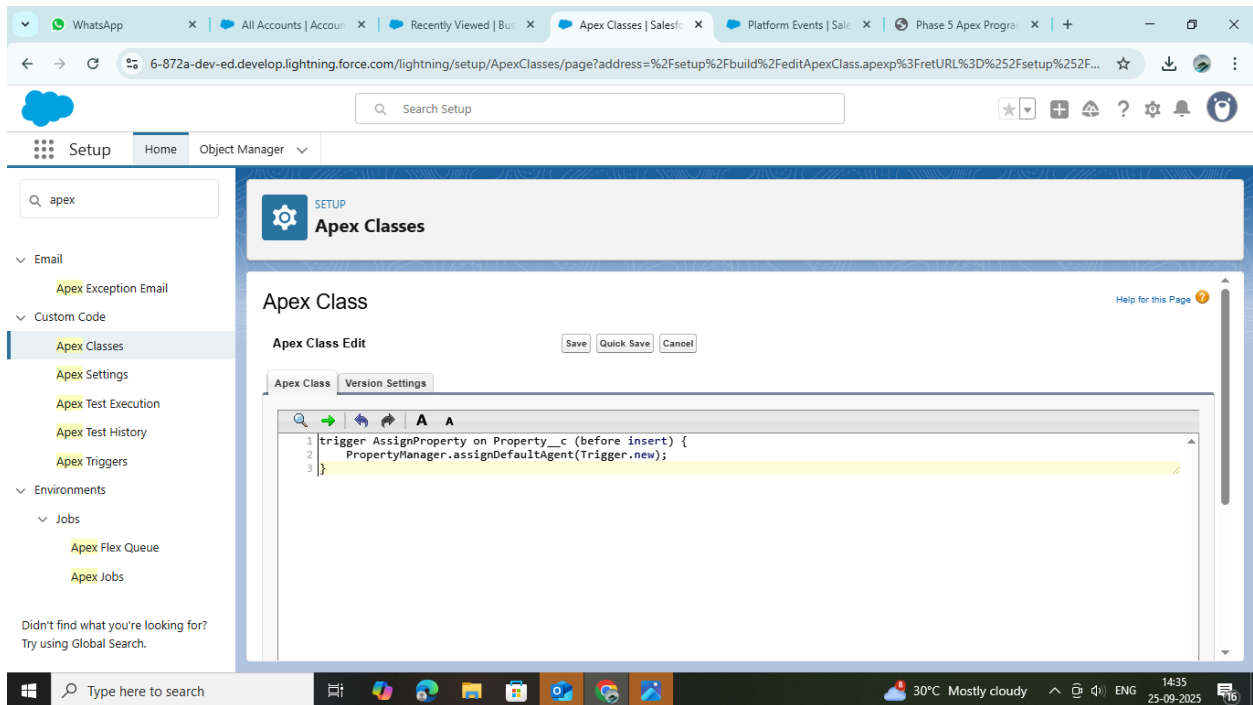Phase 5: Apex Programming (Developer)

This phase focuses on Salesforce Apex programming for the Smart Property Portal project.

1. Classes & Objects

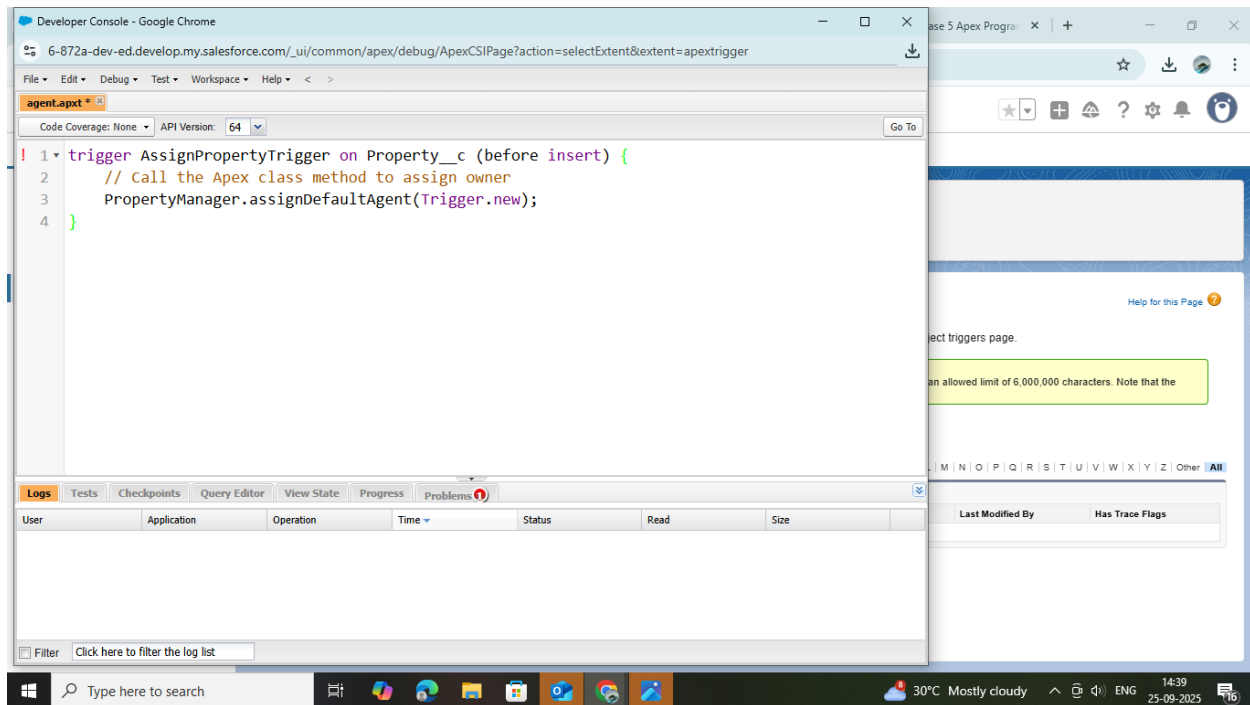Create Apex classes to handle business logic.

Define methods and properties to manipulate Salesforce data.

2. Apex Triggers

Implement triggers for before/after insert, update, delete on objects like account

Example: Automatically assign new properties to Sales Agents.

```
trigger AssignPropertyTrigger on Property__c (before insert) {
    // Call the Apex class method to assign owner
    PropertyManager.assignDefaultAgent(Trigger.new);
}
```

3. Trigger Design Pattern

Use the one-trigger-per-object approach for better organization.

Separate logic into handler classes for maintainability.

4. SOQL & SOSL

Query Salesforce data using SOQL (Salesforce Object Query Language).

Use SOSL for searching text across multiple objects.

5. Collections: List, Set, Map

Use Lists for ordered records, Sets for unique values, and Maps for key-value pairs.

6. Control Statements

Use IF, ELSE, FOR, WHILE, SWITCH to control program flow in Apex.

7. Batch Apex

Process large volumes of records asynchronously using Batch Apex.

8. Queueable Apex

Execute jobs asynchronously in a flexible queue.

9. Scheduled Apex

Automate Apex execution at scheduled times.

10. Future Methods

Run long-running operations asynchronously to improve performance.

11. Exception Handling

Handle runtime errors using TRY, CATCH, and FINALLY blocks.

12. Test Classes

Write test classes to validate Apex logic; mandatory for deployment.

13. Asynchronous Processing

Use Batch, Queueable, Scheduled, and Future methods to manage heavy or delayed operations efficiently.