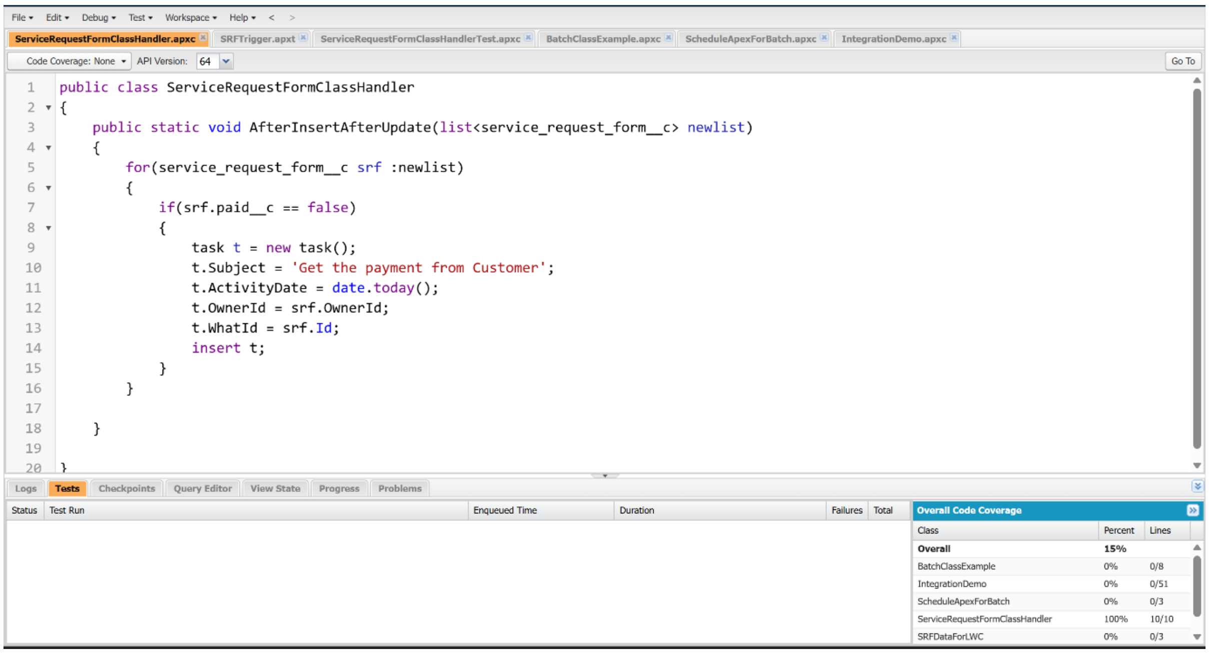
CG Sales & Service : Salesforce Implementation for Retail & Supply Chain Optimization

Phase 5: Apex Programming (Developer)

1. Classes & Objects

- Apex classes are templates that define the structure and behavior of objects.
- I created classes to encapsulate business logic for **Service Request Form** and **Transaction**, making the code modular and reusable.
- Classes include methods to perform specific actions like updating records, validating data, or calculating totals.



Code Coverage: None API Version: 64

```
public class ServiceRequestFormClassHandler
{
    public static void AfterInsertAfterUpdate(list<service_request_form__c> newlist)
    {
        for(service_request_form__c srf :newlist)
        {
            if(srf.paid__c == false)
            {
                task t = new task();
                t.Subject = 'Get the payment from Customer';
                t.ActivityDate = date.today();
                t.OwnerId = srf.OwnerId;
                t.WhatId = srf.Id;
                insert t;
            }
        }

    }

}
```

Overall Code Coverage

Class	Percent	Lines
Overall	**15%**	
BatchClassExample	0%	0/8
IntegrationDemo	0%	0/51
ScheduleApexForBatch	0%	0/3
ServiceRequestFormClassHandler	100%	10/10
SRFDataForLWC	0%	0/3

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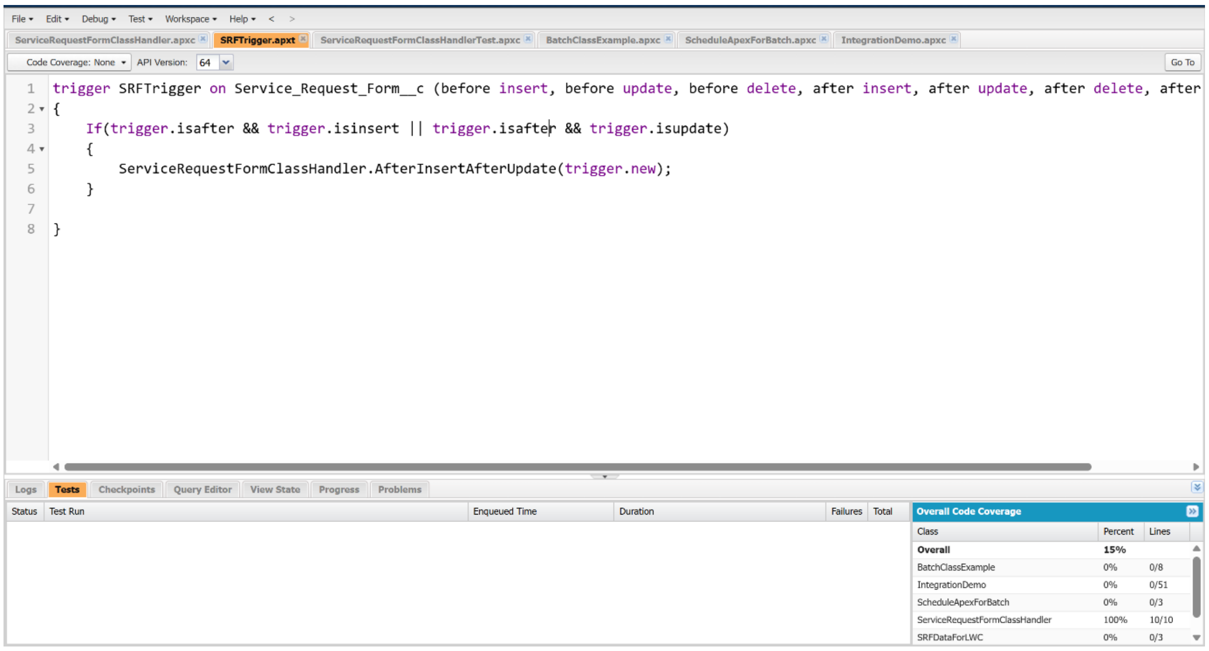
2. Apex Triggers (Before/After Insert/Update/Delete)

- Triggers allow automatic execution of Apex code in response to database events.
- I implemented **before insert** triggers to validate data before saving, and **after insert/update** triggers to perform actions like creating related records or updating fields.
- Example: After a transaction is created, the trigger updates the related **Service Request Form** status.



```
trigger SRFTrigger on Service_Request_Form__c (before insert, before update, before delete, after insert, after update, after delete, after
{
    If(trigger.isafter && trigger.isinsert || trigger.isafter && trigger.isupdate)
    {
        ServiceRequestFormClassHandler.AfterInsertAfterUpdate(trigger.new);
    }

}
```

Overall Code Coverage

Class	Percent	Lines
Overall	**15%**	
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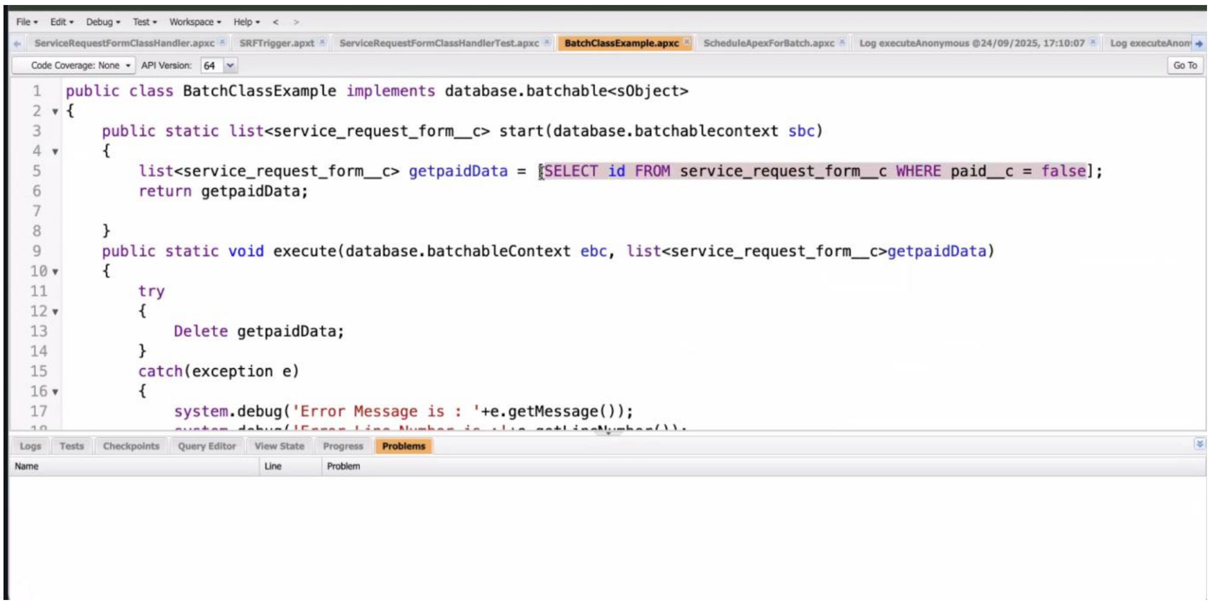
3. SOQL

- **SOQL (Salesforce Object Query Language)** is used to query records from Salesforce objects.
- In my project, I used **SOQL** to retrieve records related to **Service Request Form**, **Transaction**, and **Transaction Line Item** objects.
- Example: Used SOQL to fetch all **Transaction Line Item** records linked to a specific transaction.

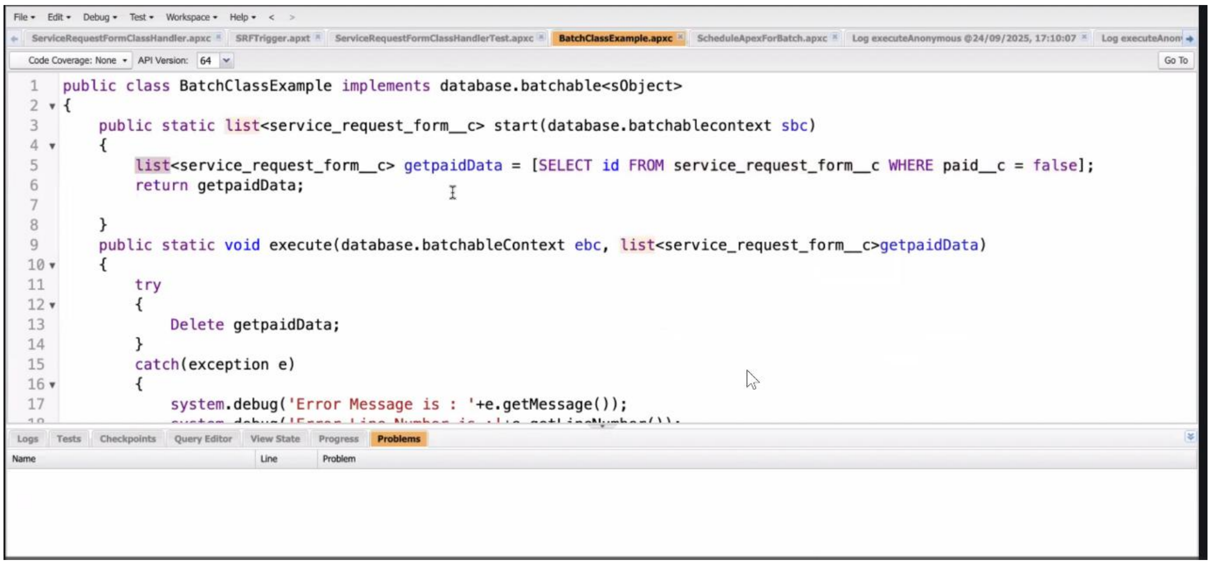


```
public class BatchClassExample implements database.batchable<sObject>
{
    public static list<service_request_form__c> start(database.batchablecontext sbc)
    {
        list<service_request_form__c> getpaidData = [SELECT id FROM service_request_form__c WHERE paid__c = false];
        return getpaidData;

    }
    public static void execute(database.batchableContext ebc, list<service_request_form__c>getpaidData)
    {
        try
        {
            Delete getpaidData;
        }
        catch(exception e)
        {
            system.debug('Error Message is : '+e.getMessage());
```

4. Collections: List

- In my project, I used **List** collections to store records retrieved from Salesforce objects using **SOQL** queries.
- Lists allow me to hold multiple records in an ordered structure and process them efficiently in loops.



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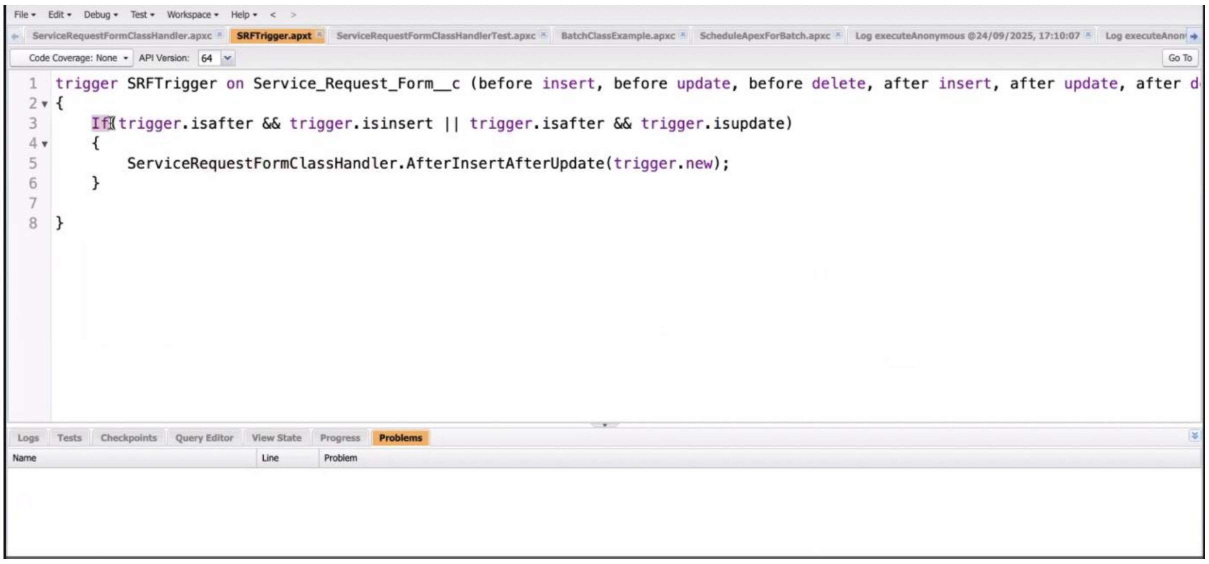
        }
        catch(exception e)
        {
            system.debug('Error Message is : '+e.getMessage());
```

5. Control Statements

- In my project, I used **if statements** within **Apex triggers** to implement conditional logic.
- This allowed me to check specific conditions before performing actions, ensuring accurate processing of records.
- Example: In the **Service Request Form** trigger, I used an **if statement** to update the status only when the payment field was marked as "Paid."



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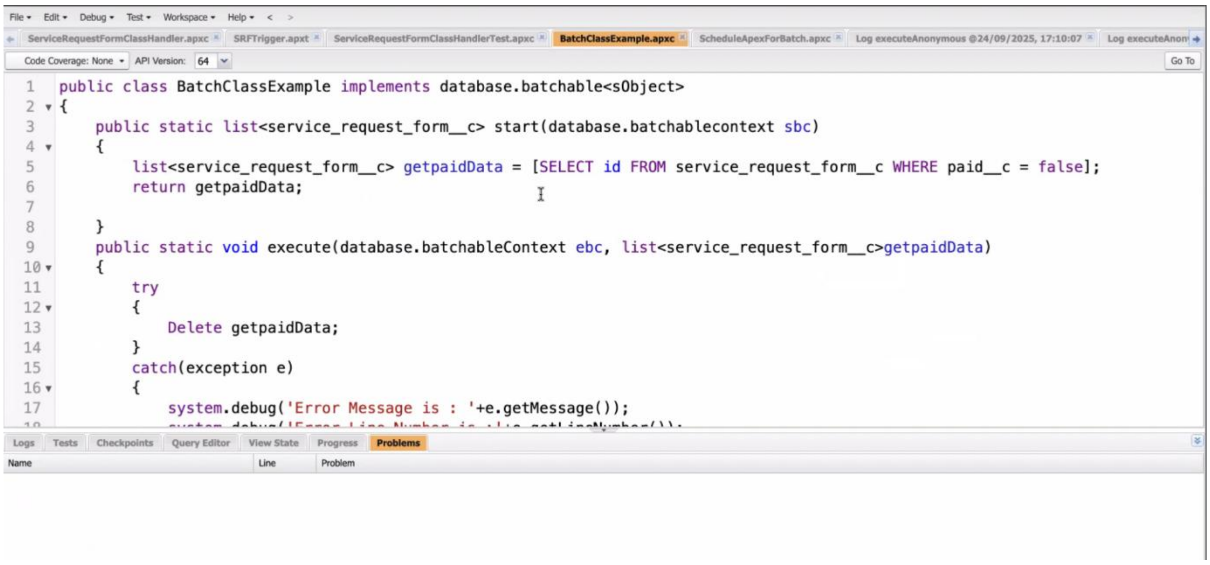
trigger SRFTrigger on Service_Request_Form__c (before insert, before update, before delete, after insert, after update, after d
{
    If(trigger.isafter && trigger.isinsert || trigger.isafter && trigger.isupdate)
    {
        ServiceRequestFormClassHandler.AfterInsertAfterUpdate(trigger.new);
    }

}
```

6. Batch Apex

- **Batch Apex** is used to process large volumes of records asynchronously in manageable chunks, which helps avoid Salesforce governor limits.
- In my project, I created a **Batch Apex class** to process **Service Request Forms** and update their statuses based on payment or other conditions.
- The batch is scheduled to run periodically, allowing the system to manage large data efficiently without affecting user operations.


File ▾ Edit ▾ Debug ▾ Test ▾ Workspace ▾ Help ▾ < >
ServiceRequestFormClassHandler.apxc
SRFTrigger.apxt
ServiceRequestFormClassHandlerTest.apxc
BatchClassExample.apxc
ScheduleApexForBatch.apxc
Log executeAnonymous @24/09/2025, 17:10:07
Log executeAnon
Code Coverage: None
API Version: 64
Go To
Logs
Tests
Checkpoints
Query Editor
View State
Progress
Problems
Name
Line
Problem

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    }
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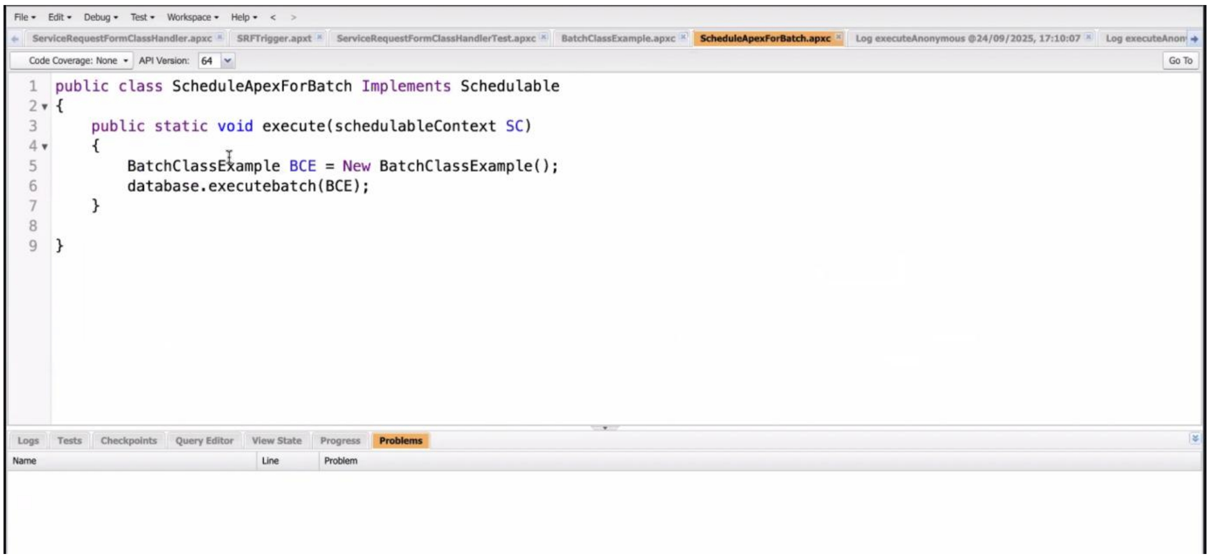
    {
        try
        {
            Delete getpaidData;
        }
        catch(exception e)
        {
            system.debug('Error Message is : '+e.getMessage());
```

---

7. Scheduled Apex

- **Scheduled Apex** allows Apex code to run automatically at specified times.
- In my project, I scheduled the **Batch Apex** class to run **once every month**.
- This ensures that all **Service Request Forms** with unpaid statuses are processed automatically, updating statuses or triggering follow-up tasks without manual intervention.
- Scheduling the batch improves efficiency and ensures timely management of pending service requests.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ServiceRequestFormClassHandler.apxc
SRFTrigger.apxt
ServiceRequestFormClassHandlerTest.apxc
BatchClassExample.apxc
ScheduleApexForBatch.apxc
Log executeAnonymous @24/09/2025, 17:10:07
Log executeAnon
Go To
Logs Tests Checkpoints Query Editor View State Progress Problems
Name Line Problem

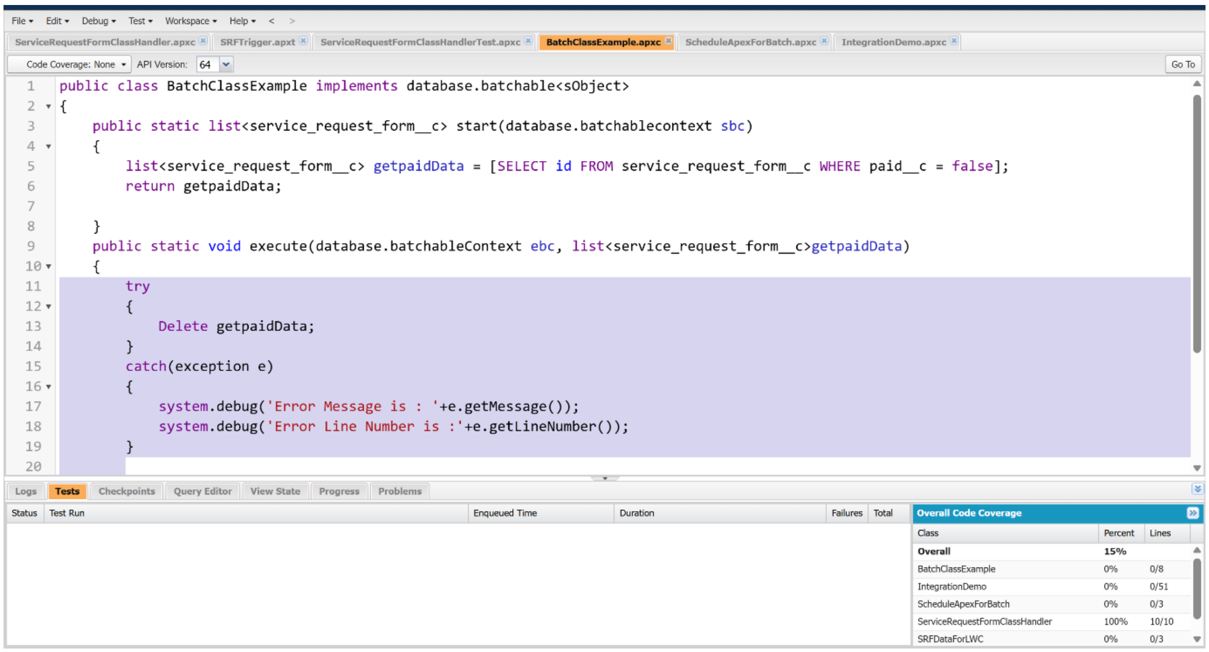
Code Coverage: None API Version: 64

```
public class ScheduleApexForBatch Implements Schedulable
{
    public static void execute(schedulableContext SC)
    {
        BatchClassExample BCE = New BatchClassExample();
        database.executebatch(BCE);
    }

}
```

8. **Exception Handling**

- **Exception Handling** is used to manage errors and prevent system crashes during Apex execution.
- In my project, I used **try-catch blocks** in triggers and classes to handle exceptions when updating **Service Request Forms** and related transactions.
- Example: If a record fails to update due to invalid data or null references, the **catch block** captures the error and prevents the trigger or class from failing completely.
- This ensures data integrity and smooth execution of automated processes.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Logs Tests Checkpoints Query Editor View State Progress Problems
Status Test Run Enqueued Time Duration Failures Total

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        return getpaidData;

    }
    public static void execute(database.batchableContext ebc, list<service_request_form__c>getpaidData)
    {
        try
        {
            Delete getpaidData;
        }
        catch(exception e)
        {
            system.debug('Error Message is : '+e.getMessage());
            system.debug('Error Line Number is :'+e.getLineNumber());
        }

```

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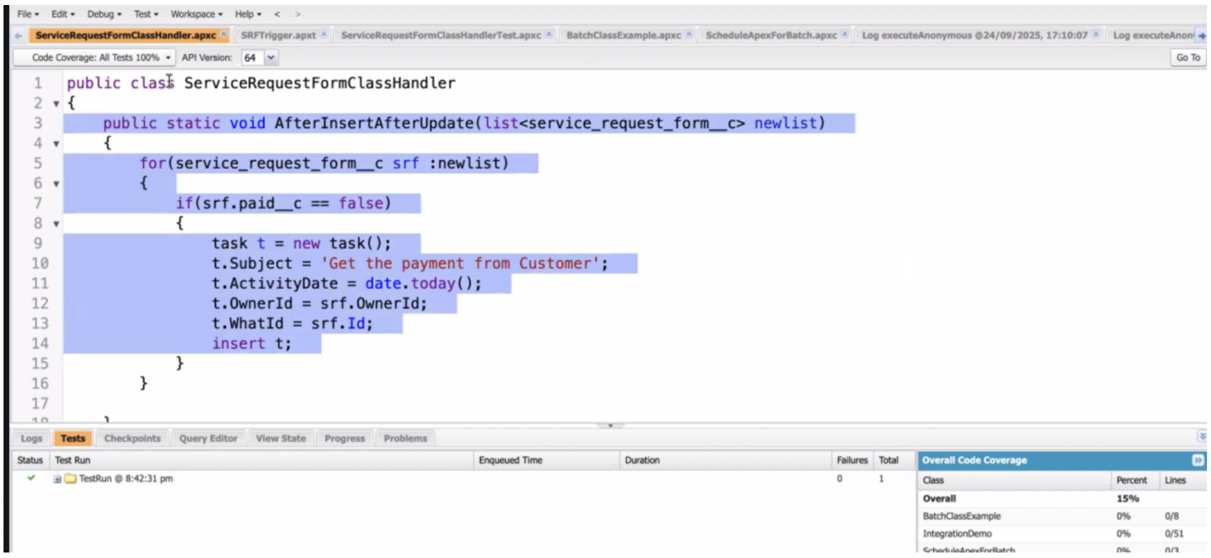
9. Test Classes

- Test Classes are used to validate the functionality of Apex triggers, classes, and flows.
- In my project, I created test classes to ensure that Service Request Forms, Transactions, and Transaction Line Items are processed correctly.
- Test classes cover different scenarios, such as creating a transaction, updating payment status, and verifying that triggers and batch jobs execute as expected.
- Achieved 100% code coverage, ensuring all Apex code is fully tested and meets Salesforce deployment standards.
- Example: Verified that the Service Request Form status is automatically updated when the Paid field changes.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Code Coverage: All Tests 100%
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            }
        }

    }
```

Status	Test Run	Enqueued Time	Duration	Failures	Total
✓	TestRun @ 8:42:31 pm			0	1

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