Phase 5: Apex Programming (Developer)

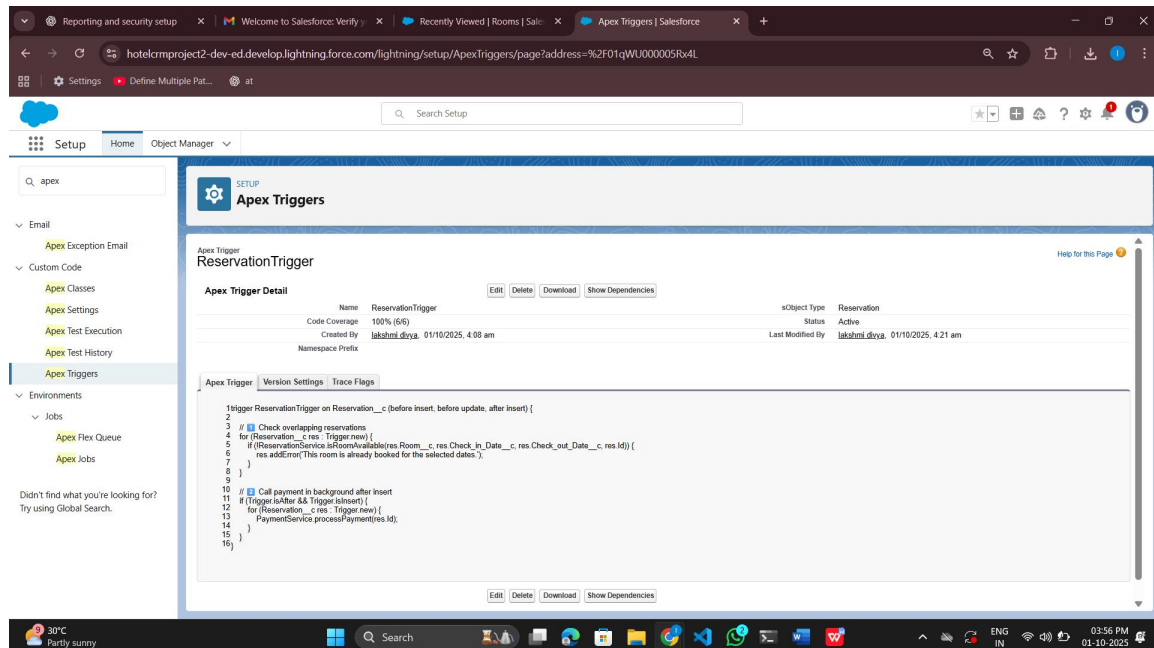Goal: Add advanced custom logic to hotel booking system.

1   Triggers (Prevent Overlapping Reservations)

Object: Reservation

Logic: Check if another reservation exists for the same room in the same date range.

Steps:

1. Setup → Apex Triggers → New Trigger

2. Select Object = Reservation

3. Write logic to prevent double-booking (throw error if overlapping dates).

2   Apex Class (ReservationService)

Purpose: Centralized, reusable methods for booking logic.

Examples of Methods:

- createReservation()

- cancelReservation()

- calculateTotalAmount()

Steps:

1. Setup → Apex Classes → New

2. Write a class ReservationService with reusable methods.

3 Batch Apex (Update Rooms Daily)

Purpose: Run in background to update all Room statuses (e.g., mark occupied/vacant).

Steps:

1. Create a class implementing Database.Batchable.

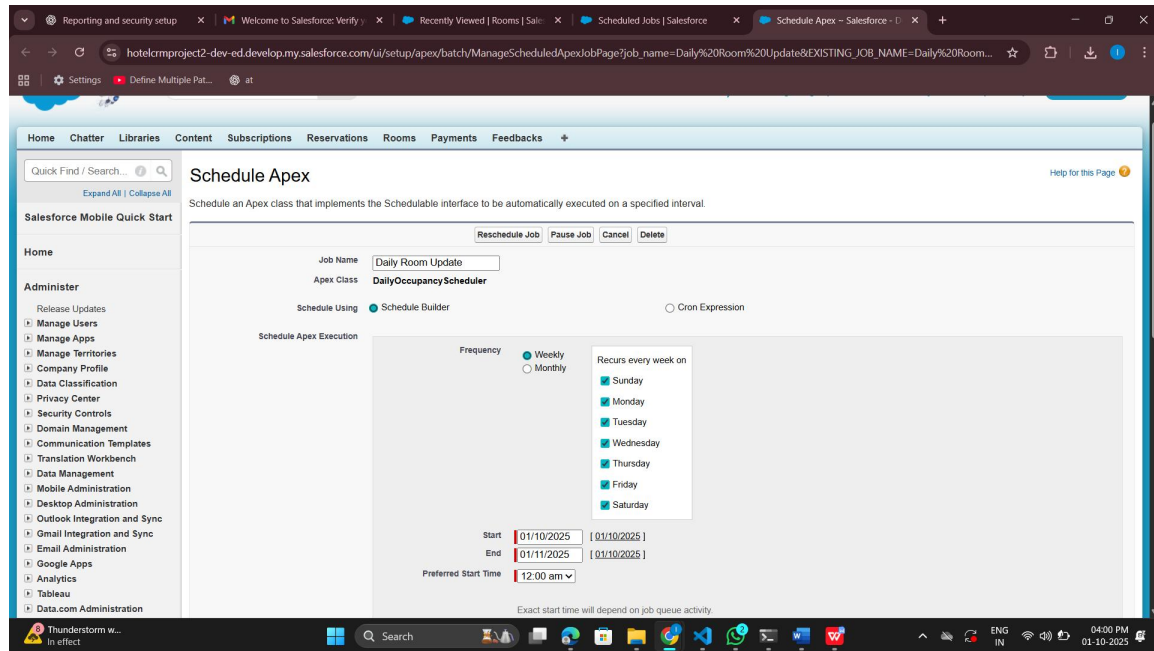2. Add logic to loop through Rooms and update Status.

4   Scheduled Apex (Daily Reports)

Purpose: Send daily occupancy report email at midnight.

Steps:

1. Create a class implementing Schedulable.

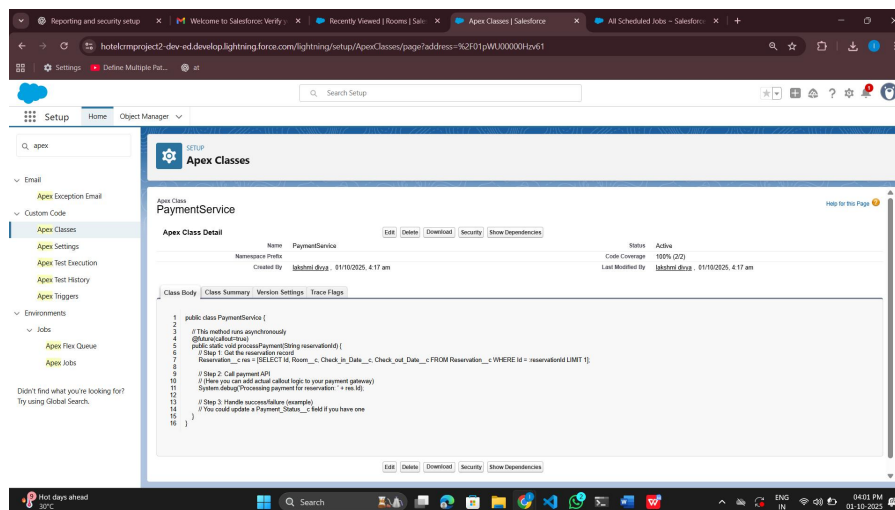2. Use System.schedule to run at 12:00 AM daily.

5   Future Methods (Payment Gateway API Calls)

Purpose: Call external payment system asynchronously.

Steps:

1. In Apex class, create @future(callout=true) method.

2. Send payment request to external API.

6 Exception Handling

Use try-catch-finally in Apex code.

Example:

- Try = attempt booking
- Catch = handle reservation conflict
- Finally = log error

7 Test Classes (Ensure 75%+ Coverage)

Goal: Every trigger, class, and method must be covered.

Steps:

1. Create separate test classes (ReservationServiceTest, TriggerTest, etc.)
2. Use @isTest annotation.
3. Insert mock Room/Reservation records.
4. Assert logic and error messages.

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SETUP
Apex Classes

Apex Class
ReservationTriggerTest

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Apex Class Detail   Edit   Delete   Download   Run Test   Show Dependencies

Name   ReservationTriggerTest   Status   Active
Namespace Prefix   Created By lakshmi divya , 01/10/2025, 4:23 am
Last Modified By lakshmi divya , 01/10/2025, 4:57 am

Class Body | Class Summary | Version Settings | Trace Flags

```
1    @isTest
2    public class ReservationTriggerTest {
3
4        @isTest static void testReservationTriggerAndPayment() {
5            // 1 Get a valid picklist value for Status__c
6            String defaultStatus = Room__c.Status__c.getDescribe().getPicklistValues()[0].getValue();
7
8            // 2 Create a Room using a valid Status__c value
9            Room__c room = new Room__c(
10               Name = 'Test Room',
11               Status__c = defaultStatus
12           );
13           insert room;
14
15           // 3 Insert first reservation (valid) and run future method automatically from trigger
16           Test.startTest();
17           Reservation__c res1 = new Reservation__c(
18               Room__c = room.Id,
19               Check_in_Date__c = Date.today(),
20               Check_out_Date__c = Date.today().addDays(2)
21           );
22           insert res1;
23           Test.stopTest(); // Future method runs here
24
```