

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

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Abstract:

In the dynamic world of agriculture, efficient order management is crucial for ensuring timely product delivery, accurate tracking, and enhanced customer satisfaction. **AgriEdge Or-Mange Ltd** presents a robust, Salesforce-powered solution that revolutionizes how agricultural businesses handle orders, shipments, and payments.

This project introduces the **AgriEdge Order Management System**, a comprehensive platform built on Salesforce's powerful declarative tools and Apex programming capabilities. It is designed to streamline the end-to-end lifecycle of agricultural product orders—from order creation to item management, shipment tracking, and automated status updates.

In essence, this project exemplifies how modern cloud platforms like Salesforce can be effectively tailored to solve industry-specific challenges. By transforming traditional, spreadsheet-based order tracking into an intelligent, real-time order management system, **AgriEdge Or-Mange Ltd** sets a new standard for digital transformation in agriculture.

Objective:

The primary objective of this project is to design and implement a **robust, scalable, and intelligent Order Management System** on the Salesforce platform, specifically tailored to meet the operational needs of the agricultural sector. This system aims to streamline the end-to-end process of handling product orders,

managing related order items, and tracking shipments with real-time automation and minimal manual intervention.

To achieve this, the project sets forth the following specific goals:

- **Custom Object Design:** Create and configure key custom objects to represent core entities in the system:
 - AgriEdge_Order__c to capture and store comprehensive details of each customer order.
 - AgriEdge_OrderItem__c to manage individual product line items associated with orders, including quantity, pricing, and discounts.
 - AgriEdge_Shipment__c to track shipping status, delivery details, and logistical updates for each order.
- **Automated Total Calculation:** Implement logic that automatically calculates the total amount of an order based on its associated order items. This includes applying any discounts and ensuring accurate and real-time computation of the Discounted_Total__c field.
- **Dynamic Status Management:** Automatically update the Order_Status__c and Payment_Status__c fields based on predefined business logic. This ensures that the system reflects the true status of each transaction, from order placement to shipment and payment completion.
- **Shipment Lifecycle Integration:** Seamlessly integrate shipment creation and updates with the order lifecycle. The system will ensure that any changes to the order or its items are reflected in the shipment records, maintaining data consistency and reducing errors.
- **Apex-Based Automation:** Utilize Apex triggers and helper classes to enforce business rules, automate repetitive tasks, and maintain data integrity across all related records. This ensures consistent behavior and efficient background processing.

Technology Description :

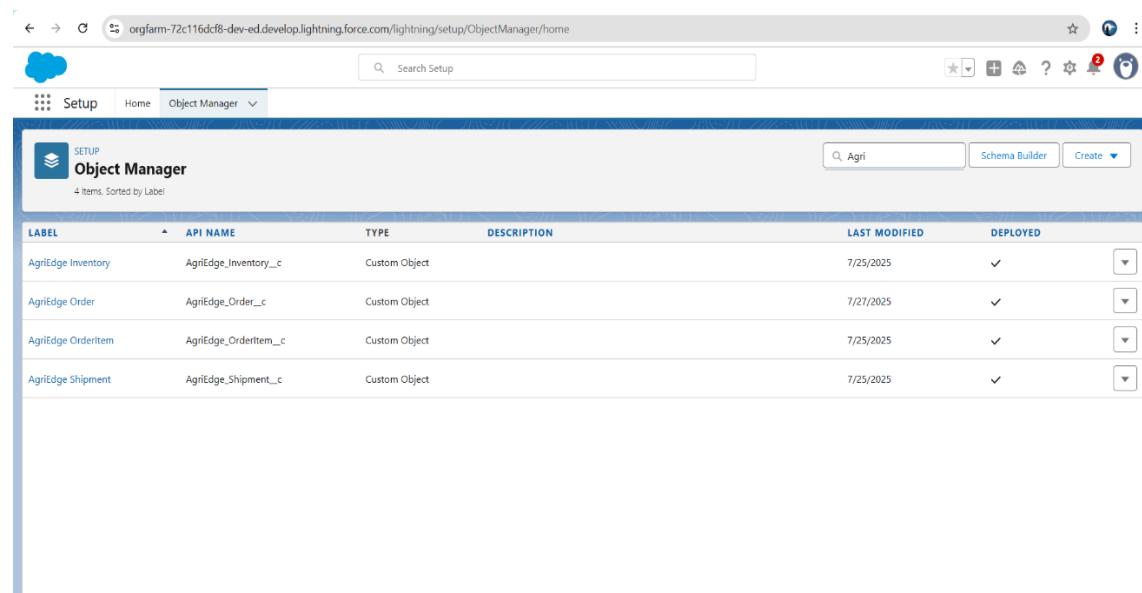
The **AgriEdge Order Management System** is developed on the **Salesforce Platform**, utilizing its robust cloud-based architecture to deliver a scalable, secure, and intelligent solution tailored for the agricultural domain. The system combines both **declarative tools** and **programmatic components** to manage the complete lifecycle of orders, order items, and shipments, ensuring automation, data integrity, and ease of use. By leveraging the full potential of Salesforce CRM, the application enables seamless collaboration between sales, logistics, and customer support teams while minimizing manual intervention and operational inefficiencies.

Technologies Used:

Technology	Description
Salesforce CRM	Cloud-based CRM platform used to build and manage the entire application.
Custom Objects	AgriEdge_Order__c, AgriEdge_OrderItem__c, and AgriEdge_Shipment__c created to represent and store order-related data.
Apex Classes	Used to implement business logic for updating order totals, shipment status, and payment handling.
Apex Triggers	Invoked automatically after data changes (insert/update) to process related records and ensure data consistency.
SOQL (Salesforce Object Query Language)	Used to query Salesforce records in Apex code.
Lightning UI	Salesforce interface used by users to interact with records through standard or customized layouts.

Workflow Automation Tools:

- **Invocable Apex:** Enables integration between Apex logic and declarative tools like Flows, allowing complex backend logic to be triggered through automated workflows.
- **Validation Rules:** Enforce data integrity by ensuring that user inputs comply with predefined conditions and business logic.
- **Lookup Relationships:** Define associations between custom objects such as orders, order items, and shipments to maintain relational data structures and enable effective record linking.



The screenshot shows the Salesforce Object Manager interface. The page title is "Object Manager". A search bar at the top right contains the text "Agri". Below the search bar are buttons for "Schema Builder" and "Create". The main area displays a table with four rows, each representing a custom object:

LABEL	API NAME	TYPE	DESCRIPTION	LAST MODIFIED	DEPLOYED
AgriEdge Inventory	AgriEdge_Inventory__c	Custom Object		7/25/2025	✓
AgriEdge Order	AgriEdge_Order__c	Custom Object		7/27/2025	✓
AgriEdge Orderitem	AgriEdge_OrderItem__c	Custom Object		7/25/2025	✓
AgriEdge Shipment	AgriEdge_Shipment__c	Custom Object		7/25/2025	✓

(Objects)

SETUP > OBJECT MANAGER
AgriEdge Order

Fields & Relationships
12 Items, Sorted by Field Label

			Quick Find	New	Deleted Fields	Field Dependencies	Set History Tracking
Created By	CreatedById	Lookup(User)					
Customer	Customer__c	Lookup(Account)	✓				
Discounted Total	Discounted_Total__c	Formula (Currency)					
Last Modified By	LastModifiedById	Lookup(User)					
Order Date	Order_Date__c	Date/Time					
Order Number	Order_Number__c	Auto Number					
Order Status	Order_Status__c	Picklist					
Owner	OwnerId	Lookup(User,Group)	✓				
Payment Status	Payment_Status__c	Picklist					
Shipping Address	Shipping_Address__c	Text Area(255)					
Total Amount	Total_Amount__c	Currency(18, 0)					

(AgriEdge Order Fields)

SETUP > OBJECT MANAGER
AgriEdge OrderItem

Fields & Relationships
10 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
AgriEdge Order	AgriEdge_Order__c	Lookup(AgriEdge Order)	✓	
AgriEdge OrderItem	Name	Text(80)	✓	
Created By	CreatedById	Lookup(User)		
Last Modified By	LastModifiedById	Lookup(User)		
Order	Order__c	Lookup(AgriEdge Order)	✓	
Owner	OwnerId	Lookup(User,Group)	✓	
Product	Product__c	Lookup(Product)	✓	
Quantity	Quantity__c	Number(18, 0)		
Total Price	Total_Price__c	Formula (Currency)		
Unit Price	Unit_Price__c	Currency(18, 0)		

(AgriEdge OrderItem Fields)

AgriEdge Shipment

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
AgriEdge Order	AgriEdge_Order__c	Lookup(AgriEdge Order)		✓
AgriEdge Shipment	Name	Auto Number		✓
Carrier	Carrier__c	Picklist		▼
Created By	CreatedById	Lookup(User)		▼
Last Modified By	LastModifiedById	Lookup(User)		▼
Order	Order__c	Lookup(AgriEdge Order)		✓
Owner	OwnerId	Lookup(User,Group)		✓
Status	Status__c	Picklist		▼
Tracking Number	Tracking_Number__c	Text(60)		▼

(AgriEdge Shipment Fields)

AgriEdge Inventory

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
AgriEdge Inventory	Name	Text(80)		✓
Created By	CreatedById	Lookup(User)		▼
Last Modified By	LastModifiedById	Lookup(User)		▼
Owner	OwnerId	Lookup(User,Group)		✓
Product	Product__c	Lookup(Product)		✓
Reorder Level	Reorder_Level__c	Number(18, 0)		▼
Stock Quantity	Stock_Quantity__c	Number(18, 0)		▼
Stock Status	Stock_Status__c	Formula (Text)		▼
Warehouse Location	Warehouse_Location__c	Text(255)		▼

(AgriEdge Inventory Fields)

AgriEdge OrderItem urea

Related Details

AgriEdge OrderItem	Owner
urea	Mohan Chittiboina
Order	
ORD-0007	
Product	
urea	
Quantity	
1,000	
Unit Price ⓘ	
\$100	
Total Price	
\$100,000.00	
AgriEdge Order	
ORD-0007	
Created By	Last Modified By
Mohan Chittiboina , 7/27/2025, 8:23 PM	Mohan Chittiboina , 7/27/2025, 8:23 PM

(AgriEdge OrderItem)

AgriEdge Order ORD-0004

Related Details

AgriEdge Order Name	Owner
ORD-0004	Mohan Chittiboina
Customer	
Test customer	
Order Status	
Processing	
Order Date ⓘ	
7/27/2025, 12:00 PM	
Total Amount	
\$100,000	
Payment Status	
Pending	
Shipping Address	
kadapa	
Discounted Total	
\$90,000.00	
Order Number	
ORD-0004	
Created By	Last Modified By
Mohan Chittiboina , 7/27/2025, 7:26 PM	Mohan Chittiboina , 7/27/2025, 10:23 PM

(AriEdge Order)

Sales Home Opportunities Leads Tasks Files Accounts Contacts Campaigns Dashboards Reports Chatter Groups AgriEdge Orders More

AgriEdge Order ORD-0004

Related Details

AgriEdge OrderItems (1)

AgriEdge OrderItem wheat!

View All

AgriEdge Shipments (0)

(AgriEdge Order Related Tab)

AgriEdge Orders AgriEdge OrderItems AgriEdge Inventories AgriEdge Shipments Reports Dashboards

AgriEdge Shipment SHIP-0006

Related Details

AgriEdge Shipment SHIP-0006

Order

Tracking Number TEST_a00gL00000CB1JdQAL

Carrier

Status Delivered

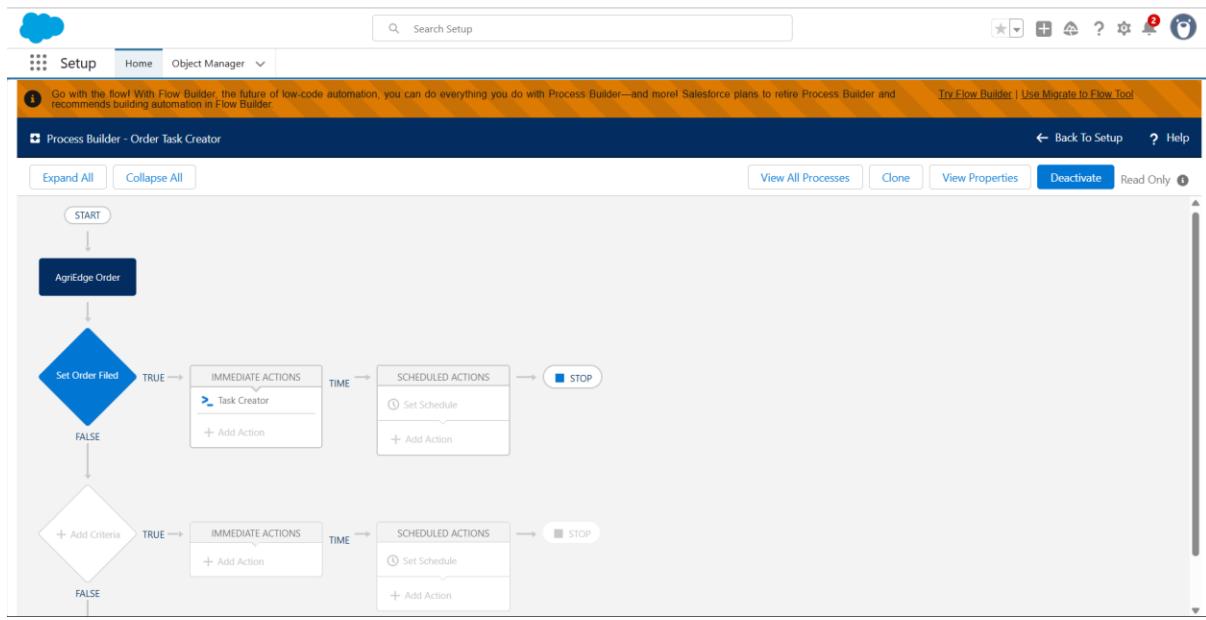
AgriEdge Order ORD-0004

Created By Mohan Chittiboina, 7/27/2025, 7:53 PM

Owner Mohan Chittiboina

Last Modified By Mohan Chittiboina, 7/27/2025, 8:20 PM

(AgriEdge Shipments)



(Process - Order Task Creator)

Action	Profile Name	User License	Custom
<input type="checkbox"/> Edit Clone	Partner App Subscription User	Partner App Subscription	<input type="checkbox"/>
<input type="checkbox"/> Edit Clone	Partner Community Login User	Partner Community Login	<input type="checkbox"/>
<input type="checkbox"/> Edit Clone	Partner Community User	Partner Community	<input type="checkbox"/>
<input type="checkbox"/> Edit Del ...	Platform 1	Salesforce Platform	<input checked="" type="checkbox"/>
<input type="checkbox"/> Edit Del ...	Platform 2	Salesforce Platform	<input checked="" type="checkbox"/>
<input type="checkbox"/> Edit Del ...	Platform 3	Salesforce Platform	<input checked="" type="checkbox"/>

(Profiles)

Project Explanation with Real-World Example

Overview

This project simulates a real-world agricultural supply chain management system built on the Salesforce platform. It is designed for **AgriEdge Pvt. Ltd.**, a fictional agribusiness that supplies farming essentials like seeds, irrigation tools, and crop protection materials. The system automates order creation, item management, and shipment tracking, offering a centralized solution for sales and logistics teams to handle daily operations with precision and real-time visibility.

Real-World Example Scenario

Let's say **AgriEdge Pvt. Ltd.**, a supplier of agricultural products, receives an order from a farm distributor named **GreenHarvest Traders** for:

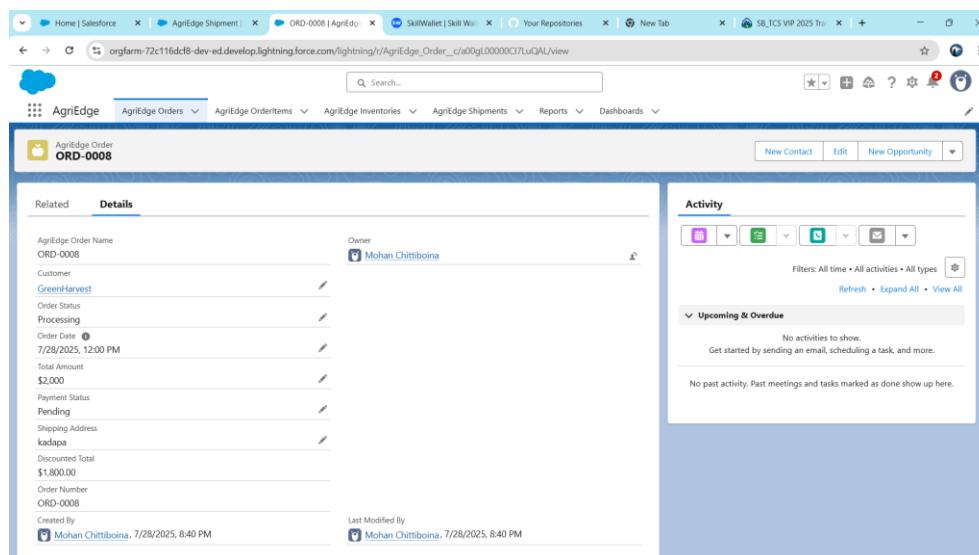
- 20 packets of Hybrid Maize Seeds
- 2 Drip Irrigation Kits

The company uses Salesforce to manage the complete order lifecycle. Here's how the system handles the process:

Step 1: Order Creation (AgriEdge_Order__c)

A sales representative logs a new order record in Salesforce:

- Customer: GreenHarvest Traders
- Order Status: Pending
- Payment Status: Not Paid



(AgriEdge Order)

Step 2: Adding Items (AgriEdge_OrderItem__c)

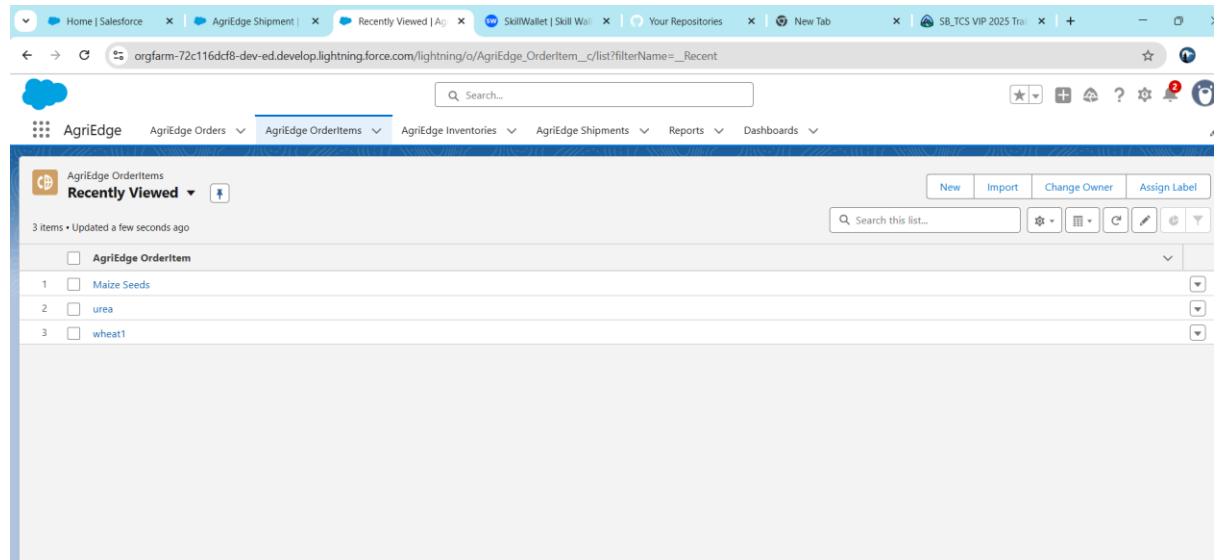
The representative adds product items to the order:

- Item 1: 20 packets of Maize Seeds @ ₹150 each
- Item 2: 2 Drip Kits @ ₹2,500 each

Once the items are saved:

- The total amount is calculated automatically using the OrderTotalUpdater Apex class.
- If the total exceeds a certain threshold, the system updates the order status using custom trigger logic.

(Sample item list with quantities, unit price, and total)



Name	Quantity	Unit Price	Total
Maize Seeds	20	150	3000
urea	2	2500	5000
wheat1	1	150	150

(AgriEdge OrderItem)

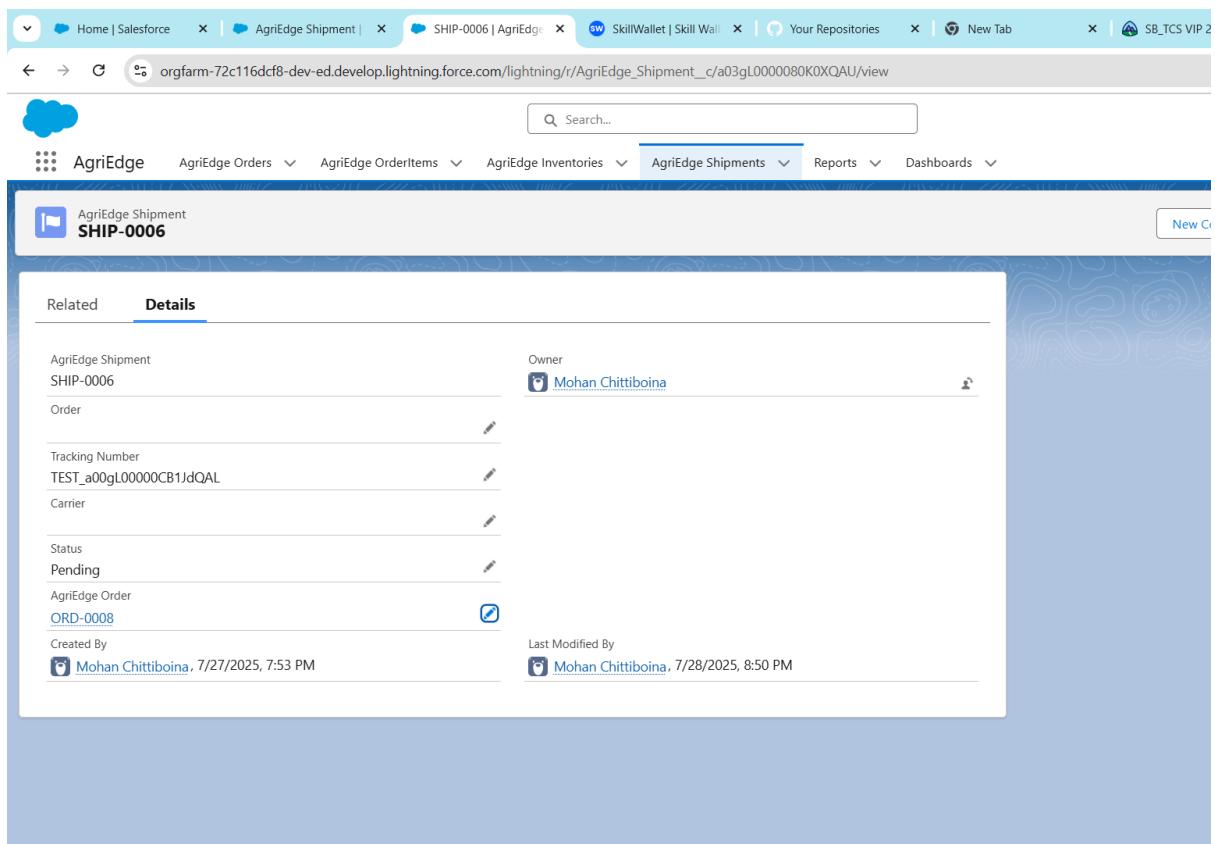
Step 3: Shipment Creation (AgriEdge_Shipment__c)

Once payment is confirmed:

- A shipment is scheduled, and a new shipment record is created:
 - Tracking Number: Auto-generated or entered manually
 - Carrier: Delhivery Logistics
 - Shipment Status: In Transit

If the tracking number is missing or the shipment date is not provided, validation rules prevent the record from being saved to ensure shipping accuracy.

(Shipment record UI showing carrier, status, and tracking details)



The screenshot shows the AgriEdge Shipment record detail page in Salesforce Lightning. The page has a header with tabs: Home | Salesforce, AgriEdge Shipment, SHIP-0006 | AgriEdge, SkillWallet | Skill Wa..., Your Repositories, New Tab, and SB_TCS VIP 2. Below the header is a search bar and a navigation bar with links: AgriEdge, AgriEdge Orders, AgriEdge OrderItems, AgriEdge Inventories, AgriEdge Shipments (which is selected and highlighted in blue), Reports, and Dashboards. The main content area displays the AgriEdge Shipment record for SHIP-0006. The record has a section titled "Related" and a larger "Details" section. The "Details" section contains the following fields and their values:

- AgriEdge Shipment: SHIP-0006
- Order: (link to ORD-0008)
- Tracking Number: TEST_a00gL00000CB1JdQAL
- Carrier: (link to Delhivery Logistics)
- Status: Pending
- Created By: Mohan Chittiboina, 7/27/2025, 7:53 PM
- Last Modified By: Mohan Chittiboina, 7/28/2025, 8:50 PM

(shipment form with tracking and carrier fields.)

💡 Automation Using Triggers and Apex

- **Trigger** on AgriEdge_OrderItem__c: Automatically updates order total and order status whenever items are added/updated.
- **Helper Class**: Handles creation or update of shipment when order status changes to "Delivered".
- **Validation**: Ensures data integrity (e.g., tracking number is required for completed orders).

Class	Percent	Lines
Overall	87%	
AgriEdgeOrderShipmentHelper	79%	46/58
AgriEdgeOrderTrigger	94%	33/35
AgriEdgeOrderTriggerHelper	100%	1/1
OrderEmailSender	97%	34/35
OrderItemTrigger	100%	7/7
OrderPaymentStatusTriggers	71%	5/7
OrderStatusUpdater	55%	5/9
OrderTaskCreator	89%	17/19
OrderTotalUpdater	94%	16/17

Class	Percent	Lines
Overall	87%	
AgriEdgeOrderShipmentHelper	79%	46/58
AgriEdgeOrderTrigger	94%	33/35
AgriEdgeOrderTriggerHelper	100%	1/1
OrderEmailSender	97%	34/35
OrderItemTrigger	100%	7/7
OrderPaymentStatusTriggers	71%	5/7
OrderStatusUpdater	55%	5/9
OrderTaskCreator	89%	17/19
OrderTotalUpdater	94%	16/17

(Codes Successfully compiled in Salesforce Apex class editor.)

Result

Thanks to the system, **GreenHarvest Traders** receives clear and timely order updates, while AgriEdge staff can efficiently manage inventory, shipments, and billing—all in one integrated Salesforce environment.

Conclusion

The **AgriEdge Order and Shipment Management System** serves as a compelling demonstration of how Salesforce can be leveraged to optimize and automate key operations in the agricultural supply chain. By integrating custom objects such as `AgriEdge_Order__c`, `AgriEdge_OrderItem__c`, and `AgriEdge_Shipment__c` with Apex Triggers and Classes, the system brings structure, accuracy, and automation to the end-to-end order management process.

Key accomplishments of the system include:

- **Automated Order Total Calculation:** Ensures real-time and accurate billing based on dynamic item entries.
- **Dynamic Order and Payment Status Updates:** Reflects the true state of transactions as order and payment data changes.
- **Validated Shipment Management:** Enforces the presence of critical information like tracking numbers before shipments are processed.
- **Improved Data Integrity:** Utilizes validation rules and lookup relationships to prevent inconsistencies and enforce business logic.

Overall, the solution enhances visibility, reduces manual workloads, and significantly improves operational efficiency. For organizations like AgriEdge that deal with product distribution and logistics, this system provides a scalable and reliable foundation for digital transformation and future growth.

Future Scope

The current implementation of the AgriEdge Order and Shipment Management System establishes a solid foundation for digital order management within the agricultural domain. However, there are several opportunities to expand the system's functionality and provide even more value to stakeholders. Below are some key enhancements envisioned for future development:

1. Real-Time Inventory Integration

- Integrate with a custom object like AgriEdge_Inventory_c to automatically adjust stock levels as orders are placed or canceled.
- Display live inventory availability to prevent over-selling and enable better demand forecasting.

2. Customer Self-Service Portal

- Develop a portal using Salesforce Experience Cloud where customers (e.g., farmers, retailers) can log in to place orders, track shipments, and view their order history.
- Improve customer engagement and reduce dependency on sales reps.

3. Mobile-Optimized Interface

- Leverage the Salesforce Mobile App or develop Lightning Web Components (LWC) for seamless mobile access.
- Empower field sales teams and delivery staff with real-time data on orders and shipments.

4. Advanced Reporting & Dashboards

- Create interactive dashboards to track KPIs such as total revenue, pending deliveries, and high-demand products.
- Add regional sales insights and product performance charts to support data-driven decision-making.

5. AI-Powered Recommendations

- Utilize Salesforce Einstein to suggest frequently purchased products, optimal delivery times, or seasonal trends based on historical data and customer behavior.

6. Third-Party Logistics (3PL) Integration

- Connect with APIs from shipping providers like FedEx, DHL, or Blue Dart to fetch live tracking information.
- Display delivery progress directly within the Salesforce interface for both internal teams and customers.

7. Enhanced Role-Based Access Control

- Define granular profile permissions and role hierarchies for different user types such as admins, sales representatives, warehouse staff, and finance teams.
- Ensure secure and controlled access to sensitive business data.