

• Smart Event Management & Ticketing System

• Problem Statement

Event organizers face multiple challenges:

- Ticket sales are fragmented across different channels (online, offline, sponsors).
- No centralized system to manage seat allocation, VIP access, cancellations, and refunds.
- Sponsors don't get proper visibility into performance .
- Attendees lack a smooth digital experience (QR tickets, real-time updates, group discounts).

To solve this, we want a system to:

- Centralize event, ticket, and sponsor management.
- Automate approval workflows for VIP tickets and cancellations.
- Enable digital payments and QR-based entry passes.
- Provide real-time dashboards for ticket sales, sponsorship revenue, and attendee engagement.

Phase 1: Problem Understanding & Industry Analysis

1 Requirement Gathering

- Capture event details (type, date, location, capacity).
- Manage ticket categories (General, VIP, Early Bird, Group Discounts).
- Automate seat allocation and group bookings.
- Track sponsorship deals and benefits.
- Send digital tickets/QR codes to attendees.
- Enable refunds and cancellations with approval workflows.
- Provide dashboards for ticket sales, revenue, and attendance.

2 Stakeholder Analysis

- Event Organizers: Need event setup, sponsor management, ticket monitoring.
- Attendees: Need smooth booking, payments, QR entry, and refund options.
- Sponsors: Need visibility into event reach audience size, and engagement.
- Administrators (CRM Managers): Ensure secure access, data integrity, and reporting.

3 Business Process Mapping

Current:

- Tickets sold via third-party sites or offline.
- Manual sponsor agreement tracking.
- Attendees face delays in receiving confirmation.
- No unified dashboard for revenue analysis.

Proposed:

- Centralized Event, Ticket, Sponsor objects.
- Automated VIP approvals and refund workflows.
- QR-code ticketing + calendar sync for attendees.
- Dashboards for organizers & sponsors to track revenue, seats, and engagement.

4 Industry-specific Use Case Analysis

- Concerts & Music Festivals ☐ VIP, General, Early Bird ticketing.
- Corporate Conferences ☐ Multi-track event scheduling, sponsor branding.
- Sports Events ☐ Seat allocation and bulk ticket sales.
- Weddings & Private Events ☐ Guest management with QR invitations.

5 AppExchange Exploration

- Explore apps for payment gateways (Razorpay).
- Explore apps for QR code generation.
- Check Event Management accelerators available on AppExchange and customize instead of reinventing everything.

Phase 2: Org Setup & Configuration

- This phase focused on setting up and configuring the Salesforce Developer Org for the Smart Event Management Project. The goal was to establish a solid foundation for the CRM system, ensuring proper organizational structure, security, and access controls. The configuration was carried out entirely using Salesforce’s declarative (point-and-click) tools without coding.

Steps Completed in Phase 2:

1. Company Profile Setup

SETUP

Company Information

Company Information

Smart Event Management CRM

The organization's profile is below.

User Licenses (104) | Permission Set Licenses (104) | Feature Licenses (11) | Usage-based Entitlements (104)

Organization Detail

Edit

Organization Name	Smart Event Management CRM	Phone	
Primary Contact	OrgFarm EPIC	Fax	
Division		Default Locale	English (United States)
Address	India	Default Language	English
Fiscal Year Starts In	January	Default Time Zone	(GMT+05:30) India Standard Time (Asia/Kolkata)
Activate Multiple Currencies	<input type="checkbox"/>	Currency Locale	English (India) - INR
Enable Data Translation	<input type="checkbox"/>	Used Data Space	342 KB (7%) View
Newsletter	<input checked="" type="checkbox"/>	Used File Space	17 KB (0%) View
Admin Newsletter	<input checked="" type="checkbox"/>	API Requests, Last 24 Hours	14 (15,000 max)
Hide Notices About System Maintenance	<input type="checkbox"/>	Streaming API Events, Last 24 Hours	0 (10,000 max)
Hide Notices About System Downtime	<input type="checkbox"/>	Restricted Logins, Current Month	0 (0 max)
Locale Formats	ICU	Salesforce.com Organization ID	00DgL000008eZWN
		Organization Edition	Developer Edition
		Instance	CAN98

- Configured company information, business hours, and holidays.

2. Business Hours

SETUP

Business Hours

Organization Business Hours

Select the days and hours that your support team is available. These hours, when associated with escalation rules, determine the times at which cases can escalate.

If you enter blank business hours for a day, that means your organization does not operate on that day.

Holidays (0)

Business Hours Detail

Edit

Business Hours Name	Smart Event Default Hours	Time Zone	(GMT+05:30) India Standard Time (Asia/Kolkata)														
Business Hours	<table><tr><td>Sunday</td><td>9:00 AM to 6:00 PM</td></tr><tr><td>Monday</td><td>9:00 AM to 6:00 PM</td></tr><tr><td>Tuesday</td><td>9:00 AM to 6:00 PM</td></tr><tr><td>Wednesday</td><td>9:00 AM to 6:00 PM</td></tr><tr><td>Thursday</td><td>9:00 AM to 6:00 PM</td></tr><tr><td>Friday</td><td>9:00 AM to 6:00 PM</td></tr><tr><td>Saturday</td><td>9:00 AM to 6:00 PM</td></tr></table>	Sunday	9:00 AM to 6:00 PM	Monday	9:00 AM to 6:00 PM	Tuesday	9:00 AM to 6:00 PM	Wednesday	9:00 AM to 6:00 PM	Thursday	9:00 AM to 6:00 PM	Friday	9:00 AM to 6:00 PM	Saturday	9:00 AM to 6:00 PM	Default Business Hours	<input checked="" type="checkbox"/>
Sunday	9:00 AM to 6:00 PM																
Monday	9:00 AM to 6:00 PM																
Tuesday	9:00 AM to 6:00 PM																
Wednesday	9:00 AM to 6:00 PM																
Thursday	9:00 AM to 6:00 PM																
Friday	9:00 AM to 6:00 PM																
Saturday	9:00 AM to 6:00 PM																
Active	<input checked="" type="checkbox"/>																
Created By	Sambhitha.M.C 9/17/2025, 4:36 AM	Last Modified By	Sambhitha.M.C 9/17/2025, 4:36 AM														

3. Holidays

SETUP

Holidays

Holiday Detail

Holidays are dates and times at which business hours are suspended. These dates and times, when associated with business hours, suspend business hours.

Add or remove business hours to holidays to suspend business hours and escalation rules during the holidays.

[Business Hours \[0\]](#)

Holiday Detail

Edit

Delete

Holiday Name	NEW YEAR
Description	
Date and Time	1/1/2026 All Day
Recurring Holiday	Occurs every January 1 effective 1/1/2026
Created By	Samhitha M.C 9/17/2025, 4:48 AM

4. User Setup
- Created multiple users with different roles (Event Manager, Sponsor, Attendee).

SETUP

Users

User Edit
John Event Manager

User Edit

Save

Save & New

Cancel

General Information

First Name	John	Role	Event Manager
Last Name	Event Manager	User License	Salesforce
Alias	jeven	Profile	Standard User
Email	johneventmanager@gmail	Active	<input checked="" type="checkbox"/>
Username	johneventmanager@smarte	Marketing User	<input type="checkbox"/>
Nickname	User17581994855334175	Offline User	<input type="checkbox"/>
Title		Knowledge User	<input type="checkbox"/>
Company		Flow User	<input type="checkbox"/>
Department		Service Cloud User	<input type="checkbox"/>

Event Manager

SETUP

Users

User Edit
Sarah Sponsor

User Edit

Save

Save & New

Cancel

General Information

First Name	Sarah	Role	Sponsor
Last Name	Sponsor	User License	Salesforce
Alias	spon	Profile	Standard User
Email	sam+smarteentsponsor@t	Active	<input checked="" type="checkbox"/>
Username	sam+sponsor@smartevent	Marketing User	<input type="checkbox"/>
Nickname	User175819973517988547	Offline User	<input type="checkbox"/>
Title		Knowledge User	<input type="checkbox"/>

Sponsor

SETUP

Users

User Edit
David Attendee

User Edit

Save

Save & New

Cancel

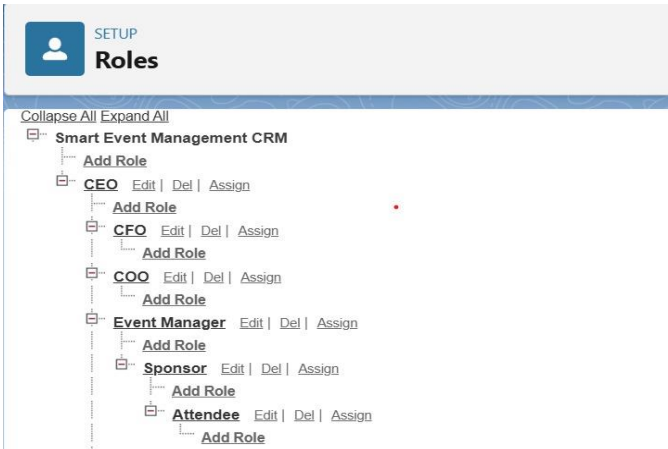
General Information

First Name	David	Role	Attendee
Last Name	Attendee	User License	Salesforce Platform
Alias	datt	Profile	Standard Platform User
Email	sam+attendee@gmail.com	Active	<input checked="" type="checkbox"/>
Username	attendee@smartevent.com	Marketing User	<input type="checkbox"/>
Nickname	User175819995070990819	Offline User	<input type="checkbox"/>
Title		Knowledge User	<input type="checkbox"/>
Company		Flow User	<input type="checkbox"/>
Department		Service Cloud User	<input type="checkbox"/>
Division		Site.com Contributor User	<input type="checkbox"/>
		Site.com Publisher User	<input type="checkbox"/>

Attendee

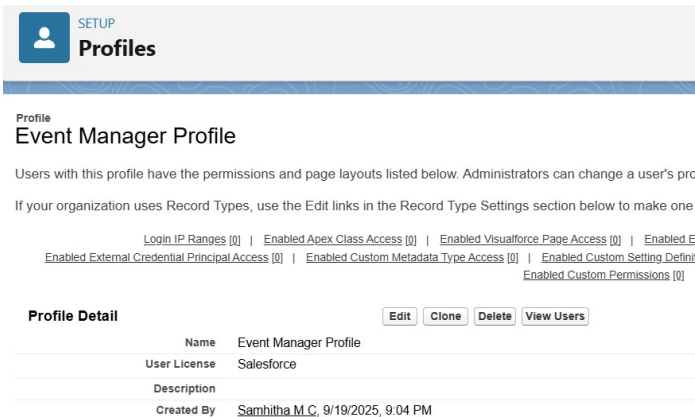
5. Roles

- Defined role hierarchy to manage data visibility across the organization.

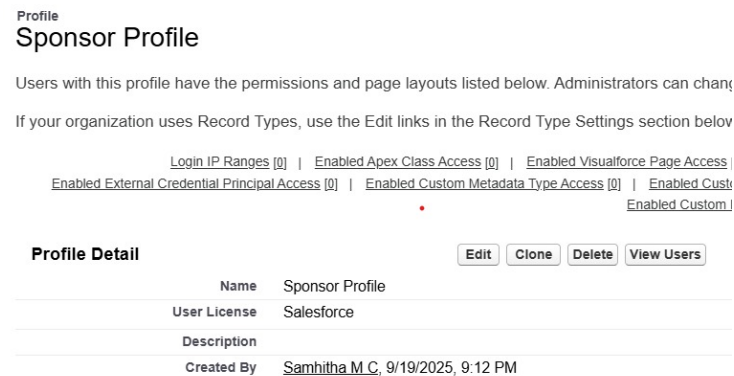


6. Profiles


- Created and customized profiles by cloning standard profiles and adjusting object-level permissions.



- Event Manager Profile



- Sponsor Profile


SETUP
Profiles

Profile

Attendee Profile

Users with this profile have the permissions and page layouts listed below. Administrators can cha

If your organization uses Record Types, use the Edit links in the Record Type Settings section bel

[Login IP Ranges \[0\]](#) |
 [Enabled Apex Class Access \[0\]](#) |
 [Enabled Visualforce Page Acces](#)
[Enabled External Credential Principal Access \[0\]](#) |
 [Enabled Custom Metadata Type Access \[0\]](#) |
[Enabled Cu](#)
[Enabled Custom](#)

Profile Detail


Edit Clone Delete View Users

Name	Attendee Profile
User License	Salesforce
Description	
Created By	Samhitha M.C, 9/19/2025, 9:13 PM

- Attendee Profile


7. Login Access Policies

- Enabled admin login access for troubleshooting and testing.


SETUP
Login Access Policies

Login Access Policies

Control which support organizations your users can grant login access to.


Changes Saved

Manage Support Options


Save Cancel

Setting	Enabled
Administrators Can Log in as Any User	<input checked="" type="checkbox"/>
Support Organization	Packages
Salesforce.com Support	Available to Users <input checked="" type="radio"/> Available to Administrators Only <input type="radio"/>

Save Cancel

8. Sharing Rules

- Created exceptions to OWD (e.g., Event Manager access to Attendees, Sponsors, and Tickets).


SETUP
Sharing Settings

No sharing rules specified.

Work Type Group Sharing Rules

New Recalculate

Work Type Group Sharing Rules Help ?

No sharing rules specified.

Attendee Sharing Rules

New Recalculate

Attendee Sharing Rules Help ?

Action	Criteria	Shared With	Access Level
Edit Del	Owner in Role Attendee	Role Event Manager	Read Only

Event Sharing Rules

New Recalculate

Event Sharing Rules Help ?

No sharing rules specified.

Sponsor Sharing Rules

New Recalculate

Sponsor Sharing Rules Help ?

Action	Criteria	Shared With	Access Level
Edit Del	Owner in Role Sponsor	Role Event Manager	Read/Write

Ticket Sharing Rules

New Recalculate

Ticket Sharing Rules Help ?

Action	Criteria	Shared With	Access Level
Edit Del	Owner in Role Attendee	Role Event Manager	Read Only

9. Organization wide Defaults(OWD)

- Configured baseline record access (Event = Public Read Only, Attendee/Sponsor/Ticket = Private).

Attendee	Private	Private	✓
Event	Public Read Only	Public Read Only	✓
Sponsor	Private	Private	✓

10. Permission Sets

- Assigned extra permissions without modifying base profiles.

Custom Object Permissions									
	Basic Access				Data Administration				
	Read	Create	Edit	Delete	View All Records	Modify All Records	View All Fields		
Attendees	✓	✓							
Events	✓	✓	✓	✓	✓	✓			

	Basic Access				Data Administration				
	Read	Create	Edit	Delete	View All Records	Modify All Records	View All Fields		
Sponsors	✓	✓	✓						

Phase 3: Data Modeling and Relationships

Goal: Build the core data structure to manage events, sponsors, attendee and tickets.

1. Standard and Custom Objects

- Account: To store information.
- Contact: To store contact details.

Custom Object:

SETUP > OBJECT MANAGER

Attendee

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Restriction Rules

Scoping Rules

Details

Description

API Name
Attendee_c__c

Custom
✓

Singular Label
Attendee

Plural Label
Attendees

Enable Reports
✓

Track Activities
✓

Track Field History

Deployment Status
Deployed

Help Settings
Standard salesforce.com Help Window

i. Attendee

SETUP > OBJECT MANAGER
Event

Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters

Details
Description
API Name
Event_c__c
Custom
✓
Singular Label
Event
Plural Label
Events
Enable Reports
✓
Track Activities
✓
Track Field History
Deployment Status
Deployed
Help Settings
Standard salesforce.com Help Window

ii.

Event

SETUP > OBJECT MANAGER
Sponsor

Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Restriction Rules

Details
Description
API Name
Sponsor_c__c
Custom
✓
Singular Label
Sponsor
Plural Label
Sponsors
Enable Reports
✓
Track Activities
✓
Track Field History
Deployment Status
Deployed
Help Settings
Standard salesforce.com Help Window

iii.

Sponsor

SETUP > OBJECT MANAGER
Ticket

Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Restriction Rules

Details
Description
API Name
Ticket_c__c
Custom
✓
Singular Label
Ticket
Plural Label
Tickets
Enable Reports
✓
Track Activities
✓
Track Field History
Deployment Status
Deployed
Help Settings
Standard salesforce.com Help Window

iv.

Ticket

2. Fields

Event_Status__c

- Purpose: Tracks the current state of the event lifecycle.
- Values: *Planning, Registration Open, Active (In Progress), Completed, Canceled*. (This field is crucial for automation and reporting.)

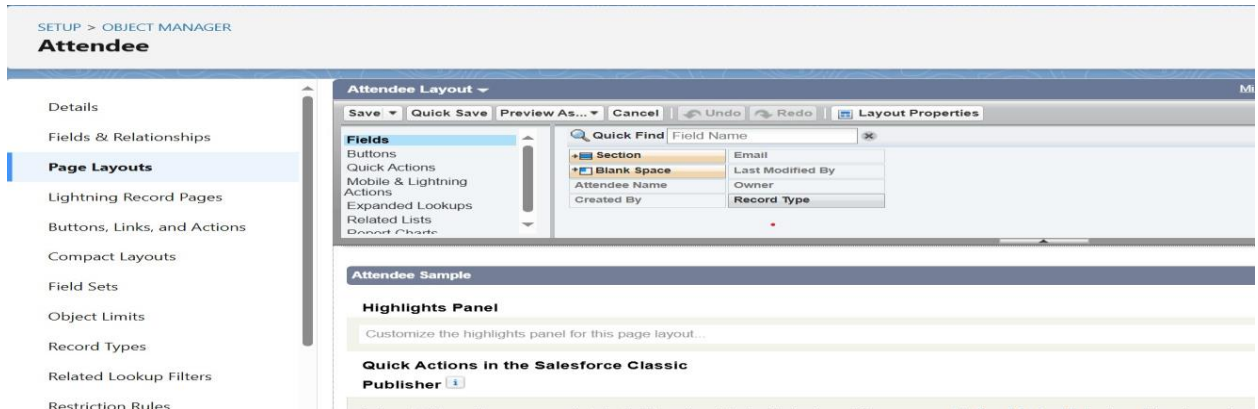
Ticket_Type__c

- Purpose: Tracks the specific access level purchased or assigned.
- Values: *General Admission, VIP, Speaker, Sponsor, Employee*. (Affects Page Layout visibility for related details, like seating assignment.)

3. Record Types

- Record Types allow you to offer different business processes values, and page layouts to different users based on their profile. They are often used on Objects like Lead, Opportunity, or Case, and custom objects.

4. Page Layout

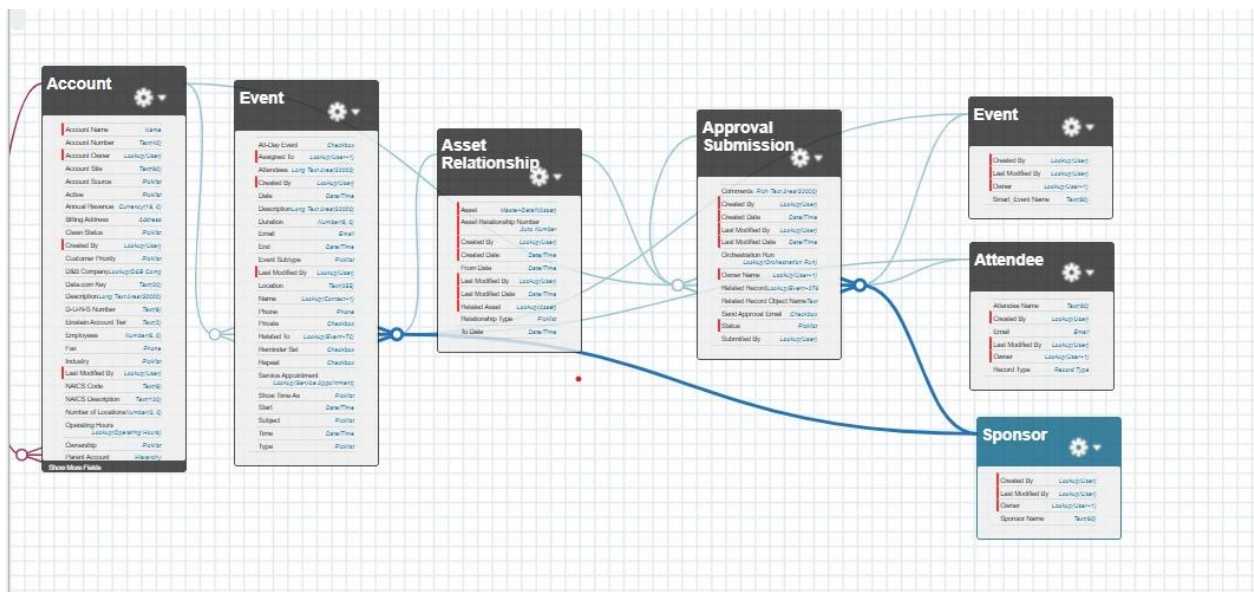


- Page Layouts are assigned to specific **Profiles** and **Record Types**.

5. Custom Layout

- The Project compact layout is configured to show the project name, event manager name, sponsors and tickets in list.

6. Schema builder



Phase 4: Process Automation (Admin)

7. Validation Rules:

Attendee Validation Rule

[Back to Attendee](#)

Validation Rule Detail

EditClone

Rule Name	Attendee_Email_Required	Active	<input checked="" type="checkbox"/>
Error Condition Formula	ISBLANK(Email__c)		
Error Message	Email is required for Attendees.	Error Location	Top of Page
Description			
Created By	Samhitha M.C, 9/24/2025, 6:19 AM	Modified By	Samhitha M.C, 9/24/2025, 6:19 AM

EditClone

- A validation rule has been created on the attendee. It prevents user from blank email Id.


8. Workflow Rules:

- This is a legacy automation tool. All new automations for this project are being built in Flow builder for better performance.

9. Process Builders:

- Used for all record triggered automations in this project.

10. Approval Process:

 **SETUP**

Approval Processes

Approval Processes

Event: Event_Approval

[« Back to Approval Process List](#)

Process Definition Detail

EditCloneDeleteActivate

Process Name	Event_Approval
Unique Name	Event_Approval
Description	
Entry Criteria	
Record Editability	Administrator ONLY AI
Approval Assignment Email Template	Welcome_to_Smart_Event
Initial Submitters	Event Owner
Created By	Samhitha M.C, 9/25/2025, 10:06 AM

- Approval process is required for this project as it requires more team members

11. Flow Builder

Flow Builder

Send Welcome Email - V1

Your automation was activated.

Select Elements

Auto-Layout

Last saved on 9/25/2025, 10:26 PM

Active

Run

Debug

View Tests

Save As New Version

Save

De

Record-Triggered Flow

Start

Object: **Attendee**

Trigger: **A record is created**

Optimize for: **Actions and Related Recor...**

+ Add Scheduled Paths (Optional)

Open Flow Trigger Explorer for Attend...

Run Immediately

Send Welcome Email

Action

End

Welcome Email to Attendee

* Label

Send Welcome Email

* API Name

Send_Welcome_Email

Description

Use values from earlier in the flow to set the inputs for the "Welcome Email to Attendee" core ac use its outputs later in the flow, store them in variables.

Set Input Values

A₃ * Record ID

\$Record → Id

Show advanced options

- Record-Triggered Flow: Runs automatically when a attendee is created . This single flow is the cover of the project’s automation.

12. Email alerts

SETUP

Email Alerts

Email Alert

Welcome Email to Attendee

Rules Using This Email Alert [0] | Approval Processes Using This Email Alert [0]

Email Alert Detail

Edit

Delete

Clone

Description	Welcome Email to Attendee
Unique Name	Welcome_Email_to_Attendee
From Email Address	Current User's email address
Recipients	User: David Attendee
Additional Emails	
Created By	Samhitha M.C, 9/25/2025, 9:44 AM

Edit

Delete

Clone

SETUP

Classic Email Templates

Text Email Template

Welcome_to_Smart_Event

Preview your email template below.

Email Template Detail

Edit

Delete

Clone

Email Templates from Salesforce	Unfiled Public Classic Email Templates
Email Template Name	Welcome_to_Smart_Event
Template Unique Name	Welcome_to_Smart_Event
Encoding	Unicode (UTF-8)
Author	Samhitha M.C [Change]
Description	
Created By	Samhitha M.C, 9/25/2025, 9:37 AM

Edit

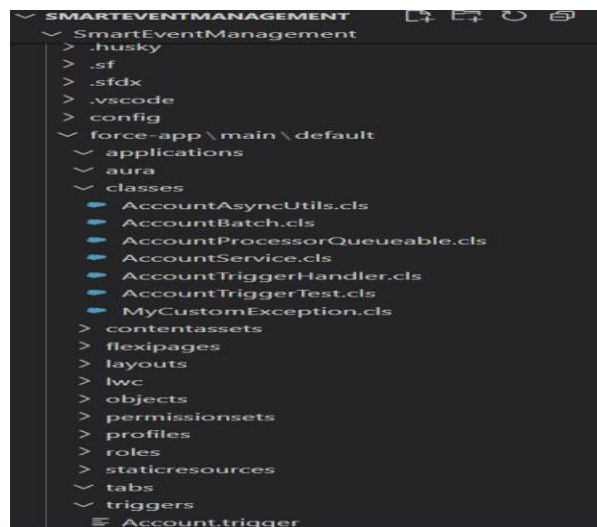
Delete

Clone

Phase 5: Apex Programming (Developer)

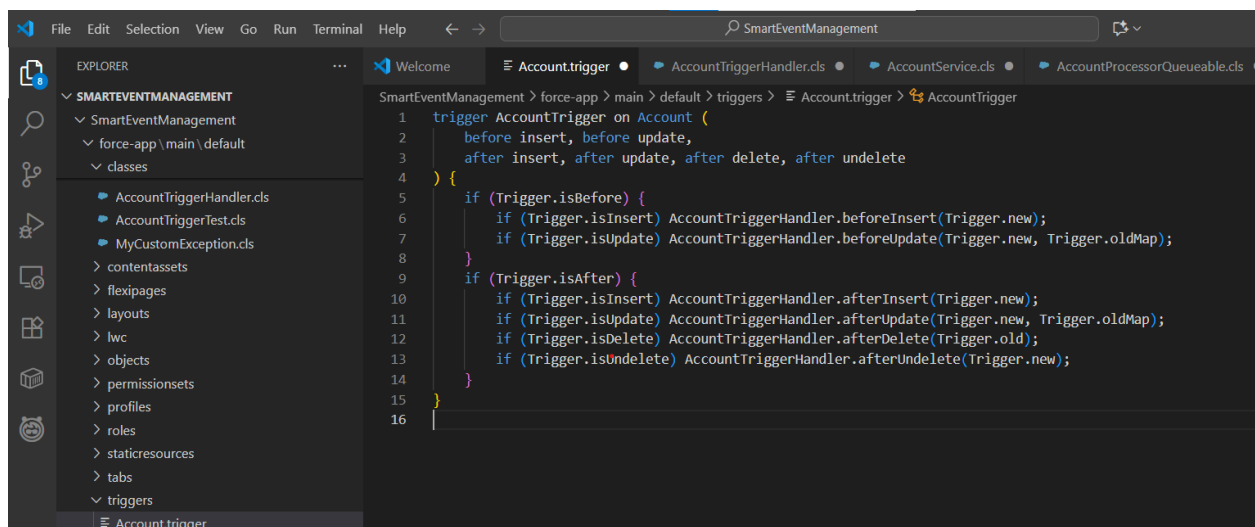
1. Classes and Objects

- A Class is a blueprint for an object. It defines variables (attributes) and methods (actions).
- AccountAsyncUtils.cls: Likely a utility class with helper methods, possibly for asynchronous operations.
- AccountBatch.cls: A Batch Apex class, a blueprint for a job object that processes large data sets.
- AccountProcessorQueueable.cls: A Queueable Apex class, a blueprint for an asynchronous job object.
- AccountService.cls: A service layer class that holds the main business logic for the Account object.
- AccountTriggerHandler.cls: The class that contains the bulkified logic for the Account trigger.
- AccountTriggerTest.cls: A test class (ends with Test.cls) used to verify the functionality of other Account-related classes.
- MyCustomException.cls: A blueprint for a custom error object that can be thrown and caught in your code.



In the context of Apex programming, an Object is an instance created from a class. These objects do not exist as files in your directory; they are created and used at runtime within the code

2. Apex Triggers (before/after insert/update/delete)



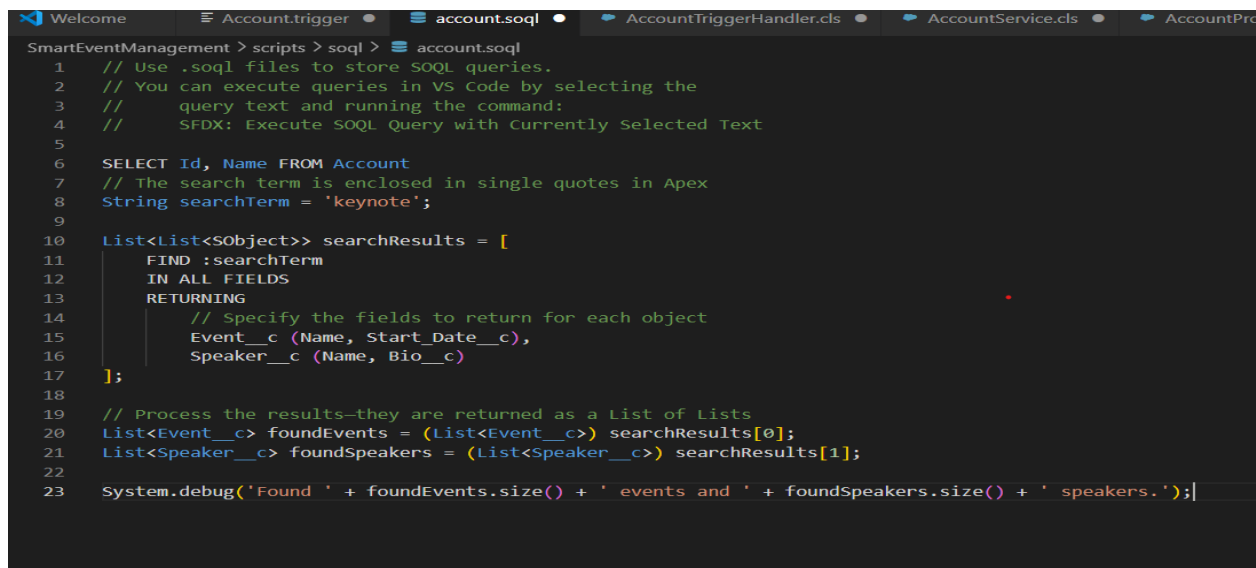
- Apex Triggers are code blocks that execute before or after a Data Manipulation Language (DML) event (insert, update, delete, undelete) occurs on a Salesforce object record.

3. Trigger Design Pattern

- A trigger framework or pattern is a way to structure your Apex code to make it scalable, maintainable

4. SOQL and SOSL

- SOQL (Salesforce Object Query Language): Used to retrieve records from a *single* object or multiple related objects based on criteria. It's similar to SELECT in SQL.
- SOSL (Salesforce Object Search Language): Used to search for text across *multiple* objects and fields simultaneously. It's better for text-based searches when you don't know the exact object.



```
1 // Use .soql files to store SOQL queries.
2 // You can execute queries in VS Code by selecting the
3 // query text and running the command:
4 // SFDX: Execute SOQL Query with Currently Selected Text
5
6 SELECT Id, Name FROM Account
7 // The search term is enclosed in single quotes in Apex
8 String searchTerm = 'keynote';
9
10 List<List<SObject>> searchResults = [
11     FIND :searchTerm
12     IN ALL FIELDS
13     RETURNING
14         // Specify the fields to return for each object
15         Event__c (Name, Start_Date__c),
16         Speaker__c (Name, Bio__c)
17 ];
18
19 // Process the results—they are returned as a List of Lists
20 List<Event__c> foundEvents = (List<Event__c>) searchResults[0];
21 List<Speaker__c> foundSpeakers = (List<Speaker__c>) searchResults[1];
22
23 System.debug('Found ' + foundEvents.size() + ' events and ' + foundSpeakers.size() + ' speakers.');
```

5. Collections: List, Set, Map

- Used a Set<String> in trigger handler to efficiently store keys.

6. Control Statement

- The trigger handler uses if statements to iterate and check the conditions.

7. Asynchronous Processing (Batch, Queueable, Future Methods)

- Scheduled Apex is a form of asynchronous processing. The use of Batch or Queueable Apex isn't explicitly mentioned as a required step, but they are often the next logical step if the logic within your scheduled job needs to process millions of records.

8. Exception Handling

- Using try, catch, and finally blocks to gracefully handle runtime errors (exceptions) without halting the entire transaction or showing a cryptic error message to the user.

9. Test Classes

```
@isTest
private class AccountTriggerTest {
    @isTest static void testBeforeInsertAndQueueableAndBatch() {
        // Create test data
        List<Account> accts = new List<Account>();
        for (Integer i=0; i<5; i++) {
            accts.add(new Account(Name = ' TestAcct ' + i + ' ')); // spaces to be trimmed
        }

        Test.startTest();
        insert accts; // triggers run, queueable enqueued
        // run batch within test context
        Database.executeBatch(new AccountBatch(), 100);
        Test.stopTest();

        // Collect inserted ids
        List<Id> ids = new List<Id>();
        for (Account a : accts) ids.add(a.Id);

        // Verify names were trimmed
        for (Account a : [SELECT Name, Description FROM Account WHERE Id IN :ids]) {
            System.assertEquals(a.Name, a.Name.trim(), 'Name should be trimmed by trigger/service');
            // Description should include 'processed' because queueable updated it during Test.stopTest()
            System.assert(a.Description != null && a.Description.contains('processed'), 'Queueable should have updated Description');
        }
    }
}
```