

Revolutionizing Agriculture with AgriEdge Or-Mange Ltd:

Project Documentation by:
Bhupathi Penchala Sai
22102A040689
CSE A9
Mohan Babu University

A Salesforce-Driven Order Management Solution

I. Project Overview

Project Title: Revolutionizing Agriculture with AgriEdge Or-Mange Ltd: A Salesforce-Driven Order Management Solution. This project presents an innovative Salesforce-based Order Management System designed for AgriEdge Or-Mange Ltd, a company specializing in agricultural product distribution. The solution leverages Salesforce's cloud platform to streamline order processing, improve data visibility, and automate critical business operations from order creation to shipment tracking.

II. Objectives

1. Automate Order Processing

Implement Salesforce automation through Apex triggers, Process Builder, and workflows to handle repetitive tasks such as total order calculations, shipment creation, and email notifications minimizing manual input and errors.

2. Enhance Data Accuracy

Ensure consistency between related records (Orders, Order Items, Shipments) using validation rules and trigger logic. This reduces data discrepancies and improves the reliability of business reports.

3. Improve Operational Efficiency

Streamline order-to-shipment workflows to shorten processing times and enable faster delivery. Automated updates and real-time data visibility empower staff to focus on value-driven tasks rather than administrative work.

4. Centralize Information Management

Utilize Salesforce's centralized database to store and manage all order-related information in one unified platform, improving accessibility, collaboration, and reporting across departments.

III. System Features

• Order Creation and Management

Users can easily create, edit, and track customer orders within Salesforce. Each order record includes details such as customer information, products purchased, total amount, and order status.

- **Order Item Integration**
Each order can have multiple order items linked through a lookup relationship. This ensures every product line item is properly associated with its parent order, allowing for accurate reporting and price calculations.
- **Shipment Automation**
When an order reaches the “Processing” stage, the system automatically generates a related shipment record, assigning a tracking number and default status (“Pending”). This reduces manual data entry and ensures smooth logistics tracking.
- **Order Total Calculation**
A custom Apex class (OrderTotalUpdater) automatically sums all related order items and updates the order’s total price in real-time whenever items are added, updated, or deleted.
- **Email Notifications**
The OrderEmailSender class sends automated email alerts to order owners when specific actions occur (e.g., an order is processed or completed), ensuring timely communication and better customer engagement.
- **Task Creation**
Using the OrderTaskCreator class, follow-up tasks are automatically generated for users to take action on orders, such as confirming shipments or notifying customers.

IV. System Architecture

- **AgriEdge_Order_c** – Custom object representing customer orders; contains total price, status, and related account details.
- **AgriEdge_OrderItem_c** – Child object that holds individual product details linked to an order.
- **AgriEdge_Shipment_c** – Tracks shipment information, including tracking numbers and delivery status.
- **Product_c** – Stores information about agricultural products, pricing, and stock availability.
- **Account** – Represents customers, vendors, or partners linked to each order.

Data Flow:

1. User creates an order → status defaults to "Pending".
2. Order Items are added → OrderTotalUpdater recalculates total.
3. Order status changes to "Processing" → Shipment auto-created.
4. Email notification sent → Task generated for follow-up.

V. Technical Components

Apex Classes:

- OrderTotalUpdater: Updates total price of an order.
- OrderEmailSender: Sends email notifications.
- OrderTaskCreator: Creates follow-up tasks.
- OrderHelper: Reusable logic.

Triggers:

- OrderTrigger (AgriEdge_Order_c)
- OrderItemTrigger (AgriEdge_OrderItem_c)

Test Classes:

- AgriEdgeOrderTests
- OrderItemTests
- OrderEmailTests

Code Coverage: >90%

VI. Automation and Workflows

- Workflow rules for order status updates.
- Validation rules for ensuring product quantity and shipment presence.

VII. User Roles and Permissions

- **Sales Representative**

Responsible for creating and managing customer orders within the Salesforce system. Sales representatives can add order items, track order statuses, and monitor shipment updates to ensure accurate and timely fulfillment.

- **Warehouse Staff**

Handles the shipment aspect of the process. They can update shipment statuses (e.g.,

from “Pending” to “Delivered”) and provide tracking information, ensuring that logistics data is accurately reflected in the system.

- **Administrator**

Possesses full system access and configuration privileges. Administrators oversee system performance, manage user roles, customize Salesforce objects, and ensure that automations and triggers function as intended.

VIII. Reports and Dashboards

- **Sales Overview Dashboard**

Provides a visual summary of total orders, revenue, and shipment statuses, allowing management to assess sales performance at a glance.

- **Order Performance Report**

Tracks key order metrics such as average processing time, number of orders completed, and outstanding orders — helping identify bottlenecks and improve efficiency.

- **Inventory Summary**

Displays real-time data on product availability, order quantities, and top-selling items. This ensures informed decisions on restocking and supply chain management.

IX. Testing and Quality Assurance

- **Unit Testing**

Apex test classes were created to verify the functionality of triggers, classes, and automation components, ensuring that each operates correctly in isolation.

- **Integration Testing**

Tested the interaction between custom objects (Orders, Order Items, Shipments) to confirm that data flows seamlessly and business logic executes properly across components.

- **User Acceptance Testing (UAT)**

Conducted with key AgriEdge stakeholders to validate system usability, performance, and business requirements before deployment to production.

X. Deployment and Maintenance

Deployment

All components (Apex classes, triggers, objects, and workflows) were deployed using **Salesforce Change Sets**. Validation was conducted in a **Sandbox environment** prior to production release to ensure stability and functionality.

Maintenance

Ongoing maintenance involves regular monitoring of Apex logs, reviewing user feedback, and implementing updates or optimizations to improve system reliability and performance over time.

XI. Impact and Benefits

- **Faster Order Processing**
Automation reduces manual intervention, allowing orders to move quickly from creation to shipment.
- **Improved Data Accuracy**
Validation rules and trigger logic maintain data consistency, reducing human error.
- **Better Customer Experience**
Automated email notifications and timely updates improve communication with customers.
- **Centralized Analytics**
Unified reporting through Salesforce dashboards provides management with actionable business insights.

XII. Future Enhancements

- **Salesforce Mobile App Integration**
Enable sales and warehouse staff to access and update order information on the go using mobile devices.
- **AI-Driven Analytics**
Implement Salesforce Einstein Analytics to predict sales trends, identify best-selling products, and optimize inventory management.
- **Multi-Currency Support**
Expand the system's usability across regions by incorporating multi-currency and localization features.

XIII. Conclusion

The **AgriEdge Salesforce Order Management Solution** demonstrates how technology can transform agricultural business operations. By integrating automation, real-time data tracking, and analytics, the system enhances efficiency, reduces manual work, and strengthens customer relationships. This project establishes a modern foundation for AgriEdge Or-Mange Ltd to continue innovating in the agricultural sector through Salesforce's robust ecosystem.

