

HandsMen Threads: Elevating the Art of Sophistication in Men's Fashion

Capstone Project Documentation

Project Overview:

The **HandsMen Threads** capstone project involved implementing a highly customized Salesforce Customer Relationship Management (CRM) solution designed to revolutionize the company's data management, inventory control, and customer loyalty processes.

As a premium men's fashion brand, HandsMen Threads' previous reliance on manual order processing, stock tracking, and static loyalty programs frequently led to delayed customer confirmations, inconsistent inventory data, and a generic, non-personalized customer experience. This project's central aim was to streamline the entire order-to-loyalty lifecycle by leveraging the power of the Salesforce Platform to introduce key automated features, including Automated Order Confirmations (fostering engagement post-purchase), a Dynamic Loyalty Program (automatically updating customer status based on purchase history), and Proactive Stock Alerts (preventing stockouts by notifying the warehouse when levels drop below a critical threshold).

The final solution provides a clean, user-friendly interface using a Custom Lightning App and robust data validation, drastically improving internal user efficiency, ensuring data integrity from the UI, and establishing a scalable digital foundation for personalized customer engagement.

Objectives:

The Salesforce CRM implementation at HandsMen Threads focused on automating core manual processes and enhancing operational efficiency through the following objectives:

- **Implement a Robust Custom Data Model:** Design and deploy a scalable data structure to store all core business data (Products, Inventory, Orders, Loyalty Status) with appropriate relationships.
- **Ensure Data Quality and Integrity:** Implement validation rules and UI constraints to safeguard the accuracy and consistency of data directly from the user interface.
- **Automate Order Confirmation:** Deploy a Record-Triggered Flow to send immediate, automated email updates to customers post-order confirmation.

- **Automate Dynamic Loyalty Updates:** Implement Apex logic to automatically update a customer's loyalty status (e.g., Bronze, Silver, Gold) based on their accumulated purchase history.
- **Implement Proactive Stock Alerts:** Utilize a Record-Triggered Flow to send automatic email notifications to the Warehouse team when any product's stock level drops below five units.
- **Establish a Scalable Backend:** Utilize Batch Apex to process high-volume, asynchronous bulk order updates (e.g., financial record adjustments) scheduled to run daily at midnight.
- **Enhance Internal UX:** Deliver a modern, efficient user interface for internal teams using a Custom Lightning App and Dynamic Forms for improved order and inventory management.

Requirement Analysis & Planning:

This phase establishes the foundation of the project by defining the business problem, scope, and objectives. We analyze user needs, document specific problems (e.g., data inconsistency), and design the high-level Data Model and Security Model. The output is a clear Execution RoadMap and agreed-upon project boundaries, ensuring stakeholder alignment before development starts.

- **Understanding Business Requirements: Summarize the user needs and problems being solved:**
 - HandsMen Threads is tackling the core problem of disjointed and inaccurate data management, which currently hinders informed decision-making and operational flow. The primary user needs center on achieving data integrity directly at the user interface level, enhancing customer engagement through timely communication and a dynamic loyalty program, and significantly boosting operational efficiency by automating critical processes like stock alerts and scheduled bulk order updates. The project will replace manual, error-prone tasks with a robust, centralized Salesforce solution, ensuring the business can scale effectively.
- **Defining Project Scope and Objectives:**
 - The project's scope is anchored in building a complete data model (including objects, fields, and complex relationships) and implementing four key automation flows. Specifically, this involves creating the necessary Validation Rules for data

quality and designing professional email templates for customer and internal communication. The core objectives are measurable: achieving 100% data modeling of critical business information, ensuring 99% data accuracy via UI validations, and implementing the automations to achieve results like 100% automated order confirmations and an 80% reduction in manual inventory monitoring tasks.

- **Design Data Model and Security Model**

- The Data Model is conceptualized around core entities like Customer, Product, Order, Order Item, and a custom Loyalty Status object, utilizing formula fields and relationships to link business data seamlessly. Crucially, the Security Model will enforce the principle of least privilege, with Organization-Wide Defaults (OWD) set to private for sensitive records like Orders. Access will then be strategically opened up using Profiles/Permission Sets (to define what users can *do*) and Sharing Rules (to define what users can *see*), ensuring the Warehouse Team has different access than the Sales Team.

- **Stakeholders Mapping**

- The success of the project relies on collaboration across four main groups. Executive Leadership acts as the sponsor, ensuring budget and strategic alignment for ROI and growth. The Sales/Fashion Team and the Warehouse/Inventory Team are the key end-users who validate requirements and benefit directly from the improved data access and automation. The IT/Development Team is responsible for the technical implementation, quality assurance, and post-go-live support, ensuring the platform is stable and correctly architected.

- **Execution RoadMap**

- The project follows a structured, four-phase roadmap. Phase 1: Architecture & Planning focuses on defining all specifications, including the data model and detailed automation logic (Flows, Apex, Batch Apex). Phase 2: Development is the hands-on building phase, where objects are created and all automations and the security model are fully implemented in a sandbox environment. Phase 3: Testing & QA is critical for quality control, involving comprehensive Unit, End-to-End, and Performance Testing. Finally, Phase 4: Deployment & Training involves

moving the finished product to production, providing training to all user groups, and offering essential post-go-live support to ensure smooth user adoption.

Salesforce Development - Backend & Configurations

This phase is dedicated to building and configuring the core functionality defined in the planning stage, focusing on the data model, security, and automation mechanisms within the Salesforce environment for HandsMen Threads.

- **Data Model Customization**

- **Custom Objects:** Objects like Order, OrderItem, and Loyalty Status are created to capture specific business data not covered by standard objects.
- **Custom Fields:** Essential fields are added to both standard (e.g., Loyalty_Status__c on the Handsmen Customer object) and custom objects.

Screenshots of Custom Objects and Fields:

The screenshot shows the Salesforce Object Manager interface. The top navigation bar includes 'Setup', 'Home', and 'Object Manager'. The main title is 'SETUP > OBJECT MANAGER' followed by 'HandsMen Product'. On the left, a sidebar lists various configuration options under 'Fields & Relationships'. The main content area is titled 'Fields & Relationships' and displays a table of fields for the 'HandsMen Product' object. The table columns are 'FIELD LABEL', 'FIELD NAME', 'DATA TYPE', 'CONTROLLING FIELD', and 'INDEXED'. The fields listed are:

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedBy	Lookup(User)		
HandsMen Product Name	Name	Text(80)		
Last Modified By	LastModifiedBy	Lookup(User)		
Owner	OwnerId	Lookup(User,Group)		✓
Price	Price__c	Currency(18, 0)		
SKU	SKU__c	Text(60)		
Stock Quantity	Stock_Quantity__c	Number(18, 0)		

Setup > OBJECT MANAGER HandsMen Customer					
Details	Fields & Relationships				
	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Page Layouts	Created By	CreatedById	Lookup(User)		
Lightning Record Pages	Email	Email__c	Email		
Buttons, Links, and Actions	FirstName	FirstName__c	Text(60)		
Compact Layouts	FullName	FullName__c	Formula (Text)		
Field Sets	HandsMen Customer Name	Name	Text(60)		
Object Limits	Last Modified By	LastModifiedById	Lookup(User)		
Record Types	LastName	LastName__c	Text(60)		
Related Lookup Filters	Loyalty Status	Loyalty_Status__c	Picklist		
Search Layouts	Owner	OwnerId	Lookup(User,Group)		
List View Button Layout	Phone	Phone__c	Phone		
Restriction Rules	Total Purchases	Total_Purchases__c	Number(18, 0)		
Scoping Rules					
Object Access					
Triggers					
Flow Triggers					
Validation Rules					
Conditional Field Formatting					

Setup > OBJECT MANAGER HandsMen Order					
Details	Fields & Relationships				
	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Page Layouts	Created By	CreatedById	Lookup(User)		
Lightning Record Pages	HandsMen Customer	HandsMen_Customer__c	Lookup(HandsMen Customer)		
Buttons, Links, and Actions	HandsMen OrderNumber	Name	Auto Number		
Compact Layouts	HandsMen Product	HandsMen_Product__c	Lookup(HandsMen Product)		
Field Sets	Last Modified By	LastModifiedById	Lookup(User)		
Object Limits	Owner	OwnerId	Lookup(User,Group)		
Record Types	Quantity	Quantity__c	Number(18, 0)		
Related Lookup Filters	Status	Status__c	Picklist		
Search Layouts	Total Amount	Total_Amount__c	Number(18, 0)		
List View Button Layout					
Restriction Rules					
Scoping Rules					
Object Access					
Triggers					
Flow Triggers					
Validation Rules					
Conditional Field Formatting					

Setup > OBJECT MANAGER

Marketing Campaign

Fields & Relationships		Fields & Relationships				
	7 items, Sorted by Field Label	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Details		Created By	CreatedById	Lookup(User)		
Fields & Relationships		End Date	End_Date__c	Date		
Page Layouts		HandsMen Customer	HandsMen_Customer__c	Lookup(HandsMen Customer)		
Lightning Record Pages		Last Modified By	LastModifiedById	Lookup(User)		
Buttons, Links, and Actions		Marketing Campaign Number	Name	Auto Number		
Compact Layouts		Owner	OwnerId	Lookup(User,Group)		
Field Sets		Start Date	Start_Date__c	Date		
Object Limits						
Record Types						
Related Lookup Filters						
Search Layouts						
List View Button Layout						
Restriction Rules						
Scoping Rules						
Object Access						
Triggers						
Flow Triggers						
Validation Rules						
Conditional Field Formatting						

Setup > OBJECT MANAGER

Inventory

Fields & Relationships		Fields & Relationships				
	7 items, Sorted by Field Label	FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Details		Created By	CreatedById	Lookup(User)		
Fields & Relationships		HandsMen Product	HandsMen_Product__c	Master-Detail(HandsMen Product)		
Page Layouts		Inventory Number	Name	Auto Number		
Lightning Record Pages		Last Modified By	LastModifiedById	Lookup(User)		
Buttons, Links, and Actions		Stock Quantity	Stock_Quantity__c	Number(18, 0)		
Compact Layouts		Stock Status	Stock_Status__c	Formula (Text)		
Field Sets		Warehouse	Warehouse__c	Text(60)		
Object Limits						
Record Types						
Related Lookup Filters						
Search Layouts						
List View Button Layout						
Restriction Rules						
Scoping Rules						
Object Access						
Triggers						
Flow Triggers						
Validation Rules						
Conditional Field Formatting						

- **Validation Rules:** Implemented to enforce data quality directly on the UI. For instance, a rule is added to the Product object to prevent Stock_Level__c from being set below zero upon saving.

Screenshots of Validation Rules:

The image displays two screenshots of the Salesforce Object Manager interface, specifically showing the 'Validation Rule Detail' screen for two different objects: 'Inventory' and 'HandsMen Order'.

Screenshot 1: Inventory Validation Rule

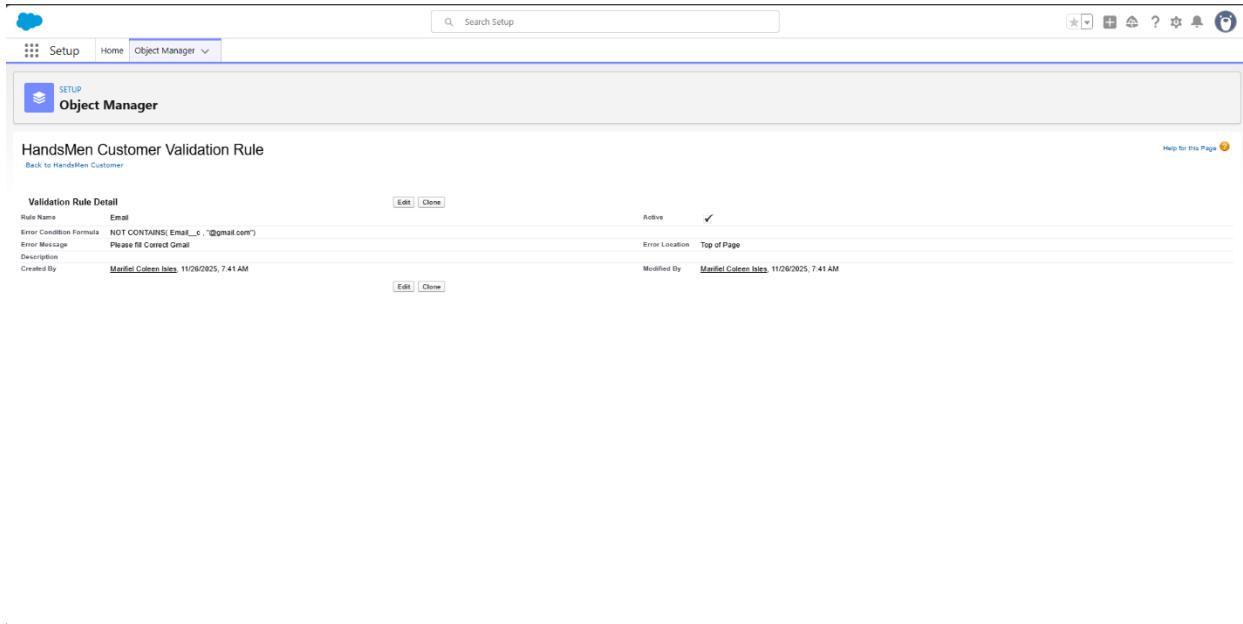
This screenshot shows the validation rule for the 'Stock_Quantity' field of the 'Inventory' object. The rule is named 'Stock_Quantity' and has the formula `Stock_Quantity__c <= 0`. The error message is "The inventory count is never less than zero." The rule is active and located at the top of the page. It was created by Marifel Coleen Iikes on 11/26/2025, 7:39 AM.

Field	Value
Rule Name	Stock_Quantity
Error Condition Formula	<code>Stock_Quantity__c <= 0</code>
Error Message	The inventory count is never less than zero.
Description	
Created By	Marifel Coleen Iikes 11/26/2025, 7:39 AM

Screenshot 2: HandsMen Order Validation Rule

This screenshot shows the validation rule for the 'Total_Amount' field of the 'HandsMen Order' object. The rule is named 'Total_Amount' and has the formula `Total_Amount__c >= 0`. The error message is "Please Enter Correct Amount." The rule is active and located at the top of the page. It was created by Marifel Coleen Iikes on 11/26/2025, 7:35 AM.

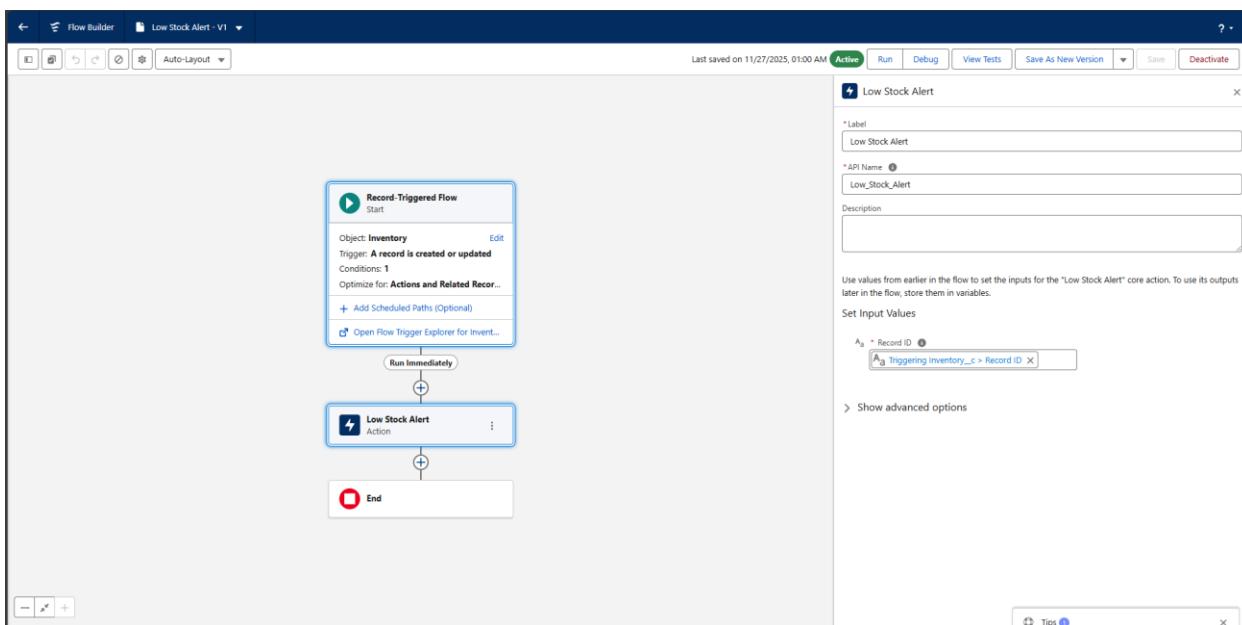
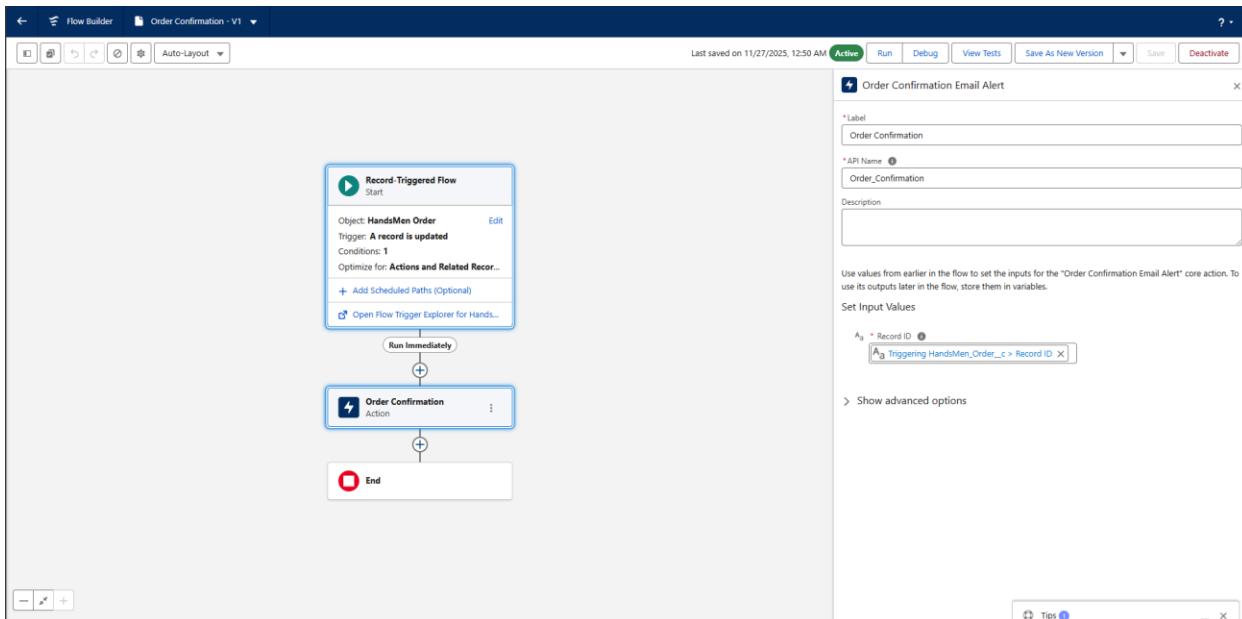
Field	Value
Rule Name	Total_Amount
Error Condition Formula	<code>Total_Amount__c >= 0</code>
Error Message	Please Enter Correct Amount
Description	
Created By	Marifel Coleen Iikes 11/26/2025, 7:35 AM

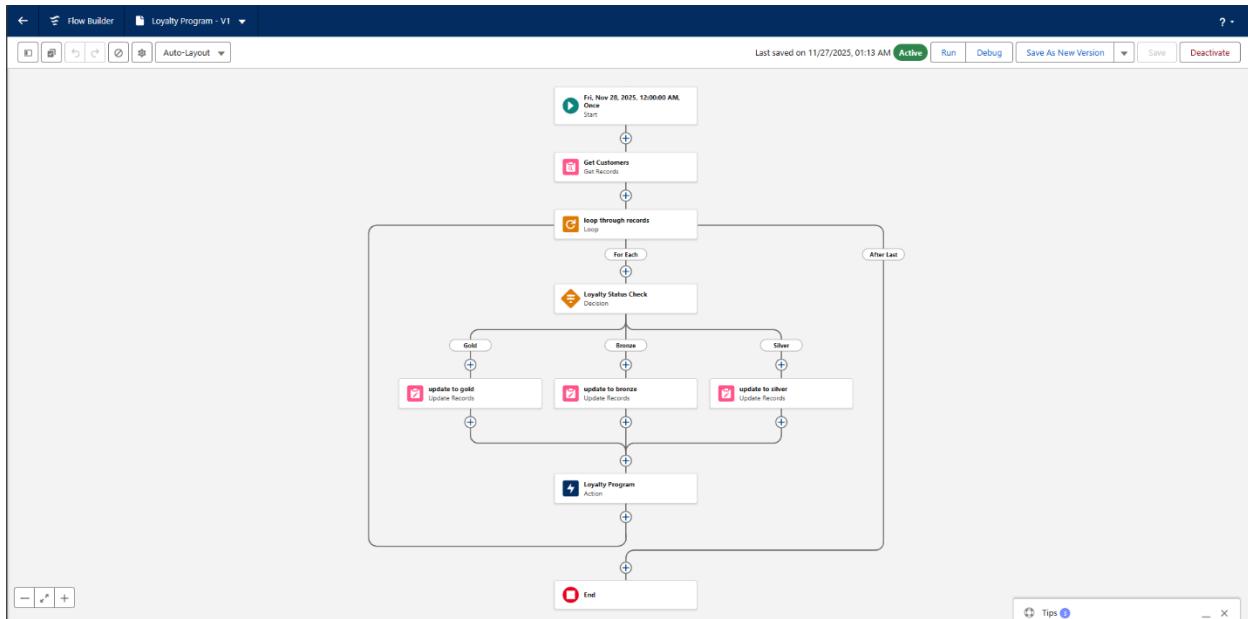


- **Automation (Flows):**

- **Automated Order Confirmation:** A Record-Triggered Flow is built on the Order object. When an Order is marked as 'Confirmed', the Flow immediately executes an Email Alert action to send the customer the order details using the predefined email template.
- **Dynamic Loyalty Program Update:** A second Record-Triggered Flow runs on the Order object upon creation. It calculates the total purchase amount and updates the associated Loyalty Status__c field on the parent Customer record (e.g., updating status from 'Silver' to 'Gold' if lifetime purchases exceed 1000).

Screenshots of Flows:





- **Apex Classes, Triggers, Asynchronous Apex Classes**

- **Proactive Stock Alerts:** An Apex Trigger is implemented on the Product object. This trigger runs before update to check if the Stock_Level__c is being modified and is now less than 5 units. If the condition is met, the trigger invokes a helper class method that sends an email notification to the warehouse manager, ensuring timely restocking.
- **Scheduled Bulk Order Updates:** A dedicated Batch Apex Class (e.g., BulkOrderProcessor) is developed to handle large-volume, scheduled data manipulation.
- **Brief Explanation:** Batch Apex is necessary here because the requirement is to process bulk orders, update financial records, and adjust inventory daily at midnight. This operation is resource-intensive and runs against thousands of records, making it unsuitable for real-time triggers. Batch Apex efficiently processes records in manageable chunks (batches), ensuring platform limits are not exceeded.
- **Utility & Test Classes:** Supporting Apex classes are developed for complex business logic (e.g., calculating tiered loyalty status) and to ensure high code coverage for all custom triggers and asynchronous code, meeting Salesforce's deployment standards.

Screenshots of Apex Classes and Triggers:

OrderTotalTrigger.apxt

```

1 * trigger OrderTotalTrigger on HandsMen_Order__c (before insert, before update) {
2     Set<Id> productIds = new Set<Id>();
3
4     for (HandsMen_Order__c order : Trigger.new) {
5         if (order.HandsMen_Product__c != null) {
6             productIds.add(order.HandsMen_Product__c);
7         }
8     }
9
10 Map<Id, HandsMen_Product__c> productMap = new Map<Id, HandsMen_Product__c>(
11     [SELECT Id, Price__c FROM HandsMen_Product__c WHERE Id IN :productIds]
12 );
13
14 for (HandsMen_Order__c order : Trigger.new) {
15     if (order.HandsMen_Product__c != null && productMap.containsKey(order.HandsMen_Product__c)) {
16         HandsMen_Product__c product = productMap.get(order.HandsMen_Product__c);
17         if (order.Quantity__c != null) {
18             order.Total_Amount__c = order.Quantity__c * product.Price__c;
19         }
20     }
21 }
22 }
```

StockDeductionTrigger.apxt

```

1 * trigger StockDeductionTrigger on HandsMen_Order__c (after insert, after update) {
2     Set<Id> productIds = new Set<Id>();
3
4     for (HandsMen_Order__c order : Trigger.new) {
5         if (order.Status__c == 'Confirmed' && order.HandsMen_Product__c != null) {
6             productIds.add(order.HandsMen_Product__c);
7         }
8     }
9
10 if (productIds.isEmpty()) return;
11
12 // Query related inventories based on product
13 Map<Id, Inventory__c> inventoryMap = new Map<Id, Inventory__c>(
14     [SELECT Id, Stock_Quantity__c, HandsMen_Product__c
15      FROM Inventory__c
16      WHERE HandsMen_Product__c IN :productIds]
17 );
18
19 List<Inventory__c> inventoriesToUpdate = new List<Inventory__c>();
20
21 for (HandsMen_Order__c order : Trigger.new) {
22     if (order.Status__c == 'Confirmed' && order.HandsMen_Product__c != null) {
23         for (Inventory__c inv : inventoryMap.values()) {
24             if (inv.HandsMen_Product__c == order.HandsMen_Product__c) {
25                 inv.Stock_Quantity__c -= order.Quantity__c;
26                 inventoriesToUpdate.add(inv);
27                 break;
28             }
29         }
30     }
31 }
```

Logs

User	Application	Operation	Time	Status	Read	Size
Marifel Colen Isles	Unknown	ApexTestHandler	11/27/2025, 1:23:19 AM	Success	Unread	2.18 kB
Marifel Colen Isles	Unknown	ApexTestHandler	11/27/2025, 1:23:19 AM	Success	Unread	515 bytes
Marifel Colen Isles	Browser	/aura	11/27/2025, 1:23:56 AM	Success	Unread	2.76 kB
Marifel Colen Isles	Unknown	common.api.soap.DirectSoap	11/27/2025, 1:23:56 AM	Success	Unread	522 bytes
Marifel Colen Isles	Unknown	ApexTestHandler	11/27/2025, 1:28:38 AM	Success	Unread	2.18 kB
Marifel Colen Isles	Unknown	ApexTestHandler	11/27/2025, 1:28:38 AM	Success	Unread	515 bytes

Logs

User	Application	Operation	Time	Status	Read	Size
Marifel Colen Isles	Browser	/aura	11/27/2025, 1:39:30 AM	Success	Unread	13.77 kB
Marifel Colen Isles	Unknown	common.api.soap.DirectSoap	11/27/2025, 1:39:30 AM	Success	Unread	517 bytes
Marifel Colen Isles	Browser	/aura	11/27/2025, 1:38:22 AM	Success	Unread	8.36 kB
Marifel Colen Isles	Unknown	common.api.soap.DirectSoap	11/27/2025, 1:38:22 AM	Success	Unread	522 bytes
Marifel Colen Isles	Browser	/aura	11/27/2025, 1:37:45 AM	Success	Unread	1.49 kB
Marifel Colen Isles	Unknown	common.api.soap.DirectSoap	11/27/2025, 1:37:44 AM	Success	Unread	517 bytes

The screenshot shows the Salesforce developer console interface. At the top, there are tabs for 'OrderTotalTrigger.apl', 'StockDeductionTrigger.apl', and 'InventoryBatchJob.apl'. The code editor contains the following Apex code:

```

1  update products;
2
3  } catch (DmlException e) {
4
5    System.debug('Error updating inventory: ' + e.getMessage());
6
7  }
8
9
10 }
11
12 // Scheduler Method
13
14 global void execute(SchedulableContext SC) {
15
16   InventoryBatchJob batchJob = new InventoryBatchJob();
17
18   Database.executeBatch(batchJob, 200);
19
20 }
21
22 }
```

Below the code editor is a table titled 'Logs' showing a list of log entries:

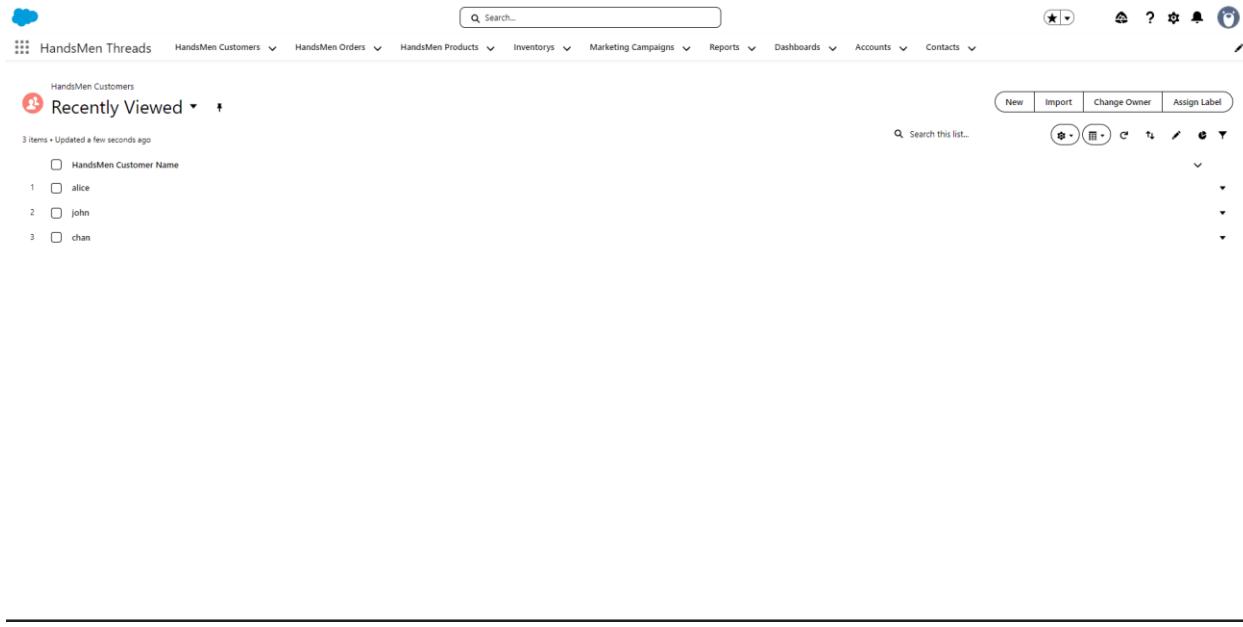
User	Application	Operation	Time	Status	Read	Size
Maribel Cooley Isles	Unknown	/services/data/v65.0/tooling/executeAnonymous/	11/27/2025, 1:43:36 AM	Success	Unread	2.88 KB
Maribel Cooley Isles	Browser	/aura	11/27/2025, 1:39:30 AM	Success	Unread	13.77 KB
Maribel Cooley Isles	Unknown	common.api.soap.DirectSoap	11/27/2025, 1:39:30 AM	Success	Unread	517 bytes
Maribel Cooley Isles	Browser	/aura	11/27/2025, 1:38:22 AM	Success	Unread	8.36 KB
Maribel Cooley Isles	Unknown	common.api.soap.DirectSoap	11/27/2025, 1:38:22 AM	Success	Unread	522 bytes
Maribel Cooley Isles	Browser	/aura	11/27/2025, 1:37:45 AM	Success	Unread	1.45 KB

UI/UX Development & Customization

This phase focuses on enhancing the user experience (UX) and interface (UI) to make the new Salesforce system intuitive, efficient, and informative for all HandsMen Threads users, aligning with the principles learned via the Lightning App Builder.

- **Lightning App Setup through App Manager**
 - A centralized, branded entry point is created for the users.
 - **HandsMen Threads App:** A custom Lightning App is configured via the App Manager to serve as the main workspace for Sales and Warehouse teams.
 - **Branding:** The App is branded with the HandsMen Threads logo and colors.
 - **Navigation:** The navigation bar is customized to include only the relevant items: Home, Customers, Orders, Products, Reports, and Dashboards, ensuring quick access to core functionalities.

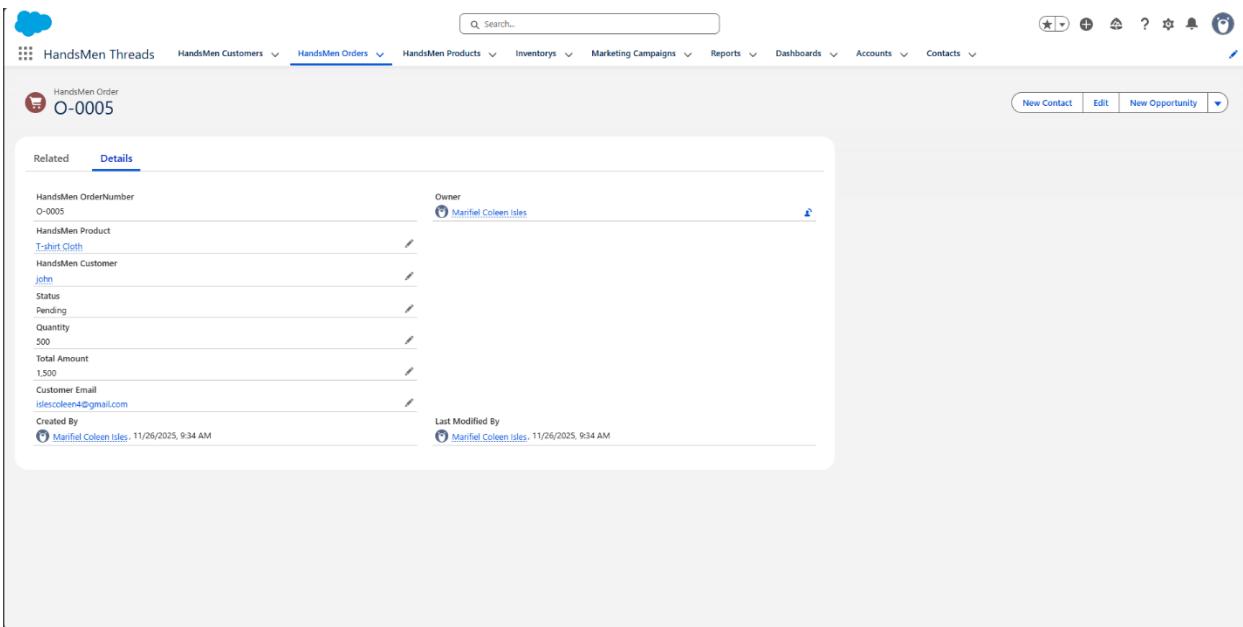
Screenshot of the Handsmen Lightning App:



- **Page Layouts and Dynamic Forms**

- Record details are optimized for clarity and reduced scrolling.
- **Page Layouts:** Traditional Page Layouts are refined for non-LWC records, grouping related fields logically (e.g., quantity, name, etc.).
- **Dynamic Forms:** For key custom objects like Order and Loyalty Status, Dynamic Forms are implemented (using Lightning Record Pages) to provide a more tailored and flexible user experience.
- **Conditional Visibility:** Fields on the Order record page are made conditionally visible, only appearing once the order status changes to 'Shipped', reducing clutter for users handling new orders.

Screenshot of the Order Object Form:



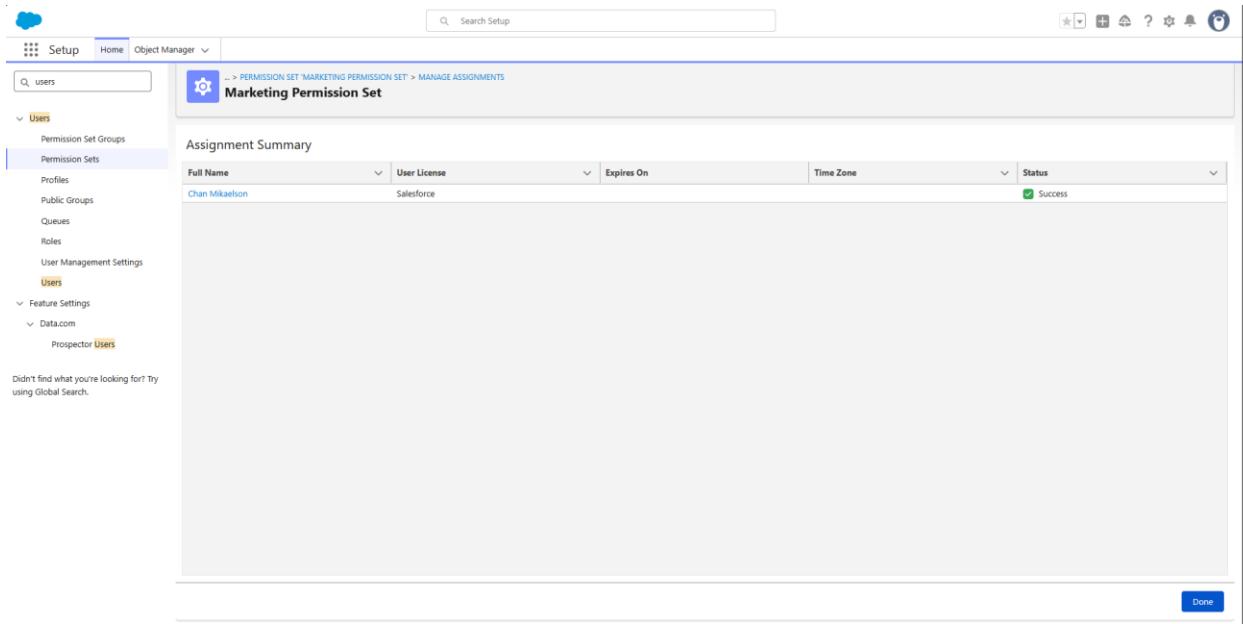
• User Management

- User access and profiles are finalized based on the Security Model.
- **Profile/Permission Set Review:** The security model designed in Phase 1 is fully configured, creating distinct Profiles and supplementing them with Permission Sets where necessary.
- **User Provisioning:** Dummy users representing the different roles (Sales, Warehouse, Admin) are created in the Sandbox environment to thoroughly test all data visibility and access rules before deployment.

Screenshot of the Permission Set:

The screenshot shows the Salesforce Setup interface for managing permission sets. The left sidebar navigation bar includes links for Setup, Home, Object Manager, and a search bar labeled "Search Setup". Under the "Users" section, "Permission Set Groups" and "Permission Sets" are expanded. The "Permission Sets" section contains links for Profiles, Public Groups, Queues, Roles, User Management Settings, and Users. The "Users" link is highlighted in blue. The main content area is titled "Sales Permission Set" and displays the "Current Assignments" table. The table has columns for Full Name, Active, Role, Profile, User License, and Expires On. One row is listed: "Niklaus Mikaelson" with Role "Sales", Profile "Platform 1", User License "Salesforce", and Expires On set to "Never". A button labeled "Add Assignment" is located at the top right of the table.

The screenshot shows the Salesforce Setup interface for managing permission sets. The left sidebar navigation bar includes links for Setup, Home, Object Manager, and a search bar labeled "Search Setup". Under the "Users" section, "Permission Set Groups" and "Permission Sets" are expanded. The "Permission Sets" section contains links for Profiles, Public Groups, Queues, Roles, User Management Settings, and Users. The "Users" link is highlighted in blue. The main content area is titled "Inventory Permission Set" and displays the "Current Assignments" table. The table has columns for Full Name, Active, Role, Profile, User License, and Expires On. One row is listed: "Kai Mikaelson" with Role "Inventory", Profile "Platform 1", User License "Salesforce", and Expires On set to "Never". A button labeled "Add Assignment" is located at the top right of the table.



- **Lightning Pages**

- The display and organization of information on record pages are optimized.
- **Custom Record Pages:** Custom Lightning Record Pages are built for the Customer and Product objects using the Lightning App Builder.
- **Component Placement:** The pages are structured logically using standard components. For instance, the Activity Timeline is prominently placed on the Customer page for quick access to communication history, and a related list component for Loyalty Status is placed near the top.

Screenshot of the Arrangement of Tabs in the Lightning App Builder:



Data Migration, Testing & Security Hardening

This final phase ensures the system is thoroughly validated, secure, and ready for production use, concluding with the preparation for user adoption and go-live.

- **Data Integrity**

- This test case validates a critical Validation Rule on the **Order** object, ensuring that the necessary prerequisite data for customer communication—specifically the **Email Address**—is present on the related **Customer (Contact)** record.
- **Why it's necessary:** The HandsMen Threads project includes the automated process of sending Order Confirmations post-sale. If the associated Contact record lacks an email address, this crucial automation will fail, resulting in a poor customer experience and operational error. This Validation Rule prevents the saving or confirmation of an Order until this fundamental data quality requirement is met.
- **Test Scenario Detail:**
 - **Setup:** A Contact record is intentionally created or located where the standard **Email** field is empty or blank.
 - **Action:** A user attempts to create a new **Order** record and links it to this email-less Contact, or attempts to update an existing Order linked to the Contact to a confirmed status (e.g., 'Processing' or 'Confirmed').
 - **Expected Result (Success):** The system must immediately display the custom validation error message, successfully preventing the Order from being saved or advanced in status. This proves the system is enforcing the data quality requirement necessary for the automation to function later.

Screenshot of the error when incomplete fields are left filled:

The screenshot shows a 'New HandsMen Order' form in a CRM application. The form includes fields for Product, Customer, Status, Quantity, Total Amount, and Customer Email. The 'Customer Email' field is highlighted in red and contains a placeholder '∅'. A pink error message box appears over the form, stating 'We hit a snag.' and 'Review the following fields: Customer Email'. The status bar at the bottom indicates 'Cancel', 'Save & New', and 'Save'.

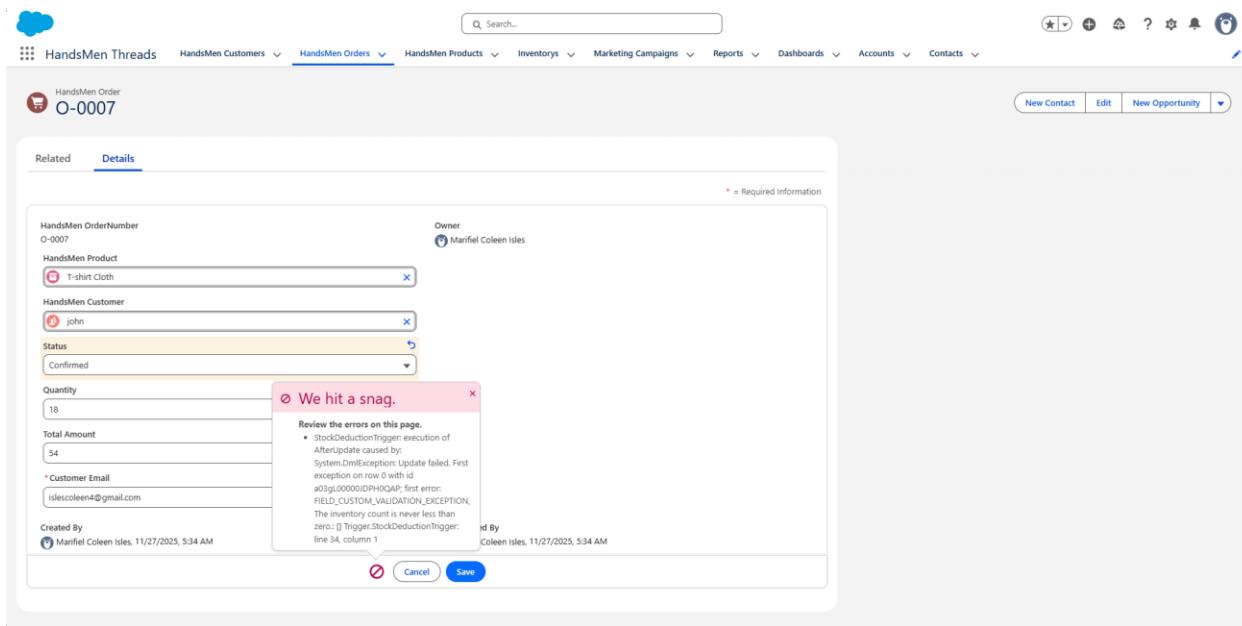
Data Quality and Auditing Features

- The following features are configured to maintain high data quality and prevent operational errors like overselling.
- **Field History Tracking:** Enabled on key fields within the **Product** and **Order** objects for auditing changes.
- **Duplicate Rules/Matching Rules:** Implemented on the **Customer** (Contact) object to prevent the creation of duplicate customer records.
- **Over-Ordering Prevention Rule (New Feature Focus):** A critical Validation Rule is enforced on the **Order Item** object. This rule prevents

users from saving an order detail line where the requested Quantity__c is greater than the current Stock_Level__c on the related Product record.

- **Duplicate Rules:** Implemented on the **Customer** (Contact) object to prevent the creation of duplicate customer records.
- **Matching Rules:** The Duplicate Rule is supported by a Matching Rule that identifies potential duplicates based on fuzzy logic (e.g., matching the same First Name + Last Name + closely matching Email Address). This ensures data integrity upon manual entry or during lower-volume data loads.

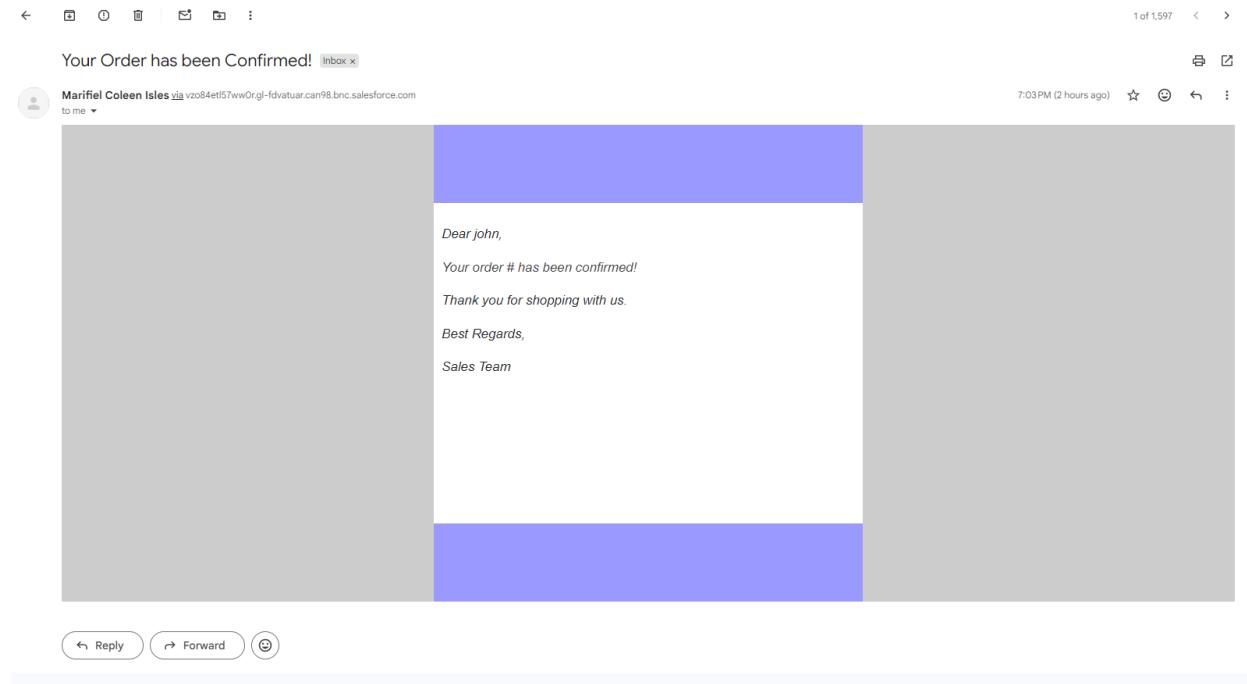
Screenshot of the error when changing the order quantity to more than the available stock:



• Flow: Automated Order Confirmation

- This test case validates the successful execution of the **Record-Triggered Flow** designed to automate customer communication. The core goal is to verify that when a sales agent confirms an order, the system automatically triggers an email notification to the customer without any manual intervention.

Screenshot of the email with the message “Order Confirmed”:



- **Apex Trigger: Proactive Stock Alert**

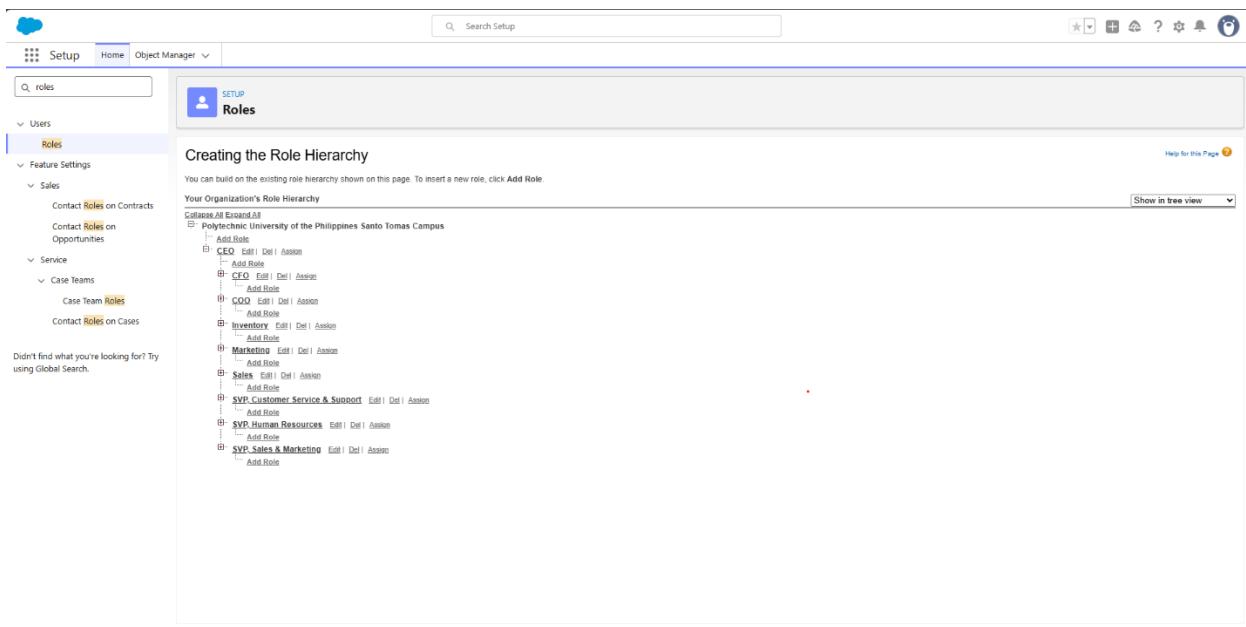
- This test case validates the custom Apex Trigger logic that manages proactive inventory monitoring. The objective is to confirm that the trigger correctly fires and initiates communication *only* when a product's stock level crosses the critical threshold (below 5 units), ensuring the warehouse team is alerted instantly.

Screenshot of the email with the message “Low Stock Alert”:



- **Finalizing Security Model: Profiles, Roles, and Sharing**
 - **Profiles and Permission Sets:** All user Profiles (and necessary Permission Sets) are finalized and deployed.
 - **Roles and Role Hierarchy:** The Role Hierarchy is established to support data visibility and reporting. This allows managers to view records owned by their subordinates.

Screenshot of the Role Hierarchy:



- **Creation of Test Classes**

- All custom Apex code must be supported by automated testing.
- Test Class Development: Dedicated Apex Test Classes are created for the Stock Alert Trigger Batch Apex class. These classes simulate realistic scenarios (e.g., triggering a stock level drop below 5 units, or creating 200 orders for batch processing).
- Code Coverage: The test methods are designed to achieve a minimum of 75% code coverage for the custom Apex, meeting Salesforce's deployment requirement.
- **Screenshot can be found in the Apex Class and Triggers Section above**

Deployment, Documentation & Maintenance

This final phase covers the controlled release of the finished application to the production environment, the establishment of support procedures, and the formal handover of the documentation.

- **Deployment Strategy**

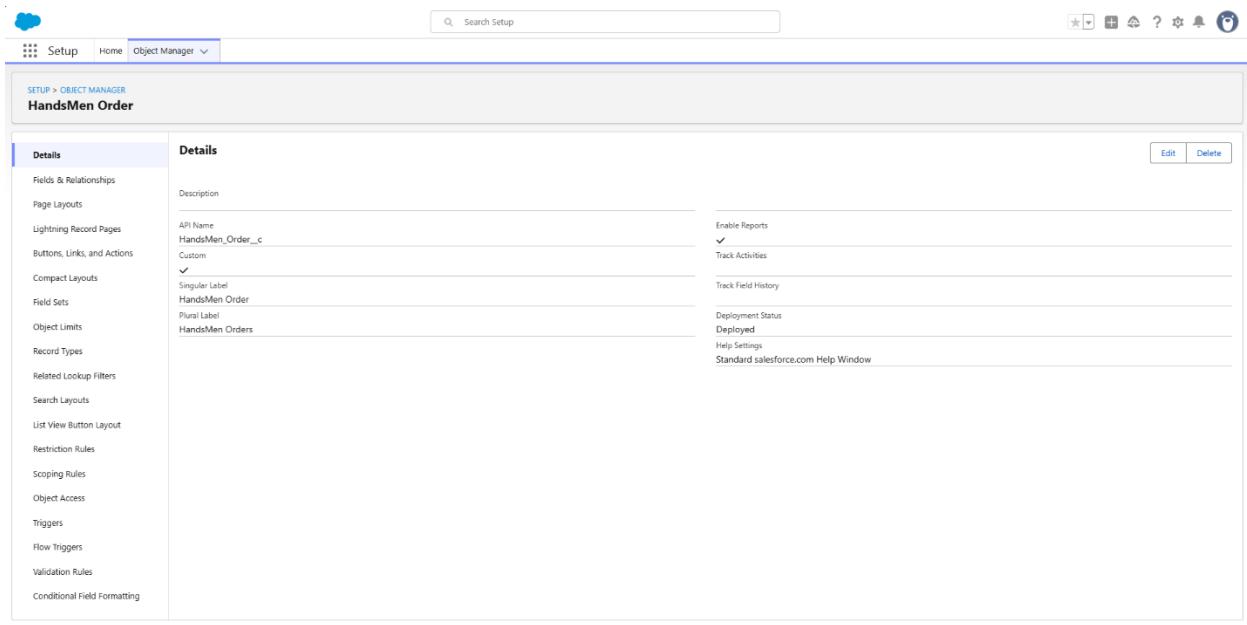
- The deployment strategy for the HandsMen Threads Salesforce solution will utilize a phased, controlled approach leveraging Salesforce Change Sets.
- **Tools: Change Sets** will be the primary tool for migrating metadata (objects, fields, validation rules, flows, profiles, reports, and custom code) between related sandboxes and the final Production environment.
- **Validation and Testing in Production:** Before the final deployment, all components will be validated in the Production environment during off-peak hours. This step checks for any dependency errors or configuration issues without actually deploying the changes.
- **Code Coverage Enforcement:** The deployment process will be executed only when the total Apex code coverage is at or above 75% in the destination environment.
- **Go/No-Go Decision:** A final Go/No-Go meeting with stakeholders and the IT team will confirm that all test cases (Phase 4) have passed in the UAT environment and the Production validation was successful before the final deployment is executed.

- **System Maintenance and Monitoring**

- Post-deployment, a plan is essential to ensure the system remains reliable, performs optimally, and continues to meet business needs.
- **Scheduled Maintenance:** The Batch Apex job (**BulkOrderProcessor**) will be monitored daily via the Scheduled Jobs and Apex Jobs pages in Setup to ensure it executes successfully at midnight.
- **Performance Monitoring:** The Debug Logs will be utilized to occasionally sample the execution times of the complex Apex Trigger (**Proactive Stock Alert**) and the Order Confirmation Flow to identify any potential performance degradation over time.

- **Release Management:** A designated System Administrator will be responsible for applying Salesforce's seasonal releases (Spring, Summer, Winter) in a sandbox first, testing critical functionality (like the Order Flow and Batch Job), and ensuring compatibility before the updates are pushed to Production.
- **User Feedback Loop:** A dedicated channel (e.g., a "Salesforce Feedback" Chatter Group or a custom Case queue) will be established for end-users to submit bug reports and enhancement requests for future sprints.

Other Screenshots:



The screenshot shows the Salesforce Object Manager interface. The top navigation bar includes 'Setup', 'Home', and 'Object Manager'. The main title is 'SETUP > OBJECT MANAGER' followed by 'HandsMen Order'. On the left, a sidebar lists various configuration tabs: Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, Search Layouts, List View Button Layout, Restriction Rules, Scoping Rules, Object Access, Triggers, Flow Triggers, Validation Rules, and Conditional Field Formatting. The 'Details' tab is selected. The main content area displays the following details for the 'HandsMen Order' object:

API Name	HandsMen_Order_c
Custom	<input checked="" type="checkbox"/>
Singular Label	HandsMen Order
Plural Label	HandsMen Orders
Enable Reports	
<input checked="" type="checkbox"/> Track Activities	
Track Field History	
Deployment Status	
Deployed	
Help Settings	
Standard salesforce.com Help Window	

At the bottom right of the main content area are 'Edit' and 'Delete' buttons.

SETUP > OBJECT MANAGER

Inventory

Details	Details	
Fields & Relationships	Description	<input type="checkbox"/> Enable Reports
Page Layouts		<input checked="" type="checkbox"/> Track Activities
Lightning Record Pages	API Name Inventory__c	Track Field History
Buttons, Links, and Actions	Custom <input checked="" type="checkbox"/>	Deployment Status
Compact Layouts	Singular Label Inventory	Deployed
Field Sets	Plural Label Inventorys	Help Settings
Object Limits		Standard salesforce.com Help Window
Record Types		
Related Lookup Filters		
Search Layouts		
List View Button Layout		
Restriction Rules		
Scoping Rules		
Object Access		
Triggers		
Flow Triggers		
Validation Rules		
Conditional Field Formatting		

[Edit](#) [Delete](#)

SETUP > OBJECT MANAGER

Marketing Campaign

Details	Details	
Fields & Relationships	Description	<input type="checkbox"/> Enable Reports
Page Layouts		<input checked="" type="checkbox"/> Track Activities
Lightning Record Pages	API Name Marketing_Campaign__c	Track Field History
Buttons, Links, and Actions	Custom <input checked="" type="checkbox"/>	Deployment Status
Compact Layouts	Singular Label Marketing Campaign	Deployed
Field Sets	Plural Label Marketing Campaigns	Help Settings
Object Limits		Standard salesforce.com Help Window
Record Types		
Related Lookup Filters		
Search Layouts		
List View Button Layout		
Restriction Rules		
Scoping Rules		
Object Access		
Triggers		
Flow Triggers		
Validation Rules		
Conditional Field Formatting		

[Edit](#) [Delete](#)

Setup Home Object Manager

Search Setup

User Interface

Rename Tabs and Labels

Tabs

Didn't find what you're looking for? Try using Global Search.

SETUP Tabs

Custom Tabs

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external web applications and content within the Salesforce window. Visualforce tabs allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app. Lightning Page tabs allow you to add Lightning Pages to Lightning Experience and the mobile app.

Custom Object Tabs

Action	Label	New	What Is This?	Tab Style	Description
Edit	Handshake Customers	People			

Web Tabs

No Web Tabs have been defined

Visualforce Tabs

No Visualforce Tabs have been defined

Lightning Component Tabs

Action	Label	New	What Is This?	Tab Style	Description
Edit	Get Started with Aperture	Heart			
Edit	Get Started with Data Cloud	Map			
Edit	Get Started with MuleSoft	Heart			
Edit	Get Started with Salesforce DX	Building Block			
Edit	Welcome	Gears			

Lightning Page Tabs

No Lightning Page Tabs have been defined

Help for this Page

Setup Home Object Manager

Search Setup

User Interface

Rename Tabs and Labels

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SETUP Tabs

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Custom Object Tabs

Action	Label	New	What Is This?	Tab Style	Description
Edit	Handshake Customers	People			
Edit	Handshake Orders	Shopping Cart			
Edit	Handshake Products	Bus			
Edit	Inventories	Track			
Edit	Marketing Campaigns	Mail			

Web Tabs

No Web Tabs have been defined

Visualforce Tabs

No Visualforce Tabs have been defined

Lightning Component Tabs

Action	Label	New	What Is This?	Tab Style	Description
Edit	Get Started with Aperture	Heart			
Edit	Get Started with Data Cloud	Map			
Edit	Get Started with MuleSoft	Heart			
Edit	Get Started with Salesforce DX	Building Block			
Edit	Welcome	Gears			

Lightning Page Tabs

No Lightning Page Tabs have been defined

Conclusion

The HandsMen Threads capstone project successfully delivered a robust, customized Salesforce CRM solution that fundamentally digitized the brand's approach to sales, customer loyalty, and inventory management.

By strategically implementing a blend of Apex programmatic automation and Salesforce Flow declarative tools, the core objectives were fully realized: achieving a dynamic loyalty program, enabling proactive stock alerting, and establishing reliable automated customer engagement. This implementation drastically moved the organization away from error-prone, manual processes and establishes a scalable, centralized digital backbone crucial for supporting HandsMen Threads' growth and future innovations in personalized fashion retail.

Future Scope and Enhancements

The current Salesforce implementation provides a stable and scalable foundation. The following future enhancements are recommended to further optimize the platform:

- **Commerce Cloud Integration:** Integrate the CRM with Commerce Cloud to manage the e-commerce storefront, providing a single source of truth for all product and inventory data.
- **AI-Powered Recommendations:** Leverage Salesforce Einstein capabilities to analyze customer purchase history and style preferences for intelligent, personalized product and style recommendations on the website and in marketing emails.
- **Service Cloud Implementation:** Implement Service Cloud to manage all post-sale interactions, including returns, alterations, and customer inquiries, providing a 360-degree view of the customer.
- **Customer Community Portal:** Deploy a Customer Experience Cloud portal where customers can independently view their loyalty status, track order history, and manage their personal style profile.