

Phase 5 Completion Report – Apex Programming (Developer)

1. Classes & Objects

● Create an Apex Class

Steps:

1. In Salesforce → Setup → Quick Find → **Apex Classes** → New.

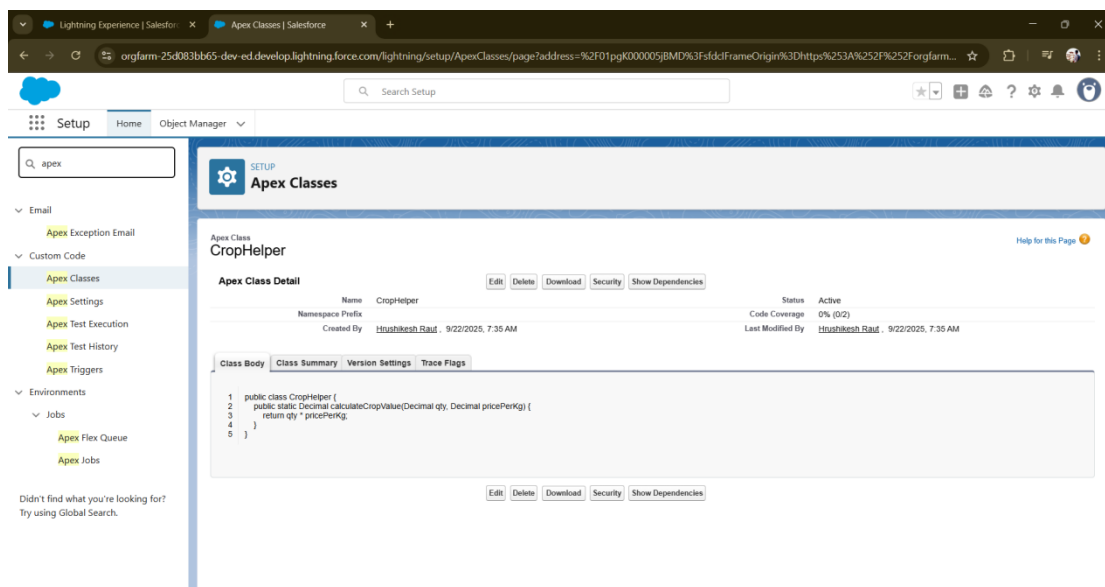
OR Developer Console → File → New → Apex Class.

2. Enter Class Name and click OK.

3. Write Apex code implementing the required logic.

4. Save the class.

Example: Utility class to calculate total crop value.



2. Apex Triggers

Steps to Create Trigger:

1. Developer Console → File → New → Apex Trigger.
2. Select Object
3. Write Trigger code .
4. Save the trigger

✧ **Example** :Let's create a Trigger i.e.

When a Deal is **Closed Won**, automatically update the available Crop quantity.

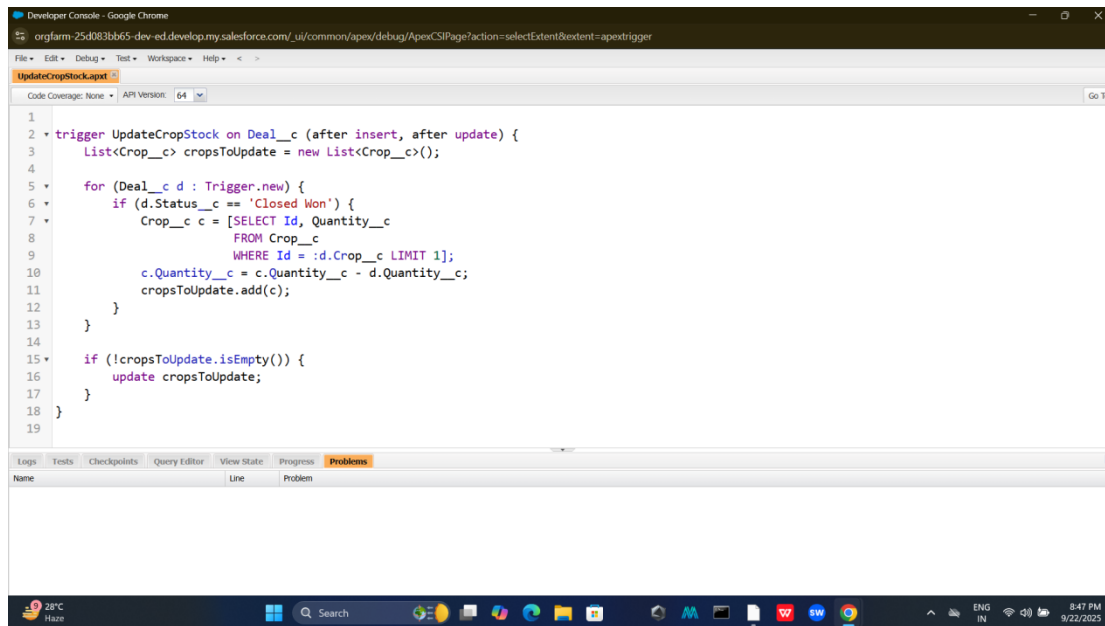
Steps:

Setup → Apex Triggers → New Trigger.

Select **Deal__c** object.

Add Trigger Code as mentioned in screenshot

Save & Test: Close a Deal → Crop stock reduces



3. SOQL (Salesforce Object Query Language)

---- Used to query data inside Apex.

Example Query:

```
List<Farm__c> farmers = [SELECT Id, Name, Address__c  
FROM Farmer__c  
WHERE Address_c = 'North'];
```

‘Queries Can Run in developer console’

- i. Enter Ctrl + E to open window for code
- ii. Enter Query followed by Debug Command
- iii. Click Execute

Developer Console - Google Chrome

orgfarm-25d083bb65-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSPage?action=selectExtent&extent=apextrigger

Log executeAnonymous @9/22/2025, 9:22:42 PM

Execution Log

Timestamp	Event	Details
21:22:42:011	USER_DEBUG	[0]DEBUG(Farmer__c([Id=a04gk0000015689QAA, Name=Rakesh, Address__c=North]))

Enter Apex Code

```
1
2
3 List<Farmer__c> farmers = [SELECT Id, Name, Address__c
4 FROM Farmer__c
5 WHERE Address__c = 'North'];
6 System.debug(farmers);
7
8
```

Logs Tests Checkpoints Query Editor View State Progress Problems

User	Application	Operation	Time	Success	Unread	Size
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:22:42 PM			2.62 KB
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:22:12 PM	Success	Unread	2.6 KB
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:21:41 PM	Success	Unread	2.79 KB
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:21:25 PM	Success	Unread	2.06 KB
Hrushikesh Raut	Browser	/aura	9/22/2025, 9:20:40 PM	Success	Unread	2.06 KB
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:07:27 PM	Success	Unread	2.4 KB

Filter Click here to filter the log list

4. Collections: List, Set, Map

- **List:** Store multiple Farmers

Developer Console - Google Chrome

orgfarm-25d083bb65-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSPage?action=selectExtent&extent=apextrigger

Log executeAnonymous @9/22/2025, 9:37:39 PM

Execution Log

Timestamp	Event	Details
21:42:54:014	USER_DEBUG	[2]DEBUG(Farmer__c([Id=a04gk0000014Yy0QAE, Name=Sample]), Farmer__c([Id=a04gk0000015689QAA, Name=Rakesh]), Farmer__c([Id=a04gk00000156y0QAA, Name=Suresh Raj]))

Enter Apex Code

```
1 List<Farmer__c> farmerList = [SELECT Id, Name FROM Farmer__c];
2
3 System.debug(farmerList);
4 // List
```

Logs Tests Checkpoints

User	Application	Operation	Time	Success	Unread	Size
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:37:39 PM	Success		4.44 KB
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:36:12 PM	Success		2.73 KB
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:34:26 PM	Success		2.21 KB
Hrushikesh Raut	Unknown	/services/data/v64.0/tooling/executeA...	9/22/2025, 9:32:42 PM	Success	Unread	2.75 KB

Filter Click here to filter the log list

- **Set:** Unique crop names.

The screenshot shows the Salesforce Developer Console with the following Apex code in the 'Enter Apex Code' window:

```
1 Set<String> cropNames = new Set<String>();
2 cropNames.add('Wheat');
3 cropNames.add('Rice');
4 System.debug(cropNames);
5 // Set
6
```

The Execution Log shows the following details:

Timestamp	Event	Details
21:36:12-002	USER_DEBUG	[4]DEBUG(Rice, Wheat)

The log also includes a table of file operations:

Read	Size
	2.49 KB
	2.21 KB
	2.75 KB
	2.75 KB
	2.67 KB
	2.65 KB

- **Map:** Match Farmer IDs with Names.

The screenshot shows the Salesforce Developer Console with the following Apex code in the 'Enter Apex Code' window:

```
1 List<Farmer__c> farmerList = [SELECT Id, Name FROM Farmer__c];
2 Map<Id, String> farmerMap = new Map<Id, String>();
3 for (Farmer__c f : farmerList) {
4     farmerMap.put(f.Id, f.Name);
5 }
6 System.debug(farmerMap);
7 // Map
```

The Execution Log shows the following details:

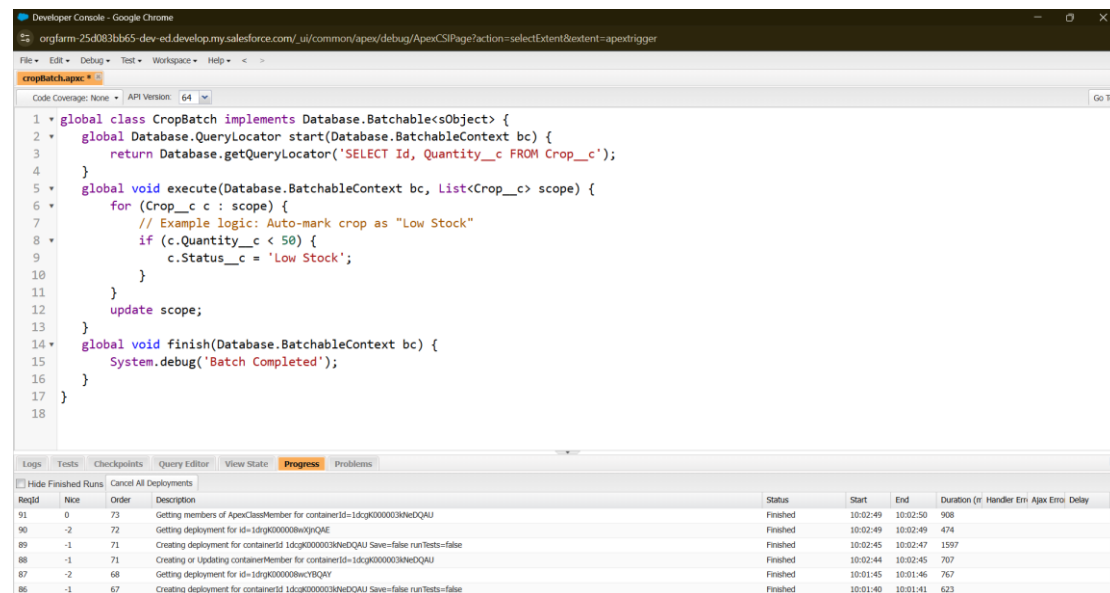
Timestamp	Event	Details
21:40:25-015	USER_DEBUG	[6]DEBUG[[a04gk0000014nyIQAE=SampleL, a04gk00000156k9QAA=Rakesh, a04gk00000156g7QAA=Suresh Raj]]

The log also includes a table of file operations:

Read	Size
	4.44 KB
	2.73 KB
	2.49 KB
	2.21 KB
	2.75 KB
	2.75 KB

5. Batch Apex

✧ Batch Apex – Weekly Update Crop Reports :

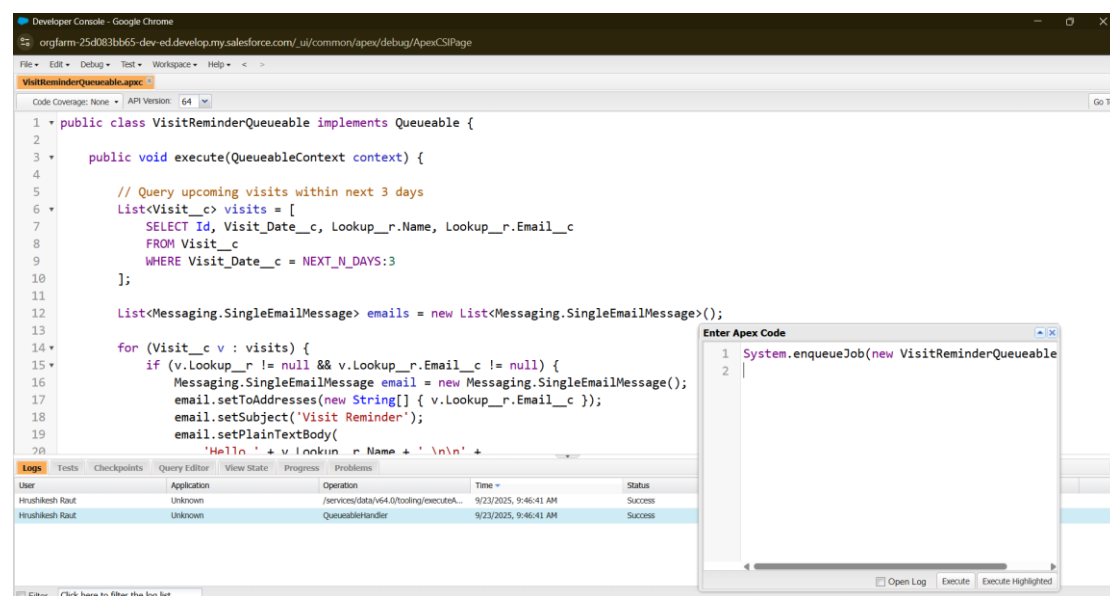


```
1 * global class CropBatch implements Database.Batchable<SObject> {
2 *   global Database.QueryLocator start(Database.BatchableContext bc) {
3 *     return Database.getQueryLocator('SELECT Id, Quantity__c FROM Crop__c');
4 *   }
5 *   global void execute(Database.BatchableContext bc, List<Crop__c> scope) {
6 *     for (Crop__c c : scope) {
7 *       // Example logic: Auto-mark crop as "Low Stock"
8 *       if (c.Quantity__c < 50) {
9 *         c.Status__c = 'Low Stock';
10 *       }
11 *     }
12 *     update scope;
13 *   }
14 *   global void finish(Database.BatchableContext bc) {
15 *     System.debug('Batch Completed');
16 *   }
17 * }
18 }
```

ReqId	Nice	Order	Description	Status	Start	End	Duration (m)	Handler	Err	Apex	Errs	Delay
91	0	73	Getting members of ApexClassMember for containerId=1d3gK00000034NeDQAU	Finished	10:02:49	10:02:50	908					
90	-2	72	Getting deployment for id=1d3gK00000034NeDQAU	Finished	10:02:49	10:02:49	474					
89	-1	71	Creating deployment for containerId=1d3gK00000034NeDQAU Save=false runTests=false	Finished	10:02:45	10:02:47	1597					
88	-1	71	Creating or Updating containerMember for containerId=1d3gK00000034NeDQAU	Finished	10:02:44	10:02:45	707					
87	-2	68	Getting deployment for id=1d3gK00000034NeDQAU	Finished	10:01:45	10:01:46	767					
86	-1	67	Creating deployment for containerId=1d3gK00000034NeDQAU Save=false runTests=false	Finished	10:01:40	10:01:41	623					

6. Queueable Apex

✧ Queueable Apex –Visit Reminder :



```
1 public class VisitReminderQueueable implements Queueable {
2 *
3 *   public void execute(QueueableContext context) {
4 *
5 *     // Query upcoming visits within next 3 days
6 *     List<Visit__c> visits = [
7 *       SELECT Id, Visit_Date__c, Lookup__r.Name, Lookup__r.Email__c
8 *       FROM Visit__c
9 *       WHERE Visit_Date__c = NEXT_N_DAYS:3
10 *     ];
11 *
12 *     List<Messaging.SingleEmailMessage> emails = new List<Messaging.SingleEmailMessage>();
13 *
14 *     for (Visit__c v : visits) {
15 *       if (v.Lookup__r != null && v.Lookup__r.Email__c != null) {
16 *         Messaging.SingleEmailMessage email = new Messaging.SingleEmailMessage();
17 *         email.setToAddresses(new String[] { v.Lookup__r.Email__c });
18 *         email.setSubject('Visit Reminder');
19 *         email.setPlainTextBody(
20 *           'Hello ' + v.Lookup__r.Name + '\n\n' +
21 *           'Your visit is due on ' + v.Visit_Date__c + '\n\n' +
22 *           'Please contact your manager if you need to reschedule.'
23 *         );
24 *         emails.add(email);
25 *       }
26 *     }
27 *     Messaging.sendEmail(emails);
28 *   }
29 * }
```

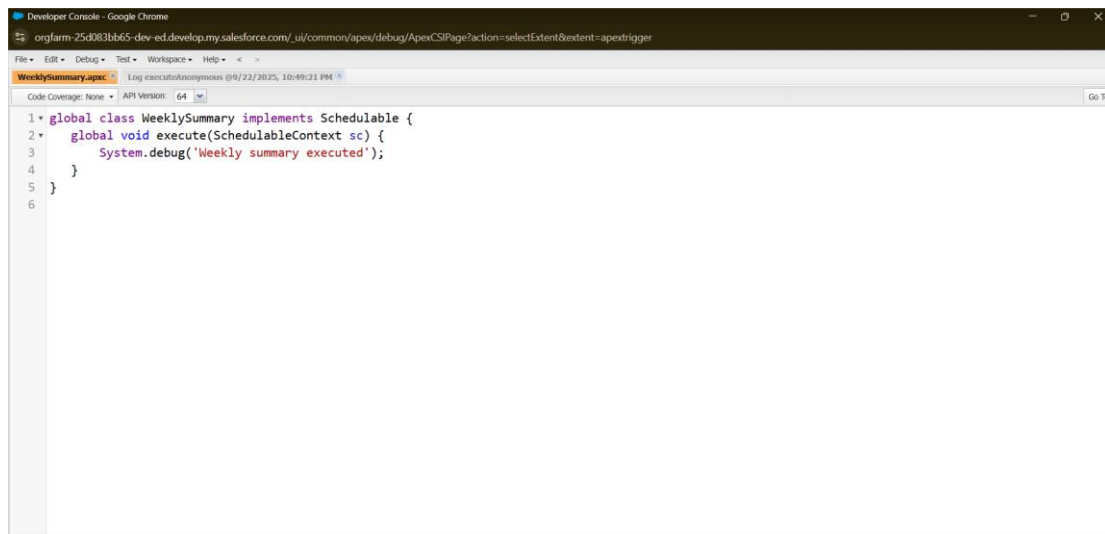
User	Application	Operation	Time	Status
Hrushikesh Raut	Unknown	/services/data/v44.0/tooling/execute...	9/23/2025, 9:46:41 AM	Success
Hrushikesh Raut	Unknown	QueueableHandler	9/23/2025, 9:46:41 AM	Success

Enter Apex Code

```
1 System.enqueueJob(new VisitReminderQueueable());
2
```

7. Schedule Apex

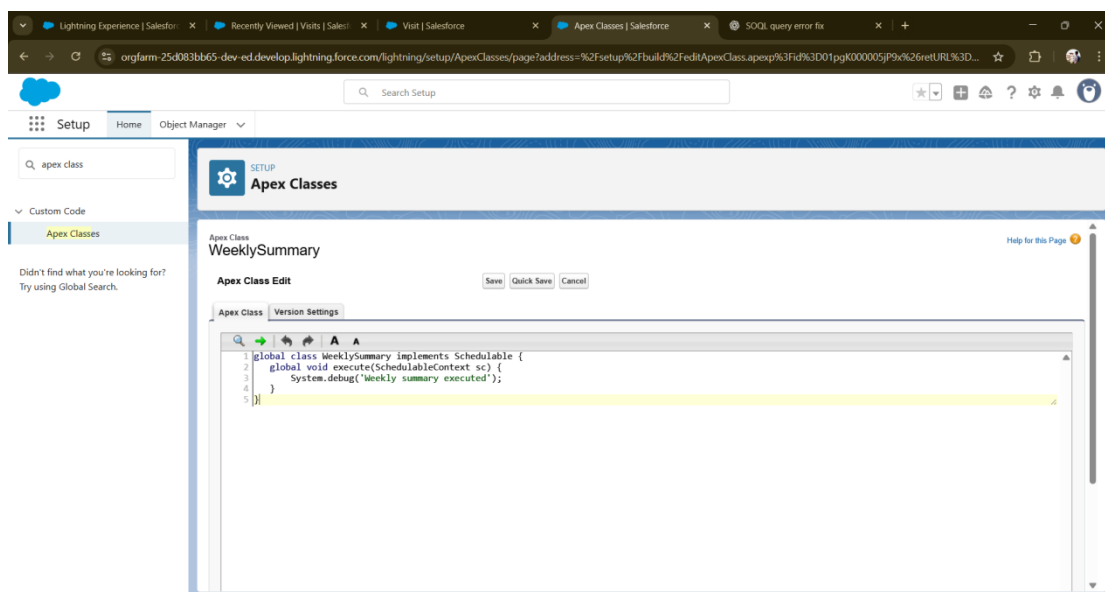
✧ Scheduled Apex – Run Every Week :



The screenshot shows the Salesforce Developer Console with the following Apex code for the WeeklySummary class:

```
1 global class WeeklySummary implements Schedulable {  
2     global void execute(SchedulableContext sc) {  
3         System.debug('Weekly summary executed');  
4     }  
5 }  
6
```

Setup → Apex Classes → Schedule Apex or via Developer Console.



8. Test Classes

Requires 75% code coverage.

Steps:

Setup → Apex Test Execution → New Test.

Enter the test class name

Enter test class code

Save & Run

Steps to run via setup :

- Go to **Setup** → **Apex Test Execution**.
- Click **Select Tests** → Pick **VisitReminderQueueableTest**.
- Run Test → Wait for result

Example : test for CropHelper (sends remainder for visit)

The screenshot shows the Salesforce Developer Console with an Apex test class named `CropHelperTest` and its execution results.

Apex Test Class Code:

```
1 @isTest
2 private class CropHelperTest {
3     @isTest static void testCalculateCropValue() {
4         Decimal value = CropHelper.calculateCropValue(100, 20);
5         System.assertEquals(2000, value);
6     }
7 }
8
```

Execution Results:

Status	Test Run	Enqueued Time	Duration	Failures	Total
✓	TestRun @ 11:14:59 pm			0	1

Overall Code Coverage:

Class	Percent	Lines
Overall	7%	
CropHelper	100%	2/2
UpdateCropStock	0%	0/9
VisitReminderQueueable	0%	0/14
WeeklySummary	0%	0/1