. Chat Support

- **Description:**
  - Interactive support system
- **Contents**
  - **Quick Actions:** Common queries and locations
  - **Chat Interface:** Real-time messaging
  - **Contact Options:** Direct communication channels

### B. Contact Page

- **Description**
  - Communication channels and support information
- **Contents**

- **Contact Details:** Phone, email, location
- **Social Media:** Platform links
- **Support Hours:** Availability information
- **Office Location:** Physical address

The image displays three screenshots of the PillPoint mobile application interface, illustrating the integration of a chatbot, a full-page chat interface, and a contact form.

**Chatbot Modal:** This screenshot shows a floating chatbot window. At the top left is a blue circular icon with a white robot head. To its right, the text "Hi, User 1" is displayed, followed by "Can I help you with anything?". Below this are two cards: "Find nearest pharmacy" (with a location pin icon) and "Popular medicines" (with a medicine bottle icon). At the bottom of the window is a text input field containing "Ask PillPoint anything..." and a blue "Send" button.

**Chatbot Full Page:** This screenshot shows the full mobile application screen. At the top center is the text "How Can We Help You?". Below it is a subtext: "We're here to help and answer any questions you might have". To the right are three sections: "Business Hours" (Monday - Friday, 8am - 6pm; Saturday, 9am - 5pm), "Customer Support" (24/7 Live Chat Support, Response time: ~5 minutes), and "FAQ Section" (Find quick answers to common questions, visit [FAQ](#)). The main area is titled "Contact Information" and includes fields for "Phone Support" (+69 000 000 000), "Email Us" (support@pillpoint.com), and "Main Office" (Butuan City, Agusan Del Norte). It also features a "Connect With Us" section with social media icons for Twitter, Facebook, and Instagram. On the right side of this section is a "Contact Us" form with fields for First Name, Last Name, Email Address, Phone Number, Subject (set to "General Inquiry"), and a Message area with a placeholder "Please describe your inquiry in detail...". A blue "Send Message" button is at the bottom of the form.

**Contact Us Page:** This screenshot shows a large, semi-transparent overlay of the "Contact Us" form from the previous screenshot. The overlay has a blue header with "Hi, User 1" and the message "Ready to assist you with anything you need, from answering questions to providing recommendations.". Below this is a "Quick Actions" section with three cards: "Ampayon" (Closest pharmacy in your location), "Say Hello..." (Start asking questions now...), and "Most Sold Medicine" (Ask what type of medicine to take). At the bottom of the overlay is a text input field with "Ask PillPoint anything...", a blue "Send" button, and a blue circular icon with a white robot head.

**Figure 9: Chatbot modal, Chatbot Full Page & Contact Us Page**

## II. Seller Side

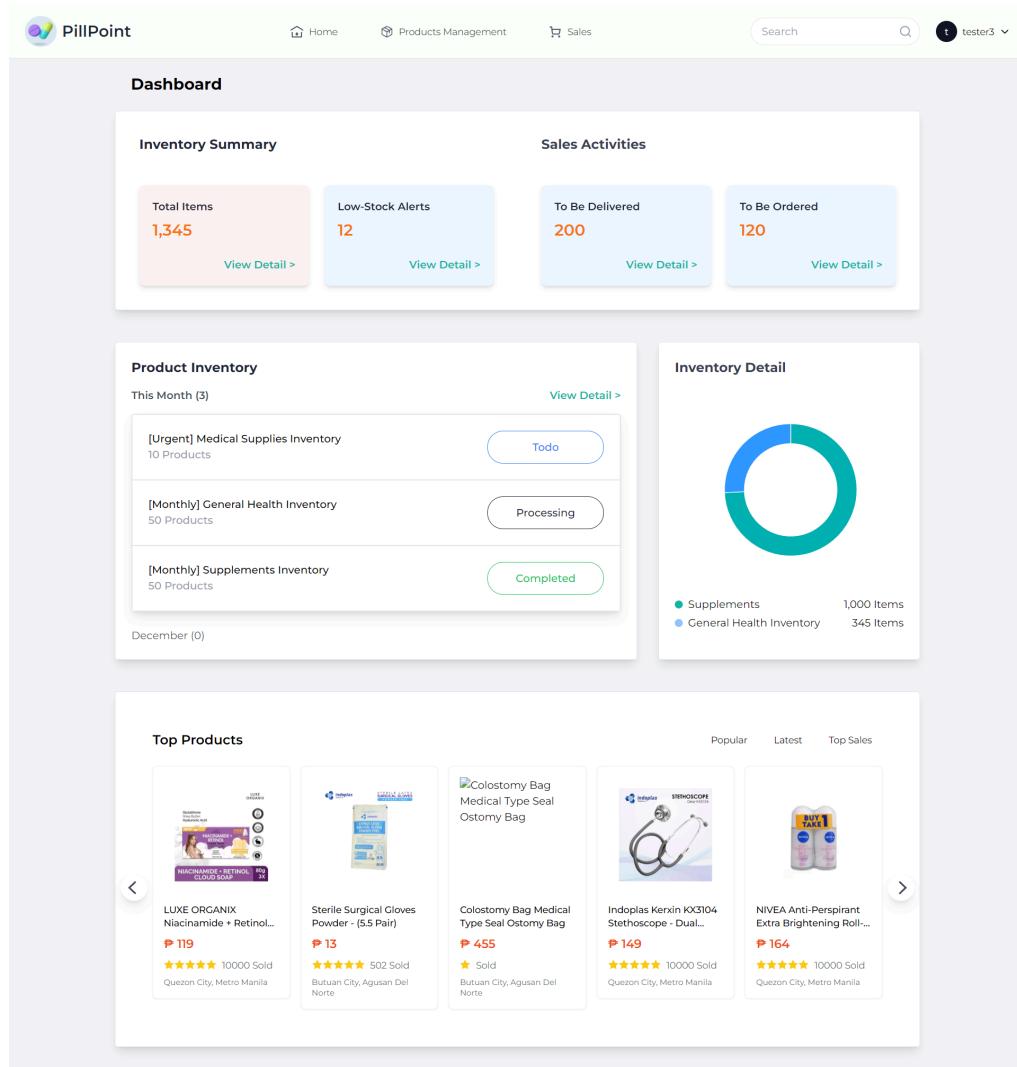
### 1. Dashboard

#### Description:

- A central hub for store management and performance metrics

#### Contents:

- **Inventory Summary:** Total items, low-stock alerts
- **Sales Activities:** Delivery queue, pending orders
- **Performance Metrics:** Sales trends, revenue stats
- **Quick Access:** Common management tasks



**Figure 10: Seller Dashboard**

## 2. Product Management

### Description:

- Comprehensive product inventory control

### Contents:

- **Product List:** Grid/list view options
- **Product Details:** Product detail description and other specific fields
- **Quick Actions:** Edit, delete, status toggle
- **Advanced Settings:** Pricing, inventory, variants view and update
- **Bulk Actions:** Mass update/delete
- **Search & Filter:** Category, status, price range

The screenshot shows the PillPoint Product Management interface. At the top, there is a navigation bar with links for Home, Products Management, Sales, a search bar, and a user account section. Below the navigation bar is a header titled "Product Management" with a "See All" link and a "+ Create New Product" button.

The main area displays a grid of products. Each product card includes an image, the product name, price, quantity sold, location, and two action buttons: "Edit" and "Advanced".

Image	Product Name	Price	Quantity Sold	Location	Action Buttons
	Sterile Surgical Gloves Powder - (5.5 Pair)	₱13	502 Sold	Butuan City, Agusan Del Norte	Edit Advanced
	Colostomy Bag Medical Type Seal Ostomy Bag	₱455	0 Sold	Butuan City, Agusan Del Norte	Edit Advanced
	Examination Gloves Box Of 100 (Medium) - 1 Box	₱149	2000 Sold	Quezon City, Metro Manila	Edit Advanced
	Surgical Scrub Brush Medical Hand Washing Brushes...	₱79	100 Sold	Quezon City, Metro Manila	Edit Advanced
	Indoplas Kerxin KX3104 Stethoscope - Dual Head	₱149	10000 Sold	Quezon City, Metro Manila	Edit Advanced
	Indoplas 10cc Disposable Syringe Box	₱230	7400 Sold	Quezon City, Metro Manila	Edit Advanced
	Warmhouse 800D Electric Centrifuge Machine Lab...	₱2349	30 Sold	Quezon City, Metro Manila	Edit Advanced
	Indoplas Powder Free Examination Latex Gloves Bo...	₱159	10000 Sold	Quezon City, Metro Manila	Edit Advanced

At the bottom of the grid, there are page navigation buttons labeled "1", "2", and "Next".

**Add New Product**

**Basic Information**

- Product Name: [Input]
- Category: Medical Supplies
- Location: Select Location

**Pricing & Stock**

- Price: [Input]
- Quantity: [Input]
- Unit Type: Item
- Expiry Date: dd/mm/yyyy

**Description**

- Main Description: [Text Area]
- Location: Select Location
- Location: Select Location

**Pricing & Stock**

- Price: [Input]
- Quantity: [Input]
- Unit Type: Item
- Expiry Date: dd/mm/yyyy

**Edit Product Details**

**General Information**

- Product Title: Colostomy Bag Medical Type Seal Ostomy Bag
- Category: General Health
- Description: Pediatric Colostomy Collection System  
Comfortable and Secure Ostomy Care Solution for Children

**Product Features**

- Skin-Friendly Adhesive
- Odor-Proof Seal
- Comfortable Fit
- Easy to Apply and Remove

**Specifications**

- Child-Specific Size
- Hypoallergenic Material
- Leak-Proof Design
- Disposable
- Includes Adhesive Seal
- Medical Grade
- Box of 10 Bags
- CE Certified

**Buttons:** Save as Draft, Preview, Publish

**Figure 11: Product Management and Modals (Add and Edit)**

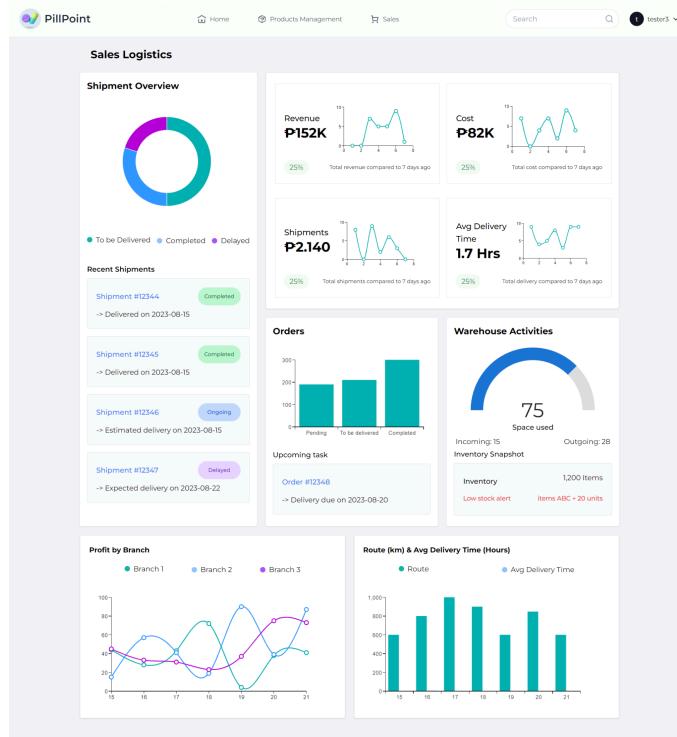
### 3. Sales & Logistics

#### Description:

- Order and delivery management system

#### Contents:

- **Shipment Tracking:** Status, timeline
- **Order Statistics:** Completion rates
- **Warehouse Activities:** Space usage, stock flow
- **Branch Performance:** Multi-location metrics
- **Delivery Analytics:** Time, success rate



**Figure 12: Sales Logistics**

#### 4. Seller Profile

##### Description:

- Store and seller information management

##### Contents:

- **Overview Tab:**

- **Store Info:** General Info of the Store
- **Store Metrics:** Response rate, fulfilment
- **Business Hours:** Operating schedule
- **Performance Stats:** Ratings, completion scores

- **Documents Tab:**

- **Business Permits: Registration, licences**
- **Certifications: FDA, pharmacy permits**
- **Document Status: Valid/expired tracking**

- **Reviews Tab:**
  - **Customer Feedback: Ratings, comments**
  - **Response Management: Reply to reviews**
  - **Rating Analytics: Performance trends**
- **Settings Tab:**
  - **Store Settings: Name, location, type**
  - **Account Security: Password, 2FA**
  - **Notification Preferences: Alerts setup**

The screenshot displays the PillPoint Seller Profile interface. The top navigation bar includes links for Home, Products Management, Sales, and a search bar. Below the navigation, there are two main sections: the left sidebar and the main content area.

**Left Sidebar:**

- PillPoint Store 1** (Pharmacy Store, Ampayon, Agusan Del Norte)
- Profile Completion:** 80% (progress bar)
- Quick Actions:** Add Product, View Orders
- Business Hours:** Monday - Friday: 9:00 AM - 6:00 PM; Saturday: 9:00 AM - 1:00 PM; Sunday: Closed
- Performance Metrics:** Response Rate: 98%, Order Fulfillment: 95%

**Main Content Area (Overview Tab):**

Category	Value	Change
Products	50	+5%
Inventory	1K	+2%
Orders	0	0%
Transactions	0	0%

Metrics details:

- Response Rate: 98% (Average response time: < 24 hours)
- Fulfillment Rate: 95% (Orders completed successfully)
- Store Rating: 4.8 (1000 reviews)

**Main Content Area (Documents Tab):**

#### Legislative Documents

- Business Name Registration Certificate** (Verified, Valid until: 12/31/2025): Official registration document from DTI or SEC. Document uploaded on 1/15/2024.
- Business Permit** (Pending, Valid until: 12/31/2025): Local government business permit. Document uploaded on 1/15/2024.
- Tax Identification Number** (Verified, Valid until: 12/31/2025): BIR registration and TIN certificate. Document uploaded on 1/15/2024.
- FDA License** (Pending): Food and Drug Administration License. Document uploaded on 1/15/2024.

**Main Content Area (Reviews Tab):**

No reviews available.

**Main Content Area (Settings Tab):**

No settings visible.

**Figure 13: Sellers Profile**

## **5. Order Management**

### **Description:**

- Comprehensive order processing system

### **Contents:**

- **Order List:** Status, customer details
- **Processing Tools:** Batch processing
- **Payment Status:** Transaction tracking
- **Customer Communication:** Order updates

*Figure 14:*

## **6. Customer Management**

### **Description:**

- Client relationship tools

### **Contents:**

- **Customer Inventory:** Purchase history
- **Communication Log:** Interactions record
- **Customer Support:** Issue tracking

*Figure 15:*

### III. Admin Side

#### 1. Dashboard

##### Description:

- Central hub for managing different store performance and activities.

##### Contents:

- **Inventory Status:** Current stock levels and alerts.
- **Revenue Overview:** Total sales and financial performance.
- **Medicine Availability:** Count of medicines in stock.
- **Shortage Alerts:** Notifications for low stock items.

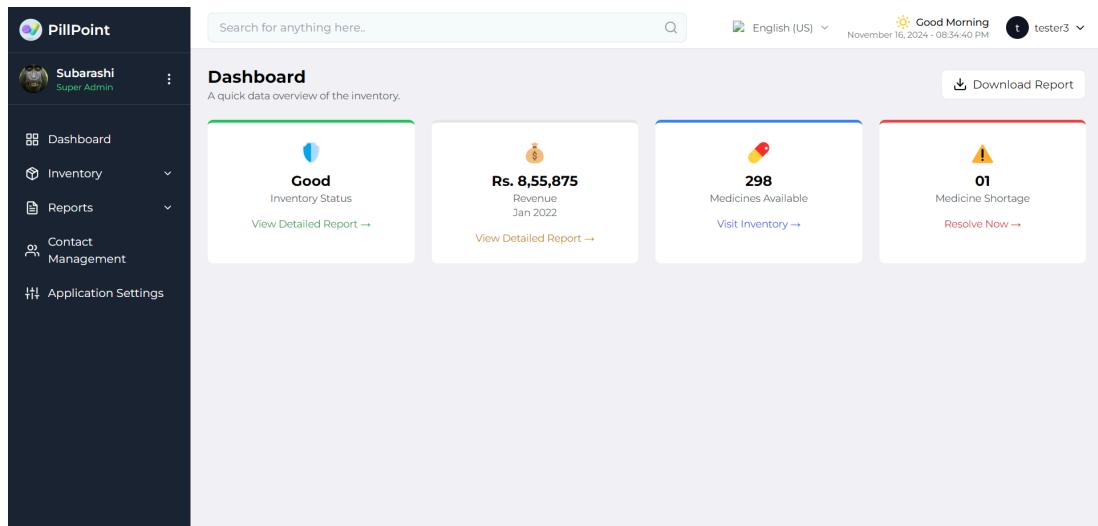


Figure 16: Admin Dashboard

#### 2. Inventory

##### Description:

- Track and manage inventory levels.

##### Contents:

- **List of Medicine:** Overview of list of medicine registered in the database.
- **List of Pharmacy:** Seller or Pharmacy Account Inventories.

**Medicine List**

MEDICINE	SELLER	CATEGORY	PRICE	STOCK	STATUS
Warmhouse 800D Electric Centrifuge Machine	MedTech Solutions	Medical Supplies	P2349	30	active
SISTERS Over Night Dry With Wings	Healthcare Plus	Personal Care	P29	46	inactive

**Registered Pharmacies**

<b>MedTech Solutions Pharmacy</b> License: PHA-2024-001 📍 123 Main Street, Quezon City 📞 +63 912 345 6789 ✉️ medtech@example.com Medicine Groups: Medical Supplies   Personal Care	<b>Healthcare Plus Drugstore</b> License: PHA-2024-002 📍 456 Park Avenue, Makati City 📞 +63 923 456 7890 ✉️ healthcare@example.com Medicine Groups: Supplements   Personal Care
--	---

**Figure 17: Inventory of Registered Medicine and Pharmacies**

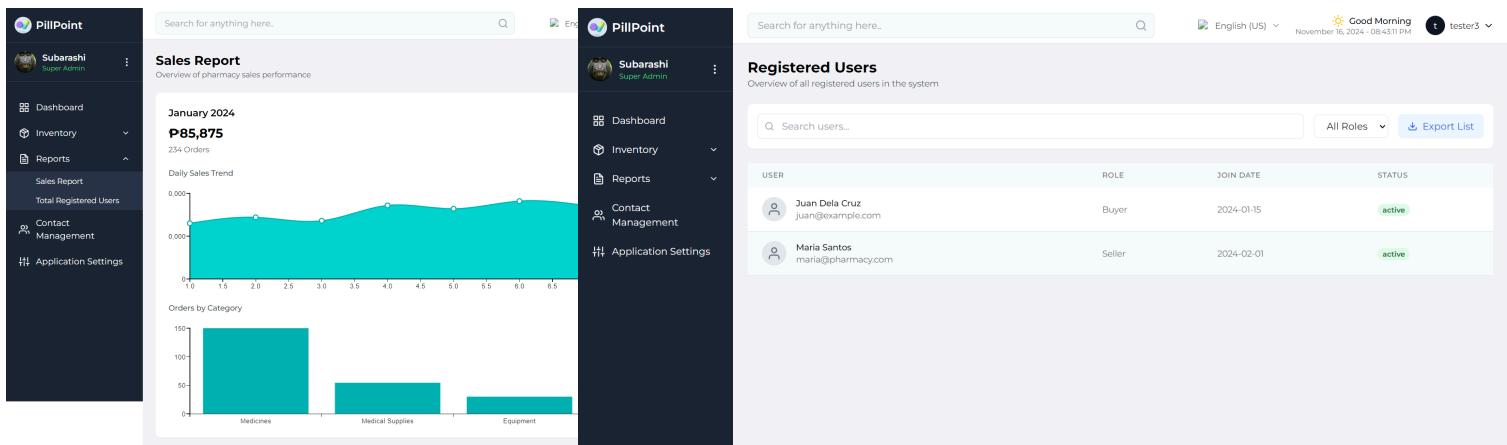
### 3. Reports

#### Description:

- Comprehensive reporting on sales and user registrations.

#### Contents:

- **Sales Report:** Detailed breakdown of sales performance.
- **Payment Report:** Overview of payment transactions.
- **User Registration:** Count of total registered users.
- **Actionable Insights:** Links to view detailed reports.



**Figure 18: Sales Report and Registered Users Report**

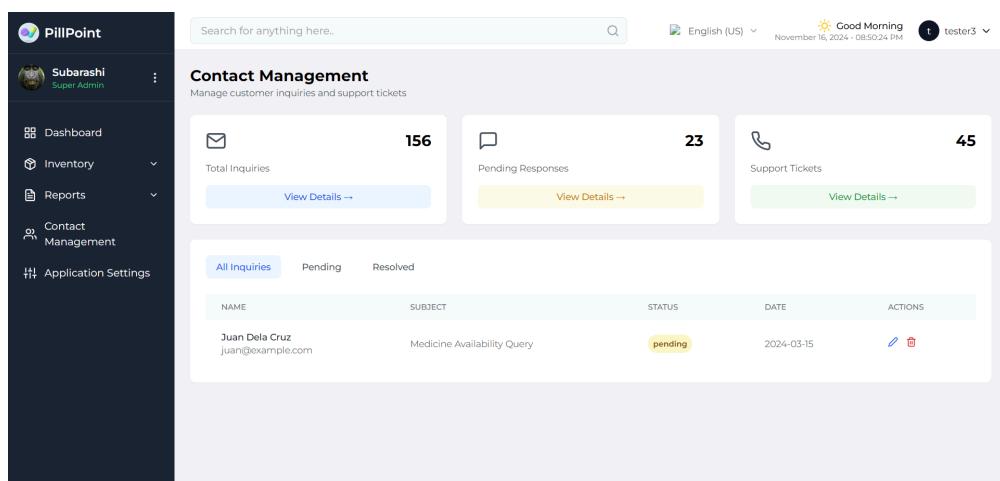
## 4. Contact Management

### Description:

- Tools for managing customer interactions and support.

### Contents:

- Customer Database:** Overview of customer information.
- Communication Logs:** Records of interactions with customers.
- Support Requests:** Tracking of customer inquiries and issues.
- Response Management:** Tools to reply to customer queries.



**Figure 19: Contact Management**

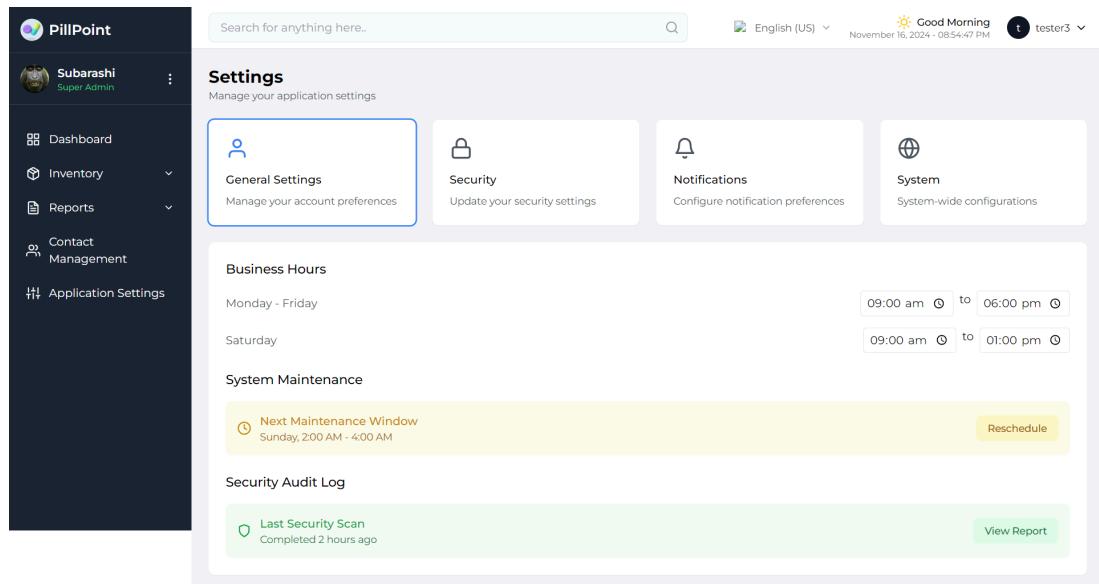
## 5. Application Settings

### Description:

- Configuration options for the admin application.

### Contents:

- **User Management:** Control over admin and user accounts.
- **System Preferences:** Settings for application behavior.
- **Notification Settings:** Manage alerts and notifications.
- **Security Settings:** Options for account security and access control.



*Figure 20: Application Settings*

## IV. Authentication Page

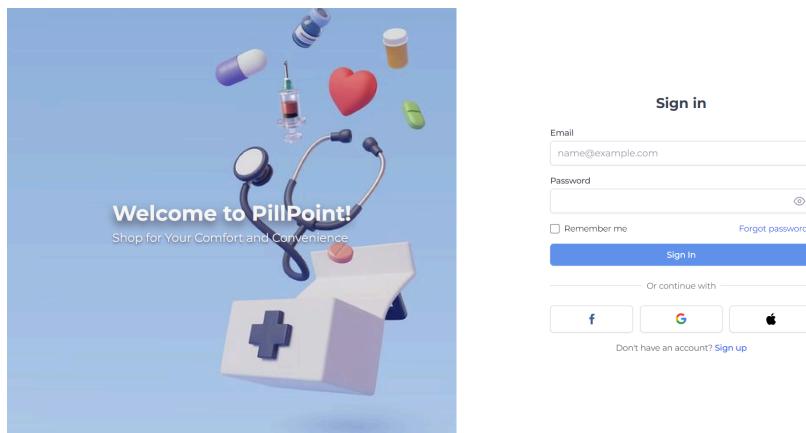
### 1. Sign In

#### Description:

- Page for users to log into their accounts.

#### Contents:

- **Email Input:** Field for entering the registered email address.
- **Password Input:** Field for entering the password.
- **Remember Me:** Option to stay logged in on the device.
- **Forgot Password:** Link to reset the password if forgotten.
- **Sign In Button:** Submits the login credentials.



*Figure 21: Sign-in Page*

### 2. Sign Up

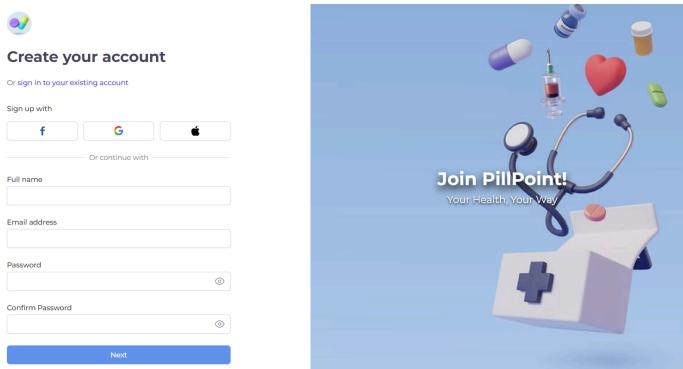
#### Description:

- Page for new users to create an account.

#### Contents:

- **Name Input:** Field for entering the user's full name.
- **Email Input:** Field for entering a valid email address.
- **Password Input:** Field for creating a secure password.
- **Confirm Password:** Field to re-enter the password for verification.

- **Sign Up Button:** Submits the registration details.



*Figure 22: Sign-up Page*

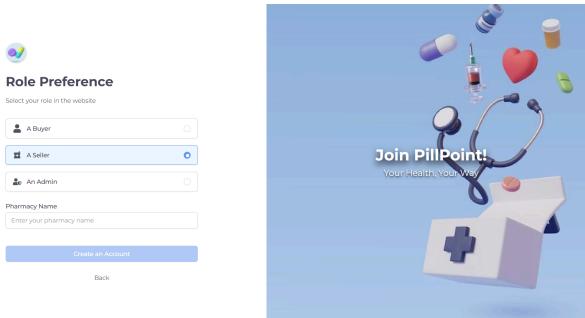
### 3. Sign-up Roles

#### Description:

- Page for selecting user roles during the sign-up process.

#### Contents:

- **Role Selection:** Options to choose the type of account (e.g., Seller, Admin, Buyer).
- **Role Description:** Brief explanation of each role's permissions and responsibilities.



*Figure 23: Sign-up roles page*

## C. Project Usability

### 1. Usability Goals

The primary usability goals for Pillpoint are:

- **Effectiveness:** Users should be able to successfully find and purchase medications.
- **Efficiency:** Users should complete tasks promptly, minimising the time spent navigating the site.
- **Satisfaction:** Users should feel comfortable and satisfied with their experience on the website.

### 2. Usability Metrics

To measure usability, the following metrics will be used:

- **Task Success Rate:** Percentage of users who complete each task.
- **Task Time:** Average time taken to complete each task.
- **Satisfaction Score:** Collected using the System Usability Scale (SUS) questionnaire.

### 3. Analysis of Results

After conducting usability tests, the data will be analysed to identify:

- *Success rates* for each task.
- *Average time* taken to complete tasks.
- *User feedback* from the SUS questionnaire.

## **IV. Project Usability Evaluations**

### **A. Introduction**

#### **1. Purpose of the Usability Evaluation**

The objective of the usability evaluation for Pillpoint, a web-based e-commerce pharmacy, is to assess and enhance the system's *efficiency*, *effectiveness, and user satisfaction* in accordance with ISO 9241-11. This evaluation seeks to identify potential usability issues, comprehend the needs and expectations of end-users, and gather insights into the system's weaknesses and areas for improvement. Ultimately, the goal is to elevate the user experience, ensuring that Pillpoint facilitates swift and successful task completion while maintaining high levels of user satisfaction (Nik Ahmad et al.; Wronikowska et al.).

#### **2. Usability Testing Method**

For Pillpoint, a thorough usability testing methodology should be implemented, integrating various approaches to collect comprehensive data. This process should involve user trials in which participants complete specific tasks using the system, complemented by think-aloud protocols that offer insights into users' cognitive processes. Additionally, questionnaires—such as the System Usability Scale (SUS) or the Post-Study System Usability Questionnaire (PSSUQ)—should be utilised to assess user satisfaction. Key metrics to evaluate will include task completion times, error rates, and user satisfaction scores. This multi-faceted approach will yield a thorough assessment of Pillpoint's usability (Nik Ahmad et al.; Wronikowska et al.).

### 3. Objectives or Metrics of the Usability Testing

ISO 9241-11 Attribute	Metric	Description	Formula
<b>Effectiveness</b>	<b>Task Success Rate</b>	Measures the percentage of users who successfully complete each task, indicating the system's accuracy in helping users reach goals.	Task Success Rate = (Number of Successful Task Completions / Total Number of Attempts) * 100
	<b>Error Rate</b>	Tracks the number of errors users make while completing each task, reflecting usability issues that impede task accuracy.	Error Rate = (Total Errors / Total Attempts) * 100
<b>Efficiency</b>	<b>Time on Task</b>	Calculates the average time users spend on each task, assessing system speed and ease of use.	Time on Task = (Total Time Taken by All Participants) / Number of Participants
	<b>Time-Based Efficiency</b>	Measures how effectively users complete tasks relative to time invested, helping identify time-consuming interactions.	Time-based Efficiency = ( $\sum$ Successful Completions/ $\sum$ (Time (sec) by All Participants)) /# task x # users
	<b>Overall Relative Efficiency</b>	Shows overall efficiency, calculating successful completions across all tasks compared to total time invested.	Overall Relative Efficiency (ORE) = ( $\sum$ (n <sub>ij</sub> ) / $\sum$ (t <sub>ij</sub> )) where n <sub>ij</sub> is 1 if a task is successfully completed by user j and 0 if not; t <sub>ij</sub> is the time taken by user j to complete task i
<b>Satisfaction</b>	<b>Post-Task Satisfaction</b>	Assesses user satisfaction with task	SUS Scoring Method: 1. For odd-numbered

		<p>performance, capturing ease of use, intuitiveness, and comfort post-task.</p>	<p>questions: Score = Response - 1          2. For even-numbered questions: Score = 5 - Response          3. Sum scores and multiply by 2.5 to obtain SUS out of 100</p>
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## B. Evaluation Process - Evaluators

### 1. Description of the Evaluation Process

The evaluation process for the PillPoint involves a comprehensive assessment of the system's usability and functionality across three distinct user roles: seller, buyer, and admin. The same five participants were selected to represent each of these roles, ensuring consistency in feedback and insights across the different user experiences.

#### Participant Selection

The participants were chosen based on their familiarity with similar systems and their ability to provide constructive feedback. Each participant was briefed on the objectives of the evaluation and the specific tasks they would be performing.

### 2. Data Collection Methods

### 3. Task Scenario and User Tasks

Task #	Scenario	Objective
1.	Log in to the system using provided credentials	Test login functionality and ease of access
2.	Process an Order	To test the order management functionality and the clarity of the steps involved in processing an order.
3.	Add a New Product	To evaluate the efficiency and effectiveness of the product addition process, including the clarity of required fields and overall user experience.
4.		
5.		
6.		
7.		

## C. Findings and Analysis

### 1. Summary of Collected Scores

### 2. Data Analysis Based on Usability Metrics

#### 2.1. Effectiveness Metrics

##### 2.1.1. Task Success Rate

**Table : Task Success Rate Raw Scores**

Roles	Task	Complete Success	Success with a Minor Problem	Success with a Major Problem	Failed
	1				
	2				
	3				
	4				
	5				
	6				
	7				

**Table : Task Success Rate (in Percentage)**

Roles	Task	Complete Success	Success with a Minor Problem	Success with a Major Problem	Failed
1					
2					
3					
4					
5					
6					
7					

### 2.1.2. Error Rate

**Table :User Error Rate for Task Performed**

Roles	Task	Total Number of Errors	Total Number of Attempts	Error Rate (%)
	1			
	2			
	3			
	4			
	5			
	6			

	7			
--	---	--	--	--

## 2.2. Efficiency Metrics

### 2.2.1. Time on Task

**Table :Time on Task Part 1**

**Table : Time on Task Part 2**

<b>Roles</b>	<b>Task</b>	<b>Total Time Taken by All Participants (sec)</b>	<b>Total No. of Participants</b>	<b>Task on Time = Total time Taken by All Users/ (Total User)</b>
	1			
	2			
	3			
	4			
	5			
	6			
	7			

### **2.2.2. Time-Based Efficiency**

**Table : Time-Based Efficiency**

	4																			
	5																			
	6																			
	7																			

### 2.2.3. Overall Relative Efficiency

Table : Overall Relative Efficiency

Roles	Tas k	User 1			User 2			User 3			User 4			User 5			Total mij*tij	Total tij	ORE
		nij	tij	nij* tij															
	1																		
	2																		
	3																		
	4																		
	5																		
	6																		
	7																		

### 2.3. User Satisfaction

#### 2.3.1. Post-Task Satisfaction

Table :Level of Participants' Satisfaction on the Task Performed

Roles	Task	VS	S	MS	U	VU	Total No. of Participants	Weighted Mean	Descriptive Interpretation
	1						5		
	2						5		

	3						5		
	4						5		
	5						5		
	6						5		
	7						5		
							<b>Overall Mean</b>		

## D. Quantitative and Qualitative Data Analysis

### 1. Metrics Table with Scores:

*Table: Summary of Results for Effectiveness, Efficiency and Satisfaction*

ISO 9241-11 Attributes	Metric	Average Score/Result	Insights
Effectiveness	Task Success Rate	85%	The overall success rate is high, but certain tasks show lower completion rates. This suggests that some tasks may need clearer instructions or a more intuitive design.
	Error Rate		
Efficiency	Time on Task		

	<b>Time-Based Efficiency</b>		
	<b>Overall Relative Efficiency (ORE)</b>		
<b>Satisfaction</b>	<b>Post-Task Satisfaction</b>		

## **V. Conclusion and Recommendations (sample draft)**

### **A. Conclusion**

The PillPoint project successfully fulfills its primary objective of enhancing access to medical supplies in Butuan City through a user-centric platform designed for accessibility. A comprehensive analysis of usability findings indicates that the platform's interface, which integrates a Geographic Information System (GIS) pharmacy locator alongside detailed product information, effectively aids users in locating and procuring essential healthcare items. These functionalities align closely with the project's mission to improve healthcare accessibility and cultivate a supportive network for local pharmacies. Consequently, PillPoint demonstrates significant potential to positively influence community health by streamlining the procurement processes associated with medical supplies.

### **B. Recommendations**

**1. Enhance Navigation and Error Reduction:** Streamlining the navigation process and minimising error-prone steps—particularly during the payment phase—will likely improve task completion rates and elevate overall user satisfaction.

**2. Optimise Efficiency for Key Tasks:** The layout of the platform should be optimised to facilitate access to frequently utilised features, ultimately reducing task completion times and accommodating users with varying levels of technological proficiency.

**3. Refine Pharmacy Locator Features:** Expanding the filter options available in the pharmacy locator, such as sorting by distance and product availability, will enhance usability and user satisfaction.

**4. Strengthen Data Security:** It is imperative to augment data protection measures, particularly in the context of secure payments, to foster user trust and compliance with healthcare standards.

**5. Improve Inclusivity:** Further testing should be conducted with diverse user demographics, particularly elderly users, to ensure that the platform effectively meets a broad spectrum of needs.

**6. Integrate Continuous Feedback Mechanisms:** Implementing in-app feedback options will facilitate real-time enhancements based on user experiences, thereby ensuring that PillPoint remains both responsive and oriented toward user needs.

In summary, PillPoint effectively addresses critical accessibility needs within the healthcare sector. The implementation of these recommendations will further enhance the platform's functionality, security, and user satisfaction, thereby maximising its positive impact on the healthcare landscape of Butuan City.

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