

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

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Abstract:

The **AgriEdge Order Management System** is a custom-built Salesforce application developed to streamline the end-to-end management of agricultural product orders, including associated items and shipment tracking. Leveraging both declarative and programmatic features of the Salesforce platform, the solution ensures efficient data handling and automation.

This project utilizes custom objects such as `AgriEdge_Order__c`, `AgriEdge_OrderItem__c`, and `AgriEdge_Shipment__c` to manage key business data. Apex triggers and helper classes like `OrderTotalUpdater` and `OrderStatusUpdater` are implemented to automate business logic. The system dynamically calculates the total order amount when order items are created or modified and updates the payment status accordingly, maintaining data integrity across related records.

By reducing manual intervention, enhancing data accuracy, and providing real-time visibility into the order lifecycle, this solution significantly improves operational efficiency. It serves as a practical demonstration of how Salesforce can be tailored to meet the specific needs of industries such as agriculture.

Objective:

The primary goal of this project is to design and implement a **robust and efficient Order Management System** within the Salesforce platform, specifically tailored to meet the needs of the **agricultural sector**. This system is intended to automate and streamline the complete lifecycle of orders, including order items and shipment processes, through the use of custom Salesforce objects and Apex logic.

Key Objectives:

- **Design and implement custom Salesforce objects** to represent core business entities:
 - AgriEdge_Order__c – to capture and manage overall order details
 - AgriEdge_OrderItem__c – to handle individual product entries within each order
 - AgriEdge_Shipment__c – to facilitate and track the shipment process
- **Automate the calculation of total order values** based on the order items associated with each order.
- **Dynamically update the Order Status and Payment Status** in real-time, based on predefined business logic and transactional data.
- **Manage shipment creation and status updates** in alignment with the respective order's progression through its lifecycle.
- **Ensure data consistency and reduce manual effort** by leveraging Apex triggers and reusable helper classes for backend automation.
- **Deliver a scalable, user-friendly interface** to enable seamless management of orders, products, and shipments, supporting agricultural supply chain operations effectively.

Technology Description :

The **AgriEdge Order Management System** is developed on the **Salesforce Platform**, utilizing its cloud-native architecture, powerful declarative tools, and flexible programmatic capabilities. This combination enables the delivery of a **scalable, automated solution** tailored for efficient order tracking and shipment management within the **agricultural domain**.

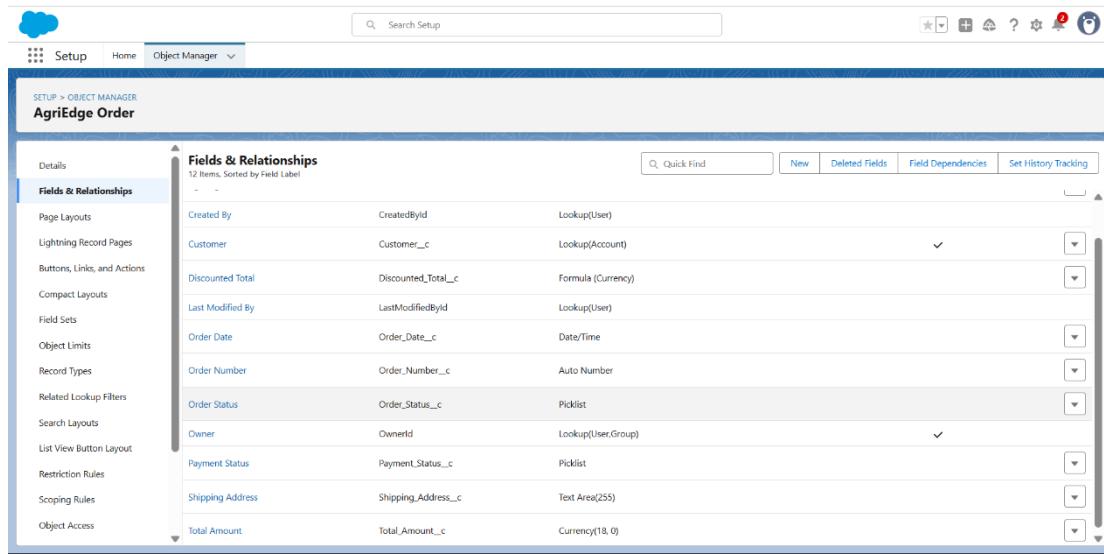
Technologies Used:

Technology	Description
Salesforce CRM	A cloud-based Customer Relationship Management platform used as the foundation for the entire application.
Custom Objects	Custom objects such as AgriEdge_Order__c, AgriEdge_OrderItem__c, and AgriEdge_Shipment__c are created to model and store order-related data specific to the agricultural domain.
Apex Classes	Apex classes are implemented to handle core business logic, including updating order totals, managing payment statuses, and tracking shipment progress.
Apex Triggers	Triggers execute automatically on data changes (insert/update), enabling real-time processing of related records and maintaining data consistency.
SOQL (Salesforce Object Query Language)	Used within Apex to retrieve and manipulate Salesforce records based on specific conditions.
Lightning UI	The user interface provided by Salesforce, allowing users to interact with data through standard or custom record layouts.

Workflow Automation Tools:

- **Invocable Apex** – Allows Apex methods to be called from automation tools like Flows, enabling complex logic execution within declarative workflows.

- **Validation Rules** – Enforce business rules and ensure data accuracy by preventing incorrect or incomplete data entry.
- **Lookup Relationships** – Establish associations between objects such as orders, order items, and shipments, supporting data linkage and referential integrity.



The screenshot shows the Salesforce Object Manager interface for the 'AgriEdge Order' object. The left sidebar lists various setup options like Details, Fields & Relationships, Page Layouts, and Lightning Record Pages. The main area is titled 'Fields & Relationships' and displays 12 items sorted by Field Label. Each item shows the field name, its type, and its description. For example, 'Created By' is a Lookup(User) field, and 'Total Amount' is a Currency(18, 0) field. A toolbar at the top right includes Quick Find, New, Deleted Fields, Field Dependencies, and Set History Tracking.

Field Label	Type	Description
Created By	Lookup(User)	
Customer	Lookup(Account)	
Discounted Total	Formula (Currency)	
Last Modified By	Lookup(User)	
Order Date	Date/Time	
Order Number	Auto Number	
Order Status	Picklist	
Owner	Lookup(User,Group)	
Payment Status	Picklist	
Shipping Address	Text Area(255)	
Total Amount	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	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)		

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

(AgriEdge OrderItem Fields)

SETUP > OBJECT MANAGER
AgriEdge Shipment

Fields & Relationships
9 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
AgriEdge Order	AgriEdge_Order__c	Lookup(AgriEdge Order)		✓
AgriEdge Shipment Name	Name	Text(80)		✓
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(35)		

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

(AgriEdge Shipment Fields)

The screenshot shows the Salesforce Setup interface with the path "SETUP > OBJECT MANAGER". The main title is "AgriEdge Inventory". On the left, there's a sidebar with various setup categories like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, etc. The "Fields & Relationships" section is selected. The main content area displays a table titled "Fields & Relationships" with 9 items. The columns are: FIELD LABEL, FIELD NAME, DATA TYPE, CONTROLLING FIELD, and INDEXED. The data includes fields such as AgriEdge Inventory Name, Created By, Last Modified By, Owner, Product, Reorder Level, Stock Quantity, Stock Status, and Warehouse Location.

(AgriEdge Inventory Fields)

The screenshot shows the Salesforce Object Manager interface with the title "AgriEdge OrderItem". The record name is "spice". The "Details" tab is selected. The left pane shows related records: AgriEdge OrderItem Name (spice), Order (ORD-0001), Product (tomato), Quantity (1,000), Unit Price (\$2), Total Price (\$2,000.00), and AgriEdge Order. The right pane shows the "Activity" section, which is currently empty. It includes a toolbar for creating new contacts, editing, and creating new opportunities, and a "Filters" section with options for all time, all activities, and all types.

(AgriEdge OrderItem)

AgriEdge Order Name: ORD-0001

Owner: Dinesh Kumar Reddy Avula

Order Number: ORD-0001

Customer: Dinesh

Order Status: Delivered

Order Date: 7/27/2025, 9:00 AM

Total Amount: \$100

Payment Status: Paid

Shipping Address:

Discounted Total: \$90.00

Created By: Dinesh Kumar Reddy Avula, 7/27/2025, 8:26 PM

Last Modified By: Dinesh Kumar Reddy Avula, 7/27/2025, 8:28 PM

(AgriEdge Order)

AgriEdge Shipment Name: AES-0001

Owner: Dinesh Kumar Reddy Avula

Tracking Number:

Carrier: FedEx

Status: Pending

AgriEdge Order: ORD-0001

Order:

Created By: Dinesh Kumar Reddy Avula, 7/27/2025, 9:30 PM

Last Modified By: Dinesh Kumar Reddy Avula, 7/27/2025, 9:30 PM

(AgriEdge Shipments)

The screenshot shows the Salesforce Object Manager interface. At the top, there is a navigation bar with icons for Setup, Home, and Object Manager. A search bar labeled "Search Setup" is located at the top right. Below the navigation bar, the title "Object Manager" is displayed, along with a message indicating "4 Items, Sorted by Label". A search bar contains the text "agri". There are buttons for "Schema Builder" and "Create". The main area is a table listing four custom objects:

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

(Object Manager)

Project Explanation with Real-World Example

Overview

This project simulates a **real-world agricultural supply chain management system** built on Salesforce. It automates order processing, shipment tracking, and order item management for a fictional agri-business called **AgriEdge** that delivers agricultural products like fertilizers, seeds, and equipment to farmers and retailers.

Real-World Example Scenario

Let's say **AgriEdge Pvt. Ltd.**, an agriculture products supplier, receives an order from a farmer named **Ramesh** for:

- 10 bags of fertilizer
- 5 litres of organic pesticide

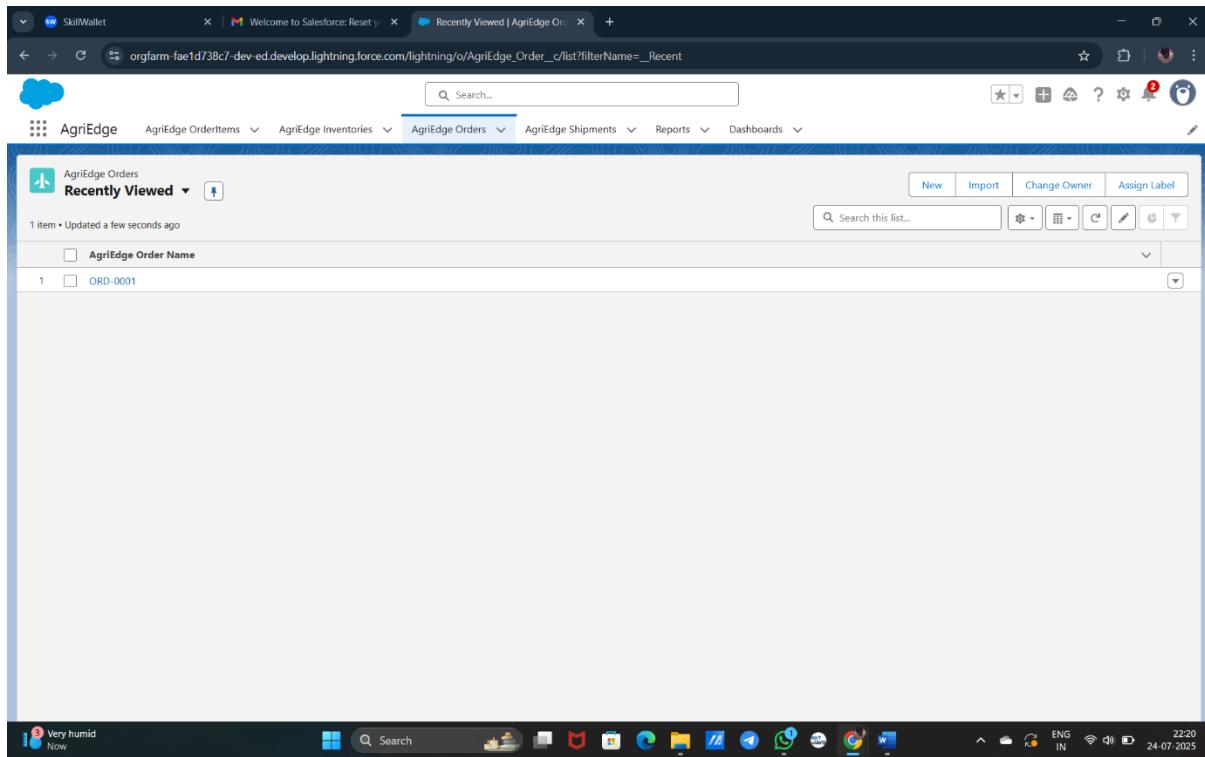
The company uses Salesforce to manage this order end-to-end. Here's how your system helps:



Step 1: Order Creation (AgriEdge_Order__c)

A sales executive creates a new **AgriEdge Order** record:

- Customer: Ramesh
- Status: Pending
- Payment Status: Not Paid



(AgriEdge Order)

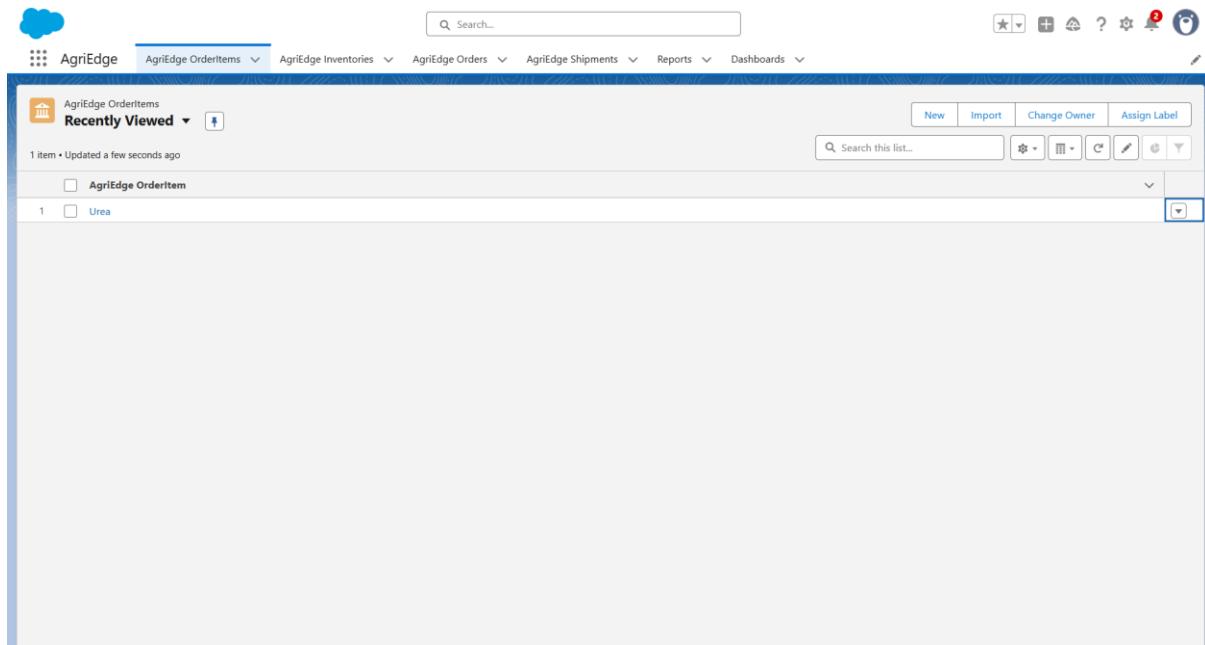
Step 2: Adding Items (AgriEdge_OrderItem__c)

They add individual items to the order:

- Item 1: 10x Fertilizer @ ₹300 each
- Item 2: 5L Organic Pesticide @ ₹500/L

As soon as items are added:

- The system calculates the **total amount** using Apex (OrderTotalUpdater).
- If needed, order status is updated using trigger logic.



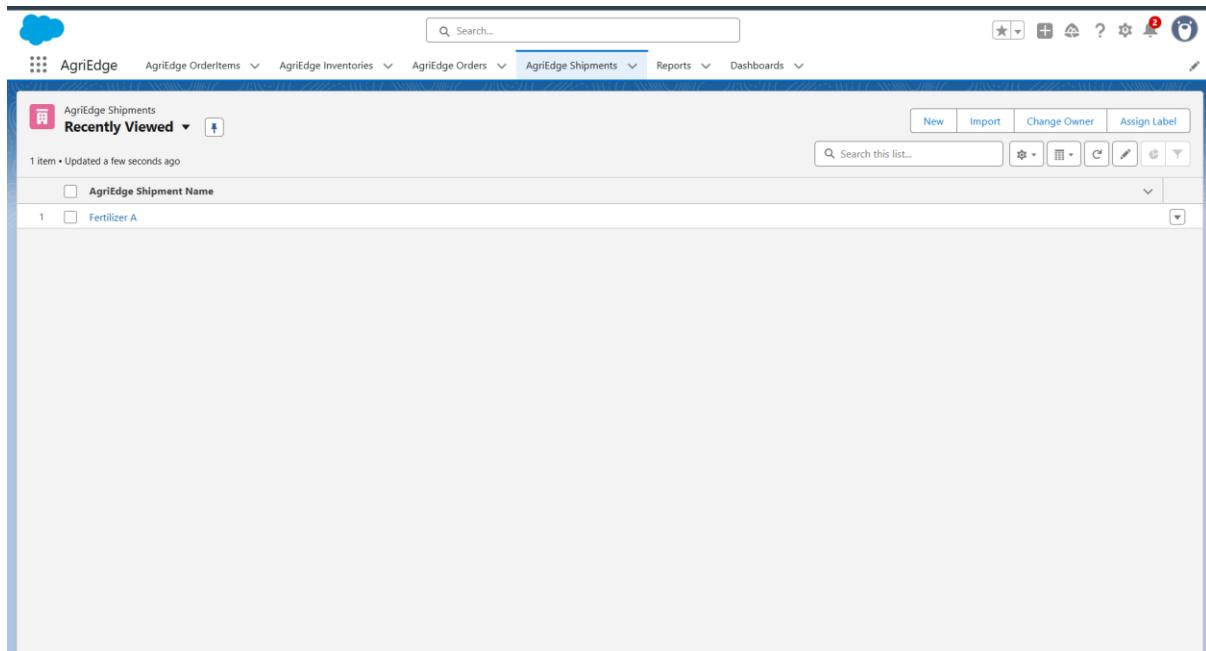
(AgriEdge OrderItem)

Step 3: Shipment Creation (AgriEdge_Shipment__c)

Once payment is received:

- A shipment record is created with:
 - Tracking Number (auto-populated or manually added)
 - Carrier (e.g., FedEx)
 - Shipment Status: “In Transit” or “Delivered”

If no tracking number is added, validation logic prevents saving incomplete data.



(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).

```

1  @isTest
2  public class AgriEdgeOrderTests {
3      @isTest
4      public static void testOrderTaskCreator() {
5          // Step 1
6          // Create
7          Account t = new Account();
8          insert t;
9
10         // Step 2
11         // Create
12         OrderItem i = new OrderItem();
13         insert i;
14
15         // Step 3
16         // Create
17         Order o = new Order();
18         insert o;
19
20         // Step 4
21         // Create
22         Shipment s = new Shipment();
23         insert s;
24
25         // Step 5
26         // Create
27         OrderTaskCreator ot = new OrderTaskCreator();
28         insert ot;
29
30         // Step 6
31         // Create
32         OrderStatusUpdater osu = new OrderStatusUpdater();
33         insert osu;
34
35         // Step 7
36         // Create
37         OrderTotalUpdater otu = new OrderTotalUpdater();
38         insert otu;
39
40         // Step 8
41         // Create
42         OrderEmailSender oes = new OrderEmailSender();
43         insert oes;
44
45         // Step 9
46         // Create
47         AgriEdgeOrderShipmentHelper aesh = new AgriEdgeOrderShipmentHelper();
48         insert aesh;
49
50         // Step 10
51         // Create
52         AgriEdgeOrderTriggerHelper aeth = new AgriEdgeOrderTriggerHelper();
53         insert aeth;
54
55         // Step 11
56         // Create
57         OrderPaymentStatusTriggers osts = new OrderPaymentStatusTriggers();
58         insert osts;
59
60         // Step 12
61         // Create
62         OrderHelper oh = new OrderHelper();
63         insert oh;
64
65         // Step 13
66         // Create
67         OrderTaskCreator ot2 = new OrderTaskCreator();
68         insert ot2;
69
70         // Step 14
71         // Create
72         OrderStatusUpdater osu2 = new OrderStatusUpdater();
73         insert osu2;
74
75         // Step 15
76         // Create
77         OrderTotalUpdater otu2 = new OrderTotalUpdater();
78         insert otu2;
79
80         // Step 16
81         // Create
82         OrderEmailSender oes2 = new OrderEmailSender();
83         insert oes2;
84
85         // Step 17
86         // Create
87         AgriEdgeOrderShipmentHelper aesh2 = new AgriEdgeOrderShipmentHelper();
88         insert aesh2;
89
90         // Step 18
91         // Create
92         AgriEdgeOrderTriggerHelper aeth2 = new AgriEdgeOrderTriggerHelper();
93         insert aeth2;
94
95         // Step 19
96         // Create
97         OrderPaymentStatusTriggers osts2 = new OrderPaymentStatusTriggers();
98         insert osts2;
99
100        // Step 20
101        // Create
102        OrderHelper oh2 = new OrderHelper();
103        insert oh2;
104
105        // Step 21
106        // Create
107        OrderTaskCreator ot3 = new OrderTaskCreator();
108        insert ot3;
109
110        // Step 22
111        // Create
112        OrderStatusUpdater osu3 = new OrderStatusUpdater();
113        insert osu3;
114
115        // Step 23
116        // Create
117        OrderTotalUpdater otu3 = new OrderTotalUpdater();
118        insert otu3;
119
120        // Step 24
121        // Create
122        OrderEmailSender oes3 = new OrderEmailSender();
123        insert oes3;
124
125        // Step 25
126        // Create
127        AgriEdgeOrderShipmentHelper aesh3 = new AgriEdgeOrderShipmentHelper();
128        insert aesh3;
129
130        // Step 26
131        // Create
132        AgriEdgeOrderTriggerHelper aeth3 = new AgriEdgeOrderTriggerHelper();
133        insert aeth3;
134
135        // Step 27
136        // Create
137        OrderPaymentStatusTriggers osts3 = new OrderPaymentStatusTriggers();
138        insert osts3;
139
140        // Step 28
141        // Create
142        OrderHelper oh3 = new OrderHelper();
143        insert oh3;
144
145        // Step 29
146        // Create
147        OrderTaskCreator ot4 = new OrderTaskCreator();
148        insert ot4;
149
150        // Step 30
151        // Create
152        OrderStatusUpdater osu4 = new OrderStatusUpdater();
153        insert osu4;
154
155        // Step 31
156        // Create
157        OrderTotalUpdater otu4 = new OrderTotalUpdater();
158        insert otu4;
159
160        // Step 32
161        // Create
162        OrderEmailSender oes4 = new OrderEmailSender();
163        insert oes4;
164
165        // Step 33
166        // Create
167        AgriEdgeOrderShipmentHelper aesh4 = new AgriEdgeOrderShipmentHelper();
168        insert aesh4;
169
170        // Step 34
171        // Create
172        AgriEdgeOrderTriggerHelper aeth4 = new AgriEdgeOrderTriggerHelper();
173        insert aeth4;
174
175        // Step 35
176        // Create
177        OrderPaymentStatusTriggers osts4 = new OrderPaymentStatusTriggers();
178        insert osts4;
179
180        // Step 36
181        // Create
182        OrderHelper oh4 = new OrderHelper();
183        insert oh4;
184
185        // Step 37
186        // Create
187        OrderTaskCreator ot5 = new OrderTaskCreator();
188        insert ot5;
189
190        // Step 38
191        // Create
192        OrderStatusUpdater osu5 = new OrderStatusUpdater();
193        insert osu5;
194
195        // Step 39
196        // Create
197        OrderTotalUpdater otu5 = new OrderTotalUpdater();
198        insert otu5;
199
200        // Step 40
201        // Create
202        OrderEmailSender oes5 = new OrderEmailSender();
203        insert oes5;
204
205        // Step 41
206        // Create
207        AgriEdgeOrderShipmentHelper aesh5 = new AgriEdgeOrderShipmentHelper();
208        insert aesh5;
209
210        // Step 42
211        // Create
212        AgriEdgeOrderTriggerHelper aeth5 = new AgriEdgeOrderTriggerHelper();
213        insert aeth5;
214
215        // Step 43
216        // Create
217        OrderPaymentStatusTriggers osts5 = new OrderPaymentStatusTriggers();
218        insert osts5;
219
220        // Step 44
221        // Create
222        OrderHelper oh5 = new OrderHelper();
223        insert oh5;
224
225        // Step 45
226        // Create
227        OrderTaskCreator ot6 = new OrderTaskCreator();
228        insert ot6;
229
230        // Step 46
231        // Create
232        OrderStatusUpdater osu6 = new OrderStatusUpdater();
233        insert osu6;
234
235        // Step 47
236        // Create
237        OrderTotalUpdater otu6 = new OrderTotalUpdater();
238        insert otu6;
239
240        // Step 48
241        // Create
242        OrderEmailSender oes6 = new OrderEmailSender();
243        insert oes6;
244
245        // Step 49
246        // Create
247        AgriEdgeOrderShipmentHelper aesh6 = new AgriEdgeOrderShipmentHelper();
248        insert aesh6;
249
250        // Step 50
251        // Create
252        AgriEdgeOrderTriggerHelper aeth6 = new AgriEdgeOrderTriggerHelper();
253        insert aeth6;
254
255        // Step 51
256        // Create
257        OrderPaymentStatusTriggers osts6 = new OrderPaymentStatusTriggers();
258        insert osts6;
259
260        // Step 52
261        // Create
262        OrderHelper oh6 = new OrderHelper();
263        insert oh6;
264
265        // Step 53
266        // Create
267        OrderTaskCreator ot7 = new OrderTaskCreator();
268        insert ot7;
269
270        // Step 54
271        // Create
272        OrderStatusUpdater osu7 = new OrderStatusUpdater();
273        insert osu7;
274
275        // Step 55
276        // Create
277        OrderTotalUpdater otu7 = new OrderTotalUpdater();
278        insert otu7;
279
280        // Step 56
281        // Create
282        OrderEmailSender oes7 = new OrderEmailSender();
283        insert oes7;
284
285        // Step 57
286        // Create
287        AgriEdgeOrderShipmentHelper aesh7 = new AgriEdgeOrderShipmentHelper();
288        insert aesh7;
289
290        // Step 58
291        // Create
292        AgriEdgeOrderTriggerHelper aeth7 = new AgriEdgeOrderTriggerHelper();
293        insert aeth7;
294
295        // Step 59
296        // Create
297        OrderPaymentStatusTriggers osts7 = new OrderPaymentStatusTriggers();
298        insert osts7;
299
300        // Step 60
301        // Create
302        OrderHelper oh7 = new OrderHelper();
303        insert oh7;
304
305        // Step 61
306        // Create
307        OrderTaskCreator ot8 = new OrderTaskCreator();
308        insert ot8;
309
310        // Step 62
311        // Create
312        OrderStatusUpdater osu8 = new OrderStatusUpdater();
313        insert osu8;
314
315        // Step 63
316        // Create
317        OrderTotalUpdater otu8 = new OrderTotalUpdater();
318        insert otu8;
319
320        // Step 64
321        // Create
322        OrderEmailSender oes8 = new OrderEmailSender();
323        insert oes8;
324
325        // Step 65
326        // Create
327        AgriEdgeOrderShipmentHelper aesh8 = new AgriEdgeOrderShipmentHelper();
328        insert aesh8;
329
330        // Step 66
331        // Create
332        AgriEdgeOrderTriggerHelper aeth8 = new AgriEdgeOrderTriggerHelper();
333        insert aeth8;
334
335        // Step 67
336        // Create
337        OrderPaymentStatusTriggers osts8 = new OrderPaymentStatusTriggers();
338        insert osts8;
339
340        // Step 68
341        // Create
342        OrderHelper oh8 = new OrderHelper();
343        insert oh8;
344
345        // Step 69
346        // Create
347        OrderTaskCreator ot9 = new OrderTaskCreator();
348        insert ot9;
349
350        // Step 70
351        // Create
352        OrderStatusUpdater osu9 = new OrderStatusUpdater();
353        insert osu9;
354
355        // Step 71
356        // Create
357        OrderTotalUpdater otu9 = new OrderTotalUpdater();
358        insert otu9;
359
360        // Step 72
361        // Create
362        OrderEmailSender oes9 = new OrderEmailSender();
363        insert oes9;
364
365        // Step 73
366        // Create
367        AgriEdgeOrderShipmentHelper aesh9 = new AgriEdgeOrderShipmentHelper();
368        insert aesh9;
369
370        // Step 74
371        // Create
372        AgriEdgeOrderTriggerHelper aeth9 = new AgriEdgeOrderTriggerHelper();
373        insert aeth9;
374
375        // Step 75
376        // Create
377        OrderPaymentStatusTriggers osts9 = new OrderPaymentStatusTriggers();
378        insert osts9;
379
380        // Step 76
381        // Create
382        OrderHelper oh9 = new OrderHelper();
383        insert oh9;
384
385        // Step 77
386        // Create
387        OrderTaskCreator ot10 = new OrderTaskCreator();
388        insert ot10;
389
390        // Step 78
391        // Create
392        OrderStatusUpdater osu10 = new OrderStatusUpdater();
393        insert osu10;
394
395        // Step 79
396        // Create
397        OrderTotalUpdater otu10 = new OrderTotalUpdater();
398        insert otu10;
399
400        // Step 80
401        // Create
402        OrderEmailSender oes10 = new OrderEmailSender();
403        insert oes10;
404
405        // Step 81
406        // Create
407        AgriEdgeOrderShipmentHelper aesh10 = new AgriEdgeOrderShipmentHelper();
408        insert aesh10;
409
410        // Step 82
411        // Create
412        AgriEdgeOrderTriggerHelper aeth10 = new AgriEdgeOrderTriggerHelper();
413        insert aeth10;
414
415        // Step 83
416        // Create
417        OrderPaymentStatusTriggers osts10 = new OrderPaymentStatusTriggers();
418        insert osts10;
419
420        // Step 84
421        // Create
422        OrderHelper oh10 = new OrderHelper();
423        insert oh10;
424
425        // Step 85
426        // Create
427        OrderTaskCreator ot11 = new OrderTaskCreator();
428        insert ot11;
429
430        // Step 86
431        // Create
432        OrderStatusUpdater osu11 = new OrderStatusUpdater();
433        insert osu11;
434
435        // Step 87
436        // Create
437        OrderTotalUpdater otu11 = new OrderTotalUpdater();
438        insert otu11;
439
440        // Step 88
441        // Create
442        OrderEmailSender oes11 = new OrderEmailSender();
443        insert oes11;
444
445        // Step 89
446        // Create
447        AgriEdgeOrderShipmentHelper aesh11 = new AgriEdgeOrderShipmentHelper();
448        insert aesh11;
449
450        // Step 90
451        // Create
452        AgriEdgeOrderTriggerHelper aeth11 = new AgriEdgeOrderTriggerHelper();
453        insert aeth11;
454
455        // Step 91
456        // Create
457        OrderPaymentStatusTriggers osts11 = new OrderPaymentStatusTriggers();
458        insert osts11;
459
460        // Step 92
461        // Create
462        OrderHelper oh11 = new OrderHelper();
463        insert oh11;
464
465        // Step 93
466        // Create
467        OrderTaskCreator ot12 = new OrderTaskCreator();
468        insert ot12;
469
470        // Step 94
471        // Create
472        OrderStatusUpdater osu12 = new OrderStatusUpdater();
473        insert osu12;
474
475        // Step 95
476        // Create
477        OrderTotalUpdater otu12 = new OrderTotalUpdater();
478        insert otu12;
479
480        // Step 96
481        // Create
482        OrderEmailSender oes12 = new OrderEmailSender();
483        insert oes12;
484
485        // Step 97
486        // Create
487        AgriEdgeOrderShipmentHelper aesh12 = new AgriEdgeOrderShipmentHelper();
488        insert aesh12;
489
490        // Step 98
491        // Create
492        AgriEdgeOrderTriggerHelper aeth12 = new AgriEdgeOrderTriggerHelper();
493        insert aeth12;
494
495        // Step 99
496        // Create
497        OrderPaymentStatusTriggers osts12 = new OrderPaymentStatusTriggers();
498        insert osts12;
499
500        // Step 100
501        // Create
502        OrderHelper oh12 = new OrderHelper();
503        insert oh12;
504
505        // Step 101
506        // Create
507        OrderTaskCreator ot13 = new OrderTaskCreator();
508        insert ot13;
509
510        // Step 102
511        // Create
512        OrderStatusUpdater osu13 = new OrderStatusUpdater();
513        insert osu13;
514
515        // Step 103
516        // Create
517        OrderTotalUpdater otu13 = new OrderTotalUpdater();
518        insert otu13;
519
520        // Step 104
521        // Create
522        OrderEmailSender oes13 = new OrderEmailSender();
523        insert oes13;
524
525        // Step 105
526        // Create
527        AgriEdgeOrderShipmentHelper aesh13 = new AgriEdgeOrderShipmentHelper();
528        insert aesh13;
529
530        // Step 106
531        // Create
532        AgriEdgeOrderTriggerHelper aeth13 = new AgriEdgeOrderTriggerHelper();
533        insert aeth13;
534
535        // Step 107
536        // Create
537        OrderPaymentStatusTriggers osts13 = new OrderPaymentStatusTriggers();
538        insert osts13;
539
540        // Step 108
541        // Create
542        OrderHelper oh13 = new OrderHelper();
543        insert oh13;
544
545        // Step 109
546        // Create
547        OrderTaskCreator ot14 = new OrderTaskCreator();
548        insert ot14;
549
550        // Step 110
551        // Create
552        OrderStatusUpdater osu14 = new OrderStatusUpdater();
553        insert osu14;
554
555        // Step 111
556        // Create
557        OrderTotalUpdater otu14 = new OrderTotalUpdater();
558        insert otu14;
559
560        // Step 112
561        // Create
562        OrderEmailSender oes14 = new OrderEmailSender();
563        insert oes14;
564
565        // Step 113
566        // Create
567        AgriEdgeOrderShipmentHelper aesh14 = new AgriEdgeOrderShipmentHelper();
568        insert aesh14;
569
570        // Step 114
571        // Create
572        AgriEdgeOrderTriggerHelper aeth14 = new AgriEdgeOrderTriggerHelper();
573        insert aeth14;
574
575        // Step 115
576        // Create
577        OrderPaymentStatusTriggers osts14 = new OrderPaymentStatusTriggers();
578        insert osts14;
579
580        // Step 116
581        // Create
582        OrderHelper oh14 = new OrderHelper();
583        insert oh14;
584
585        // Step 117
586        // Create
587        OrderTaskCreator ot15 = new OrderTaskCreator();
588        insert ot15;
589
590        // Step 118
591        // Create
592        OrderStatusUpdater osu15 = new OrderStatusUpdater();
593        insert osu15;
594
595        // Step 119
596        // Create
597        OrderTotalUpdater otu15 = new OrderTotalUpdater();
598        insert otu15;
599
600        // Step 120
601        // Create
602        OrderEmailSender oes15 = new OrderEmailSender();
603        insert oes15;
604
605        // Step 121
606        // Create
607        AgriEdgeOrderShipmentHelper aesh15 = new AgriEdgeOrderShipmentHelper();
608        insert aesh15;
609
610        // Step 122
611        // Create
612        AgriEdgeOrderTriggerHelper aeth15 = new AgriEdgeOrderTriggerHelper();
613        insert aeth15;
614
615        // Step 123
616        // Create
617        OrderPaymentStatusTriggers osts15 = new OrderPaymentStatusTriggers();
618        insert osts15;
619
620        // Step 124
621        // Create
622        OrderHelper oh15 = new OrderHelper();
623        insert oh15;
624
625        // Step 125
626        // Create
627        OrderTaskCreator ot16 = new OrderTaskCreator();
628        insert ot16;
629
630        // Step 126
631        // Create
632        OrderStatusUpdater osu16 = new OrderStatusUpdater();
633        insert osu16;
634
635        // Step 127
636        // Create
637        OrderTotalUpdater otu16 = new OrderTotalUpdater();
638        insert otu16;
639
640        // Step 128
641        // Create
642        OrderEmailSender oes16 = new OrderEmailSender();
643        insert oes16;
644
645        // Step 129
646        // Create
647        AgriEdgeOrderShipmentHelper aesh16 = new AgriEdgeOrderShipmentHelper();
648        insert aesh16;
649
650        // Step 130
651        // Create
652        AgriEdgeOrderTriggerHelper aeth16 = new AgriEdgeOrderTriggerHelper();
653        insert aeth16;
654
655        // Step 131
656        // Create
657        OrderPaymentStatusTriggers osts16 = new OrderPaymentStatusTriggers();
658        insert osts16;
659
660        // Step 132
661        // Create
662        OrderHelper oh16 = new OrderHelper();
663        insert oh16;
664
665        // Step 133
666        // Create
667        OrderTaskCreator ot17 = new OrderTaskCreator();
668        insert ot17;
669
670        // Step 134
671        // Create
672        OrderStatusUpdater osu17 = new OrderStatusUpdater();
673        insert osu17;
674
675        // Step 135
676        // Create
677        OrderTotalUpdater otu17 = new OrderTotalUpdater();
678        insert otu17;
679
680        // Step 136
681        // Create
682        OrderEmailSender oes17 = new OrderEmailSender();
683        insert oes17;
684
685        // Step 137
686        // Create
687        AgriEdgeOrderShipmentHelper aesh17 = new AgriEdgeOrderShipmentHelper();
688        insert aesh17;
689
690        // Step 138
691        // Create
692        AgriEdgeOrderTriggerHelper aeth17 = new AgriEdgeOrderTriggerHelper();
693        insert aeth17;
694
695        // Step 139
696        // Create
697        OrderPaymentStatusTriggers osts17 = new OrderPaymentStatusTriggers();
698        insert osts17;
699
700        // Step 140
701        // Create
702        OrderHelper oh17 = new OrderHelper();
703        insert oh17;
704
705        // Step 141
706        // Create
707        OrderTaskCreator ot18 = new OrderTaskCreator();
708        insert ot18;
709
710        // Step 142
711        // Create
712        OrderStatusUpdater osu18 = new OrderStatusUpdater();
713        insert osu18;
714
715        // Step 143
716        // Create
717        OrderTotalUpdater otu18 = new OrderTotalUpdater();
718        insert otu18;
719
720        // Step 144
721        // Create
722        OrderEmailSender oes18 = new OrderEmailSender();
723        insert oes18;
724
725        // Step 145
726        // Create
727        AgriEdgeOrderShipmentHelper aesh18 = new AgriEdgeOrderShipmentHelper();
728        insert aesh18;
729
730        // Step 146
731        // Create
732        AgriEdgeOrderTriggerHelper aeth18 = new AgriEdgeOrderTriggerHelper();
733        insert aeth18;
734
735        // Step 147
736        // Create
737        OrderPaymentStatusTriggers osts18 = new OrderPaymentStatusTriggers();
738        insert osts18;
739
740        // Step 148
741        // Create
742        OrderHelper oh18 = new OrderHelper();
743        insert oh18;
744
745        // Step 149
746        // Create
747        OrderTaskCreator ot19 = new OrderTaskCreator();
748        insert ot19;
749
750        // Step 150
751        // Create
752        OrderStatusUpdater osu19 = new OrderStatusUpdater();
753        insert osu19;
754
755        // Step 151
756        // Create
757        OrderTotalUpdater otu19 = new OrderTotalUpdater();
758        insert otu19;
759
760        // Step 152
761        // Create
762        OrderEmailSender oes19 = new OrderEmailSender();
763        insert oes19;
764
765        // Step 153
766        // Create
767        AgriEdgeOrderShipmentHelper aesh19 = new AgriEdgeOrderShipmentHelper();
768        insert aesh19;
769
770        // Step 154
771        // Create
772        AgriEdgeOrderTriggerHelper aeth19 = new AgriEdgeOrderTriggerHelper();
773        insert aeth19;
774
775        // Step 155
776        // Create
777        OrderPaymentStatusTriggers osts19 = new OrderPaymentStatusTriggers();
778        insert osts19;
779
780        // Step 156
781        // Create
782        OrderHelper oh19 = new OrderHelper();
783        insert oh19;
784
785        // Step 157
786        // Create
787        OrderTaskCreator ot20 = new OrderTaskCreator();
788        insert ot20;
789
790        // Step 158
791        // Create
792        OrderStatusUpdater osu20 = new OrderStatusUpdater();
793        insert osu20;
794
795        // Step 159
796        // Create
797        OrderTotalUpdater otu20 = new OrderTotalUpdater();
798        insert otu20;
799
800        // Step 160
801        // Create
802        OrderEmailSender oes20 = new OrderEmailSender();
803        insert oes20;
804
805        // Step 161
806        // Create
807        AgriEdgeOrderShipmentHelper aesh20 = new AgriEdgeOrderShipmentHelper();
808        insert aesh20;
809
810        // Step 162
811        // Create
812        AgriEdgeOrderTriggerHelper aeth20 = new AgriEdgeOrderTriggerHelper();
813        insert aeth20;
814
815        // Step 163
816        // Create
817        OrderPaymentStatusTriggers osts20 = new OrderPaymentStatusTriggers();
818        insert osts20;
819
820        // Step 164
821        // Create
822        OrderHelper oh20 = new OrderHelper();
823        insert oh20;
824
825        // Step 165
826        // Create
827        OrderTaskCreator ot21 = new OrderTaskCreator();
828        insert ot21;
829
830        // Step 166
831        // Create
832        OrderStatusUpdater osu21 = new OrderStatusUpdater();
833        insert osu21;
834
835        // Step 167
836        // Create
837        OrderTotalUpdater otu21 = new OrderTotalUpdater();
838        insert otu21;
839
840        // Step 168
841        // Create
842        OrderEmailSender oes21 = new OrderEmailSender();
843        insert oes21;
844
845        // Step 169
846        // Create
847        AgriEdgeOrderShipmentHelper aesh21 = new AgriEdgeOrderShipmentHelper();
848        insert aesh21;
849
850        // Step 170
851        // Create
852        AgriEdgeOrderTriggerHelper aeth21 = new AgriEdgeOrderTriggerHelper();
853        insert aeth21;
854
855        // Step 171
856        // Create
857        OrderPaymentStatusTriggers osts21 = new OrderPaymentStatusTriggers();
858        insert osts21;
859
860        // Step 172
861        // Create
862        OrderHelper oh21 = new OrderHelper();
863        insert oh21;
864
865        // Step 173
866        // Create
867        OrderTaskCreator ot22 = new OrderTaskCreator();
868        insert ot22;
869
870        // Step 174
871        // Create
872        OrderStatusUpdater osu22 = new OrderStatusUpdater();
873        insert osu22;
874
875        // Step 176
876        // Create
877        OrderTotalUpdater otu22 = new OrderTotalUpdater();
878        insert otu22;
879
880        // Step 177
881        // Create
882        OrderEmailSender oes22 = new OrderEmailSender();
883        insert oes22;
884
885        // Step 178
886        // Create
887        AgriEdgeOrderShipmentHelper aesh22 = new AgriEdgeOrderShipmentHelper();
888        insert aesh22;
889
890        // Step 179
891        // Create
892        AgriEdgeOrderTriggerHelper aeth22 = new AgriEdgeOrderTriggerHelper();
893        insert aeth22;
894
895        // Step 180
896        // Create
897        OrderPaymentStatusTriggers osts22 = new OrderPaymentStatusTriggers();
898        insert osts22;
899
900        // Step 181
901        // Create
902        OrderHelper oh22 = new OrderHelper();
903        insert oh22;
904
905        // Step 182
906        // Create
907        OrderTaskCreator ot23 = new OrderTaskCreator();
908        insert ot23;
909
910        // Step 183
911        // Create
912        OrderStatusUpdater osu23 = new OrderStatusUpdater();
913        insert osu23;
914
915        // Step 184
916        // Create
917        OrderTotalUpdater otu23 = new OrderTotalUpdater();
918        insert otu23;
919
920        // Step 185
921        // Create
922        OrderEmailSender oes23 = new OrderEmailSender();
923        insert oes23;
924
925        // Step 186
926        // Create
927        AgriEdgeOrderShipmentHelper aesh23 = new AgriEdgeOrderShipmentHelper();
928        insert aesh23;
929
930        // Step 187
931        // Create
932        AgriEdgeOrderTriggerHelper aeth23 = new AgriEdgeOrderTriggerHelper();
933        insert aeth23;
934
935        // Step 188
936        // Create
937        OrderPaymentStatusTriggers osts23 = new OrderPaymentStatusTriggers();
938        insert osts23;
939
940        // Step 189
941        // Create
942        OrderHelper oh23 = new OrderHelper();
943        insert oh23;
944
945        // Step 190
946        // Create
947        OrderTaskCreator ot24 = new OrderTaskCreator();
948        insert ot24;
949
950        // Step 191
951        // Create
952        OrderStatusUpdater osu24 = new OrderStatusUpdater();
953        insert osu24;
954
955        // Step 192
956        // Create
957        OrderTotalUpdater otu24 = new OrderTotalUpdater();
958        insert otu24;
959
960        // Step 193
961        // Create
962        OrderEmailSender oes24 = new OrderEmailSender();
963        insert oes24;
964
965        // Step 194
966        // Create
967        AgriEdgeOrderShipmentHelper aesh24 = new AgriEdgeOrderShipmentHelper();
968        insert aesh24;
969
970        // Step 195
971        // Create
972        AgriEdgeOrderTriggerHelper aeth24 = new AgriEdgeOrderTriggerHelper();
973        insert aeth24;
974
975        // Step 196
976        // Create
977        OrderPaymentStatusTriggers osts24 = new OrderPaymentStatusTriggers();
978        insert osts24;
979
980        // Step 197
981        // Create
982        OrderHelper oh24 = new OrderHelper();
983        insert oh24;
984
985        // Step 198
986        // Create
987        OrderTaskCreator ot25 = new OrderTaskCreator();
988        insert ot25;
989
990        // Step 199
991        // Create
992        OrderStatusUpdater osu25 = new OrderStatusUpdater();
993        insert osu25;
994
995        // Step 200
996        // Create
997        OrderTotalUpdater otu25 = new OrderTotalUpdater();
998        insert otu25;
999
1000        // Step 201
1001        // Create
1002        OrderEmailSender oes25 = new OrderEmailSender();
1003        insert oes25;
1004
1005        // Step 202
1006        // Create
1007        AgriEdgeOrderShipmentHelper aesh25 = new AgriEdgeOrderShipmentHelper();
1008        insert aesh25;
1009
1010        // Step 203
1011        // Create
1012        AgriEdgeOrderTriggerHelper aeth25 = new AgriEdgeOrderTriggerHelper();
1013        insert aeth25;
1014
1015        // Step 204
1016        // Create
1017        OrderPaymentStatusTriggers osts25 = new OrderPaymentStatusTriggers();
1018        insert osts25;
1019
1020        // Step 205
1021        // Create
1022        OrderHelper oh25 = new OrderHelper();
1023        insert oh25;
1024
1025        // Step 206
1026        // Create
1027        OrderTaskCreator ot26 = new OrderTaskCreator();
1028        insert ot26;
1029
1030        // Step 207
1031        // Create
1032        OrderStatusUpdater osu26 = new OrderStatusUpdater();
1033        insert osu26;
1034
1035        // Step 208
1036        // Create
1037        OrderTotalUpdater otu26 = new OrderTotalUpdater();
1038        insert otu26;
1039
1040        // Step 209
1041        // Create
1042        OrderEmailSender oes26 = new OrderEmailSender();
1043        insert oes26;
1044
1045        // Step 210
1046        // Create
1047        AgriEdgeOrderShipmentHelper aesh26 = new AgriEdgeOrderShipmentHelper();
1048        insert aesh26;
1049
1050        // Step 211
1051        // Create
1052        AgriEdgeOrderTriggerHelper aeth26 = new AgriEdgeOrderTriggerHelper();
1053        insert aeth26;
1054
1055        // Step 212
1056        // Create
1057        OrderPaymentStatusTriggers osts26 = new OrderPaymentStatusTriggers();
1058        insert osts26;
1059
1060        // Step 213
1061        // Create
1062        OrderHelper oh26 = new OrderHelper();
1063        insert oh26;
1064
1065        // Step 214
1066        // Create
1067        OrderTaskCreator ot27 = new OrderTaskCreator();
1068        insert ot27;
1069
1070        // Step 215
1071        // Create
1072        OrderStatusUpdater osu27 = new OrderStatusUpdater();
1073        insert osu27;
1074
1075        // Step 216
1076        // Create
1077        OrderTotalUpdater otu27 = new OrderTotalUpdater();
1078        insert otu27;
1079
1080        // Step 217
1081        // Create
1082        OrderEmailSender oes27 = new OrderEmailSender();
1083        insert oes27;
1084
1085        // Step 218
1086        // Create
1087        AgriEdgeOrderShipmentHelper aesh27 = new AgriEdgeOrderShipmentHelper();
1088        insert aesh27;
1089
1090        // Step 219
1091        // Create
1092        AgriEdgeOrderTriggerHelper aeth27 = new AgriEdgeOrderTriggerHelper();
1093        insert aeth27;
1094
1095        // Step 220
10
```

The screenshot shows the Salesforce Developer Console in Google Chrome. The URL is https://orgfarm-70b001cc15-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage. The tab bar includes files like after.apxc, OrderTotalUpdater.apxc, OrderItemTrigger.apxt, OrderEmailSender.apxc, OrderPaymentStatusTriggers.apxt, AgriEdgeOrderShipmentHelper.apxc, AgriEdgeOrderTriggerHelper.apxc, and AgriEdgeOrderTriggerHelper.apxc. The API Version is set to 64. A modal window titled "Open" is displayed, showing Entity Type (Classes, Triggers, Pages) and Related entities (OrderItemTrigger, OrderPaymentStatusTriggers, AgriEdgeOrderTrigger). Below the modal, the "Tests" tab is selected in the sidebar, showing a status of "Test Run". On the right, a "Code Coverage" table provides detailed coverage statistics:

Entity	Percent	Lines
AgriEdgeOrderTriggerHelper	87%	46/58
OrderPaymentStatusTriggers	79%	33/35
OrderStatusUpdater	94%	1/1
OrderTaskCreator	100%	34/35
OrderTotalUpdater	97%	7/7
	100%	5/7
	71%	5/9
	55%	17/19
	94%	16/17

(trigger code and class snippet in Salesforce Apex class editor.)

Result

Ramesh can now receive timely deliveries, track shipments, and AgriEdge's internal team can manage all orders, items, and logistics efficiently in one platform.

Conclusion

The **AgriEdge Order and Shipment Management System** effectively illustrates how Salesforce can be leveraged to streamline the agricultural product lifecycle—from order placement to shipment delivery—in a structured and automated manner. By utilizing custom objects such as AgriEdge_Order__c, AgriEdge_OrderItem__c, and AgriEdge_Shipment__c, and implementing automation through **Apex triggers, helper classes, and validation rules**, the system achieves the following:

- **Automates total order calculation** based on associated order items
- **Dynamically updates order and payment status** based on transaction activity
- **Validates shipment creation** with required data such as tracking numbers
- **Prevents data inconsistencies** through rule enforcement and field validations

This system provides **clear visibility** into the sales and logistics process, minimizing manual effort and enhancing operational efficiency—critical factors for any organization in the agricultural supply chain.

Future Scope

The current implementation provides a solid foundation for agri-business order management. Several enhancements can be introduced to extend its functionality and impact:

1. Real-Time Inventory Integration

- Connect with AgriEdge_Inventory__c to auto-update stock levels upon order placement
- Display **live product availability** to prevent over-selling

2. Customer Self-Service Portal

- Enable customers (e.g., farmers, retailers) to **place orders, track shipments, and view order history**
- Build using **Salesforce Experience Cloud**

3. Mobile-Optimized Interface

- Implement a mobile-friendly UI using the **Salesforce Mobile App** or custom **Lightning Web Components (LWC)** for access on the go

4. Advanced Reporting and Dashboards

- Create **dynamic dashboards** for monitoring metrics like total revenue, pending orders, and top-selling products
- Visualize **regional order patterns** with charts and filters

5. AI-Powered Recommendations

- Use **Salesforce Einstein** to suggest frequently purchased products or **predict delivery timelines** based on past data

6. Third-Party Carrier Integration

- Integrate APIs from logistics providers (e.g., **FedEx, DHL**) to auto-fetch and display live **tracking updates** within Salesforce

7. Enhanced Role-Based Security

- Refine **profiles, roles, and permission sets** for various user types: admin, sales rep, logistics staff, etc.
-