

# **Revolutionizing Agriculture with AgriEdge Or-Mange Ltd: A Salesforce-Driven Order Management Solution**

## **ABSTRACT**

**AgriEdge Or-Mange Ltd** is a leading agriculture and food production company aiming to streamline its order management processes. The Salesforce-driven Order Management System (OMS) automates order processing, provides real-time inventory tracking, improves customer service, and ensures accurate reporting. This system addresses challenges such as manual errors, stockouts, and delayed order fulfillment.

## **OBJECTIVES**

- Automate order creation and task assignment.
- Track orders and inventory in real time.
- Integrate with customer service channels for a unified experience.
- Ensure data security and compliance.
- Provide robust reporting and analytics.

## **TECHNOLOGY DESCRIPTION**

### **Salesforce**

The Salesforce Lightning platform serves as the foundation for the Order Management System (OMS). It provides a flexible and secure environment to manage orders, inventory, shipments, and customer interactions efficiently. Its cloud-based architecture allows real-time data access and automation across the organization.

## Custom Objects

Several custom objects were created to manage different aspects of the OMS:

- **AgriEdge\_Order\_\_c** – Stores information about customer orders.
- **AgriEdge\_OrderItem\_\_c** – Records the items included in each order.
- **AgriEdge\_Shipment\_\_c** – Tracks shipments related to orders.
- **AgriEdge\_Inventory\_\_c** – Maintains stock levels and inventory data.

These objects allow structured data storage, relationships between orders, items, and shipments, and facilitate automation and reporting.

## Tabs

Custom tabs were created for easy access to Orders, Order Items, Shipments, and Inventory. This improves navigation for users and ensures that all related information is readily available.

## Custom App

A Lightning App was developed to organize all OMS components in one place. This app provides users a central interface to view orders, tasks, shipments, and inventory.

## Profiles, Roles, Permission Sets

User access is controlled through profiles, roles, and permission sets:

- **Profiles** define what users can see and do in Salesforce (e.g., Platform 1 profile for OMS users).
- **Roles** establish hierarchy and record visibility across the organization.
- **Permission Sets** grant additional access to specific features or objects when needed.

## Validation Rules

- **Validation Rules** ensure data integrity by enforcing correct input in key fields (e.g., Order Status cannot be blank).

## Flow & Apex

- **Process Builder/Flows** automate repetitive tasks, such as creating tasks for new orders or updating statuses.

- **Email Notification Feature**

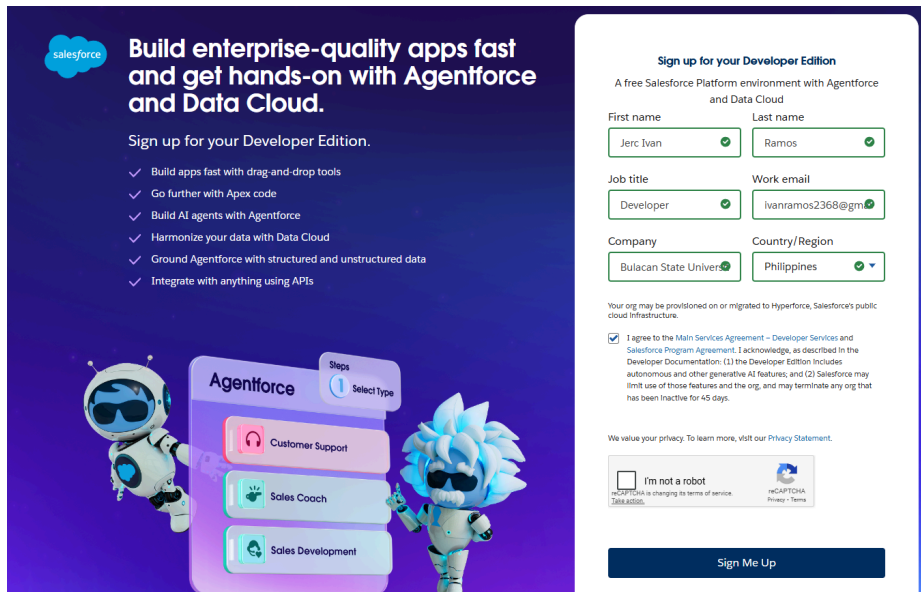
The system automatically sends email alerts when the Payment Status of an order changes. This helps ensure that customers and internal teams are notified immediately when an order is confirmed, paid, or cancelled. The automation runs through the Apex Email Handling class and is triggered by changes in the AgriEdge Order record.

- **Apex Classes** handle custom logic that cannot be done with standard automation. Main classes include:
  - **OrderTaskCreator** – Automatically creates tasks when a new order is made.
  - **OrderStatusUpdater** – Updates order statuses based on certain conditions.
  - **OrderTotalUpdater** – Calculates total amounts for orders and updates payment status.
  - **OrderEmailSender** – Sends email notifications to customers or internal users.

## DETAILED EXECUTION OF PROJECT PHASES

### 1. Salesforce Credentials Setup

- Logged into Salesforce Developer Org with admin credentials.



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First name: Jerc Ivan ✓ Last name: Ramos ✓

Job title: Developer ✓ Work email: ivanramos2368@gmail.com ✓

Company: Bulacan State University ✓ Country/Region: Philippines ✓

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## 2. Data Management – Objects

- Created custom objects: Orders, Order Items, Shipments, Inventories

SETUP **Object Manager** 4 Items, Sorted by Label

Search:  Schema Builder Create

**AgriEdge Order**

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
AgriEdge Inventory	AgriEdge_Inventory__c	Custom Object		11/8/2025	✓
AgriEdge Order	AgriEdge_Order__c	Custom Object		11/9/2025	✓
AgriEdge OrderItem	AgriEdge_OrderItem__c	Custom Object		11/8/2025	✓
AgriEdge Shipment	AgriEdge_Shipment__c	Custom Object		11/8/2025	✓

## 3. Creating the Lightning App

- A custom Lightning App named **AgriEdge** was created.
- Included tabs: **Orders, Order Items, Shipments, Inventory, Reports.**
- Assigned access to **System Administrator** and relevant profiles for proper permissions.

## 4. Validation Rules

To ensure accurate data entry and enforce business logic, the following validation rules were applied:

- **AgriEdge Shipment Object:** Prevents saving if **Order Status** is *Delivered* and **Tracking Number** is blank.  
**Error:** "Tracking Number is required before marking order as Delivered."
- **AgriEdge Inventory Object:** Prevents saving if **Stock Quantity**  $\leq$  **Reorder Level**.  
**Error:** "Stock is below reorder level. Please restock."

The screenshot shows a web form titled "Information" for creating a shipment. The form includes several fields: "AgriEdge Shipment" (text input with value "Test"), "Order" (dropdown menu with value "ORD-0001"), "Tracking Number" (text input, currently empty and highlighted in pink), "Carrier" (dropdown menu with value "FedEx"), and "Status" (text input with value "Pending"). To the right of the form, the "Owner" is listed as "Jerc Ivan Ramos". A validation error message is displayed in a pink box: "We hit a snag. Review the following fields: Tracking Number". Below the form, there are three buttons: "Cancel", "Save & New", and "Save". The "Save" button is disabled, indicated by a red circle with a slash over it.

## 5. User Role & Profile Setup

- **Profile Setup:** Cloned the Standard User profile to a new profile named Platform 1 and added access to necessary custom objects.
- **Roles:** Created roles for different departments:
  - Sales Representative
  - WareHouse Manager
  - Finance Team

## 6. User Creation

Users were created in Salesforce and assigned appropriate roles and profiles to reflect their responsibilities:

- John Production Engineer Sandbox 1 – Assigned the Sales Representative role and Platform 1 profile.

These role-based assignments help enforce proper data access and process control within the system.

The screenshot shows the Salesforce 'User Edit' interface for a user named 'John Production Engineer Sandbox 1'. The left sidebar contains navigation links for 'Setup', 'Home', and 'Object Manager'. The main content area is titled 'User Edit' and includes a 'Save' button. The 'General Information' section contains fields for First Name, Last Name, Alias, Email, Username, and Nickname. The 'Role' and 'Profile' dropdowns are set to 'Sales Representative' and 'Platform 1' respectively. The 'Active' checkbox is checked. The 'Marketing User' checkbox is unchecked. The 'Data.com User Type' dropdown is set to 'None'.

Field	Value
First Name	John Production Engineer
Last Name	Sandbox 1
Alias	jsand
Email	mahd.frahman06@gmail.com
Username	johnproductionengineer@sa
Nickname	User1739444782573173402
Role	Sales Representative
User License	Salesforce Platform
Profile	Platform 1
Active	<input checked="" type="checkbox"/>
Marketing User	<input type="checkbox"/>
Offline User	<input type="checkbox"/>
Knowledge User	<input type="checkbox"/>
Flow User	<input type="checkbox"/>
Service Cloud User	<input type="checkbox"/>
Site.com Contributor User	<input type="checkbox"/>
Site.com Publisher User	<input type="checkbox"/>
WDC User	<input type="checkbox"/>
Data.com User Type	None
Data.com Monthly Addition Limit	300
Accessibility Mode (Classic Only)	<input type="checkbox"/>
High Contrast Palette on Charts	<input type="checkbox"/>

## 7. Field-Level Access

Field-level security was configured to control which fields are visible or editable for specific user profiles:

- AgriEdge Order Object: Restricted access to the following fields for Platform 1 and Platform 2 profiles:
  - Payment\_Status\_\_c
  - Discount\_Total\_\_c
  - Total\_Amount\_\_c

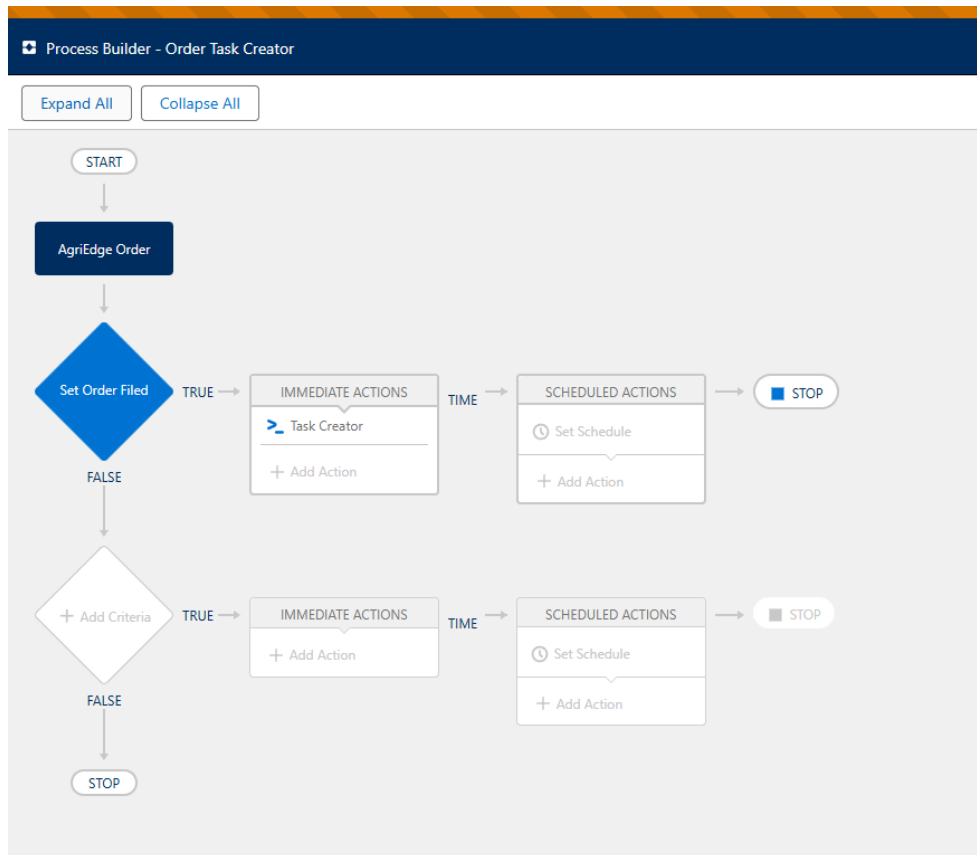
- **Verification:** Logged in as a user with the Sales Representative role to confirm that the restricted fields were disabled for editing and visibility.

This ensures sensitive fields are protected and users only see information relevant to their responsibilities.

## **8. Automation – Process Builder & Apex Classes**

A **Process Builder** was set up to automatically create tasks for new orders:

- **Process Name:** Order Task Creator
- **Trigger:** When a new AgriEdge Order record is created
- **Criteria:** Order Status is New
- **Action:** Call the Apex class **OrderTaskCreator** to create tasks for the responsible users
- **Activation:** Process is active and running



## PROJECT EXPLANATION WITH REAL-WORLD EXAMPLE

### 1. Customer Order Creation

- A farmer, John Production Engineer, places an order for seeds and fertilizers.
- In Salesforce: A new record is created in the **AgriEdge Order** object containing the customer name, selected products, quantity, and other required order details. This allows the business team to easily track and manage customer orders within the system.

### 2. Inventory Check



- The system verifies available stock in AgriEdge Inventory object.
- Validation Rule: If stock is below reorder level, an alert “Stock is below reorder level. Please restock” is triggered.

### **3. Order Processing**

- An Apex Trigger calculates total amount automatically for the order.
- Process Builder: Calls OrderTaskCreator to create tasks for responsible users to prepare the order.

### **4. Shipment Preparation**

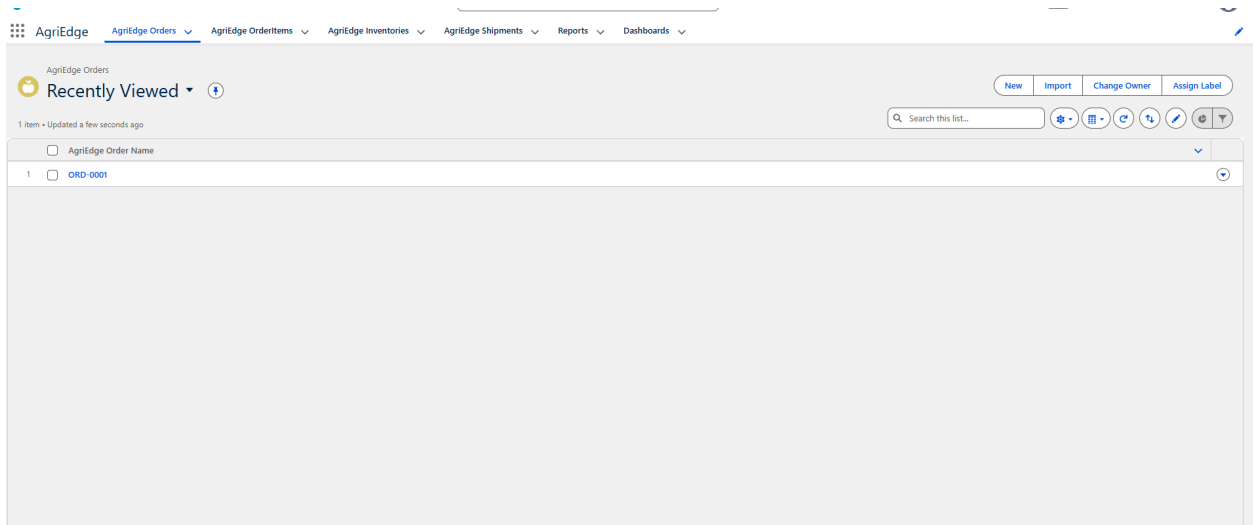
- A shipment record is created in AgriEdge Shipment object.
- Validation Rule: Requires Tracking Number before order can be marked as Delivered.

### **5. Email Notification**

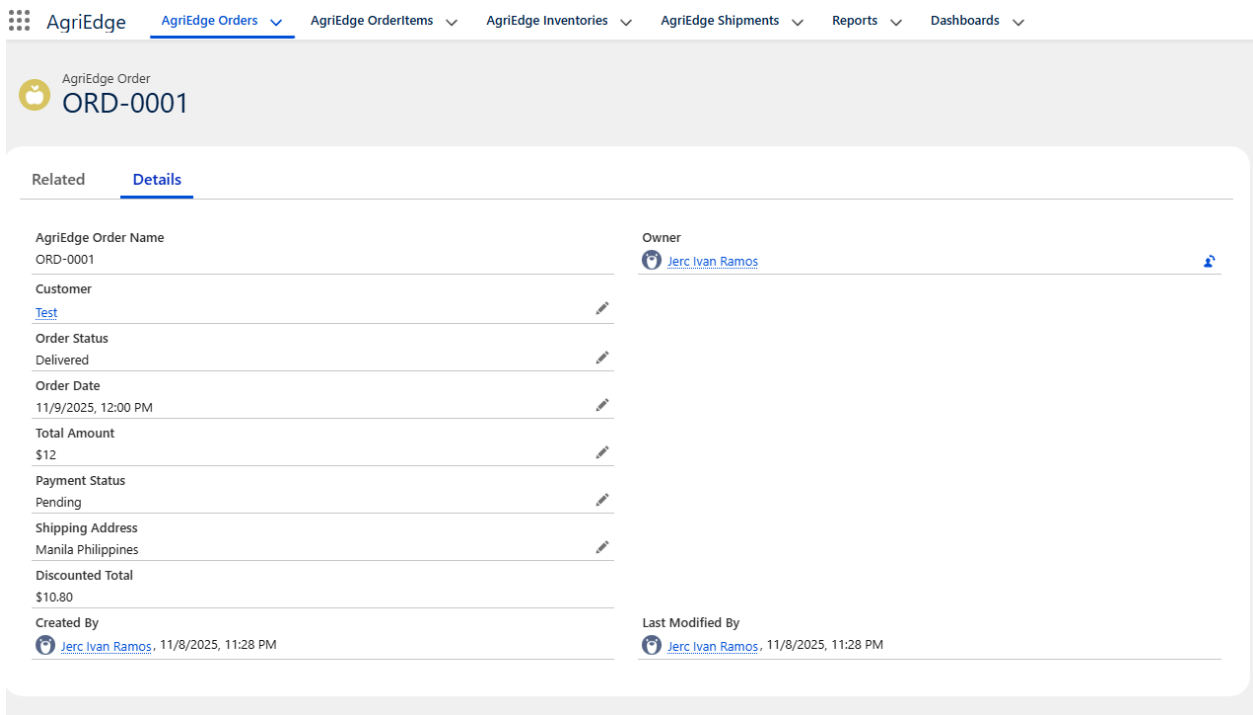
When the payment status is updated — for example, from *Pending* to *Paid* — the system automatically sends an email notification to the customer.

This assures that customers stay informed about their order progress without manual follow-ups.


## **SCREENSHOTS**



**FIG: Custom App for Agriculture with AgriEdge Or Mange Ltd**



**Fig: Order Creation in Agriculture with AgriEdge Or Mange Ltd**






AgriEdge OrderItem


Order Item for cord seeds

Related

Details

<div>AgriEdge OrderItem</div> <div>Order item for cord seeds</div> <div></div>	<div>Owner</div> <div> <a href="#">Jerc Ivan Ramos</a></div> <div></div>
<div>Order</div> <div><a href="#">ORD-0001</a></div> <div></div>	
<div>Product</div> <div><a href="#">Corn Seeds</a></div> <div></div>	
<div>Quantity</div> <div>5</div> <div></div>	
<div>Unit Price</div> <div>\$100</div> <div></div>	
<div>Total Price</div> <div>\$500.00</div> <div></div>	
<div>Created By</div> <div> <a href="#">Jerc Ivan Ramos</a>, 11/9/2025, 3:09 AM</div>	<div>Last Modified By</div> <div> <a href="#">Jerc Ivan Ramos</a>, 11/9/2025, 3:15 AM</div>

**FIG: Order Item Creation for Agriculture with AgriEdge Or Mange Ltd**






AgriEdge Inventory

Corn Seeds Stock

Related

Details

<div>AgriEdge Inventory</div> <div>Corn Seeds Stock</div> <div></div>	<div>Owner</div> <div> <a href="#">Jerc Ivan Ramos</a></div> <div></div>
<div>Product</div> <div><a href="#">Corn Seeds</a></div> <div></div>	
<div>Stock Quantity</div> <div>200</div> <div></div>	
<div>Reorder Level</div> <div>50</div> <div></div>	
<div>Warehouse Location</div> <div>Central Warehouse</div> <div></div>	
<div>Stock Status</div> <div>Sufficient</div> <div></div>	
<div>Created By</div> <div> <a href="#">Jerc Ivan Ramos</a>, 11/9/2025, 3:16 AM</div>	<div>Last Modified By</div> <div> <a href="#">Jerc Ivan Ramos</a>, 11/9/2025, 3:16 AM</div>

**FIG: Inventory Creation for Agriculture with AgriEdge Or Mange Ltd**

AgriEdge Shipment

Shipment for Order-0001

Related

Details

AgriEdge Shipment

Shipment for Order-0001

Order

ORD-0001

Tracking Number

TRK-ORD-0001

Carrier

FedEx

Status

Pending

Created By

Jerc Ivan Ramos · 11/9/2025, 3:17 AM

Owner

Jerc Ivan Ramos

Last Modified By

Jerc Ivan Ramos · 11/9/2025, 3:17 AM

**FIG: Shipment Creation for Agriculture with AgriEdge Or Mange Ltd**

Information

\* AgriEdge Shipment

Test

Order

ORD-0001

Tracking Number

Tracking Number is required before marking order as Delivered.

Carrier

FedEx

Status

Pending

Owner

Jerc Ivan Ramos

ⓘ We hit a snag.

Review the following fields

- Tracking Number

Cancel

Save & New

Save

**FIG: Error Alert on following fields**

## Your Order Payment Status has been Updated Spam x



**Jerc Ivan Ramos** via [0yrzkz5mbbf3yyna.js9596.gk-euuv3uah.can96.bnc.salesforce.com](mailto:0yrzkz5mbbf3yyna.js9596.gk-euuv3uah.can96.bnc.salesforce.com)  
to me ▾

Why is this message in spam? This message is similar to messages that were identified as spam in the past.

Report not spam

Dear Customer,

Your order has been updated with the following details:

**Order Name:** ORD-0015  
**Order Status:** Processing  
**Total Amount:** 50  
**Payment Status:** Paid  
**Shipping Address:** Manila  
**Created Date:** 2025-11-10 06:05:16

**Total Amount Paid (Including Discount):** 45.00

Thank you for your business!

Best Regards,  
Your Company Name

**FIG: Email Notification Feature Triggered by Payment Status Update**

## New AgriEdge Inventory

\* = Required Information

### Information

Inventory Name

Owner

MileStone John

Product

Search Products...



Stock Quantity

60

Reorder Level

80

⛔ We hit a snag.

Review the errors on this page.

- "Stock is below reorder level. Please restock."

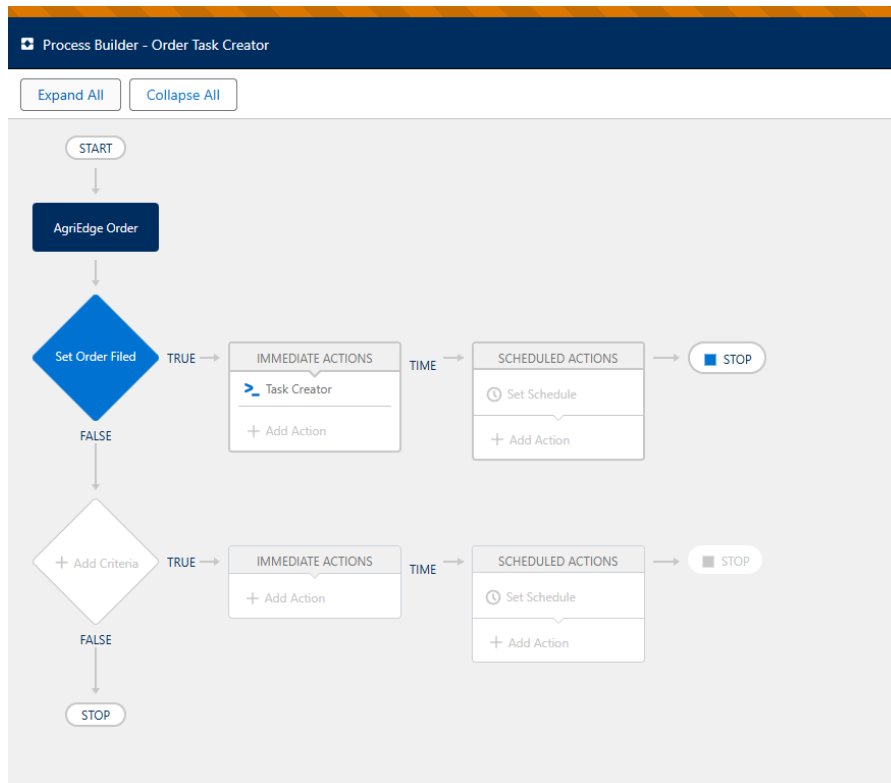


Cancel

Save & New

Save

**FIG: Error Alert on following fields**



**FIG: Automation Process Builder and Apex Classes**

## CONCLUSION

The AgriEdge Order Management System developed on Salesforce successfully improves how agricultural product orders are recorded, tracked, and processed. By using Salesforce Custom Objects such as AgriEdge Orders, Products, Inventory, and Shipments, the system ensures organized data management and reduces manual work. Automations like validation rules help maintain accurate records while ensuring that orders and stock updates are properly followed. This system supports faster order processing, better visibility of inventory, and improved coordination between the order and shipment process. Additionally, automated email notifications keep customers informed of payment and order updates, improving communication and customer satisfaction.

## **FUTURE SCOPE**

1. **Supplier Portal Integration**

Allow suppliers to log in and view purchase orders, confirm deliveries, and update shipment details.

2. **Enhance email notifications with branded templates and SMS alerts for faster communication.**

3. **Inventory Forecasting**

Use Salesforce AI tools to predict low-stock items and automatically alert the operations team.

4. **Mobile App for Field Staff**

Provide real-time access for workers in farms or warehouses to update product stock and delivery status.

5. **Advanced Reports & Dashboards**

Create visual sales reports and inventory dashboards for better decision-making and performance insights.