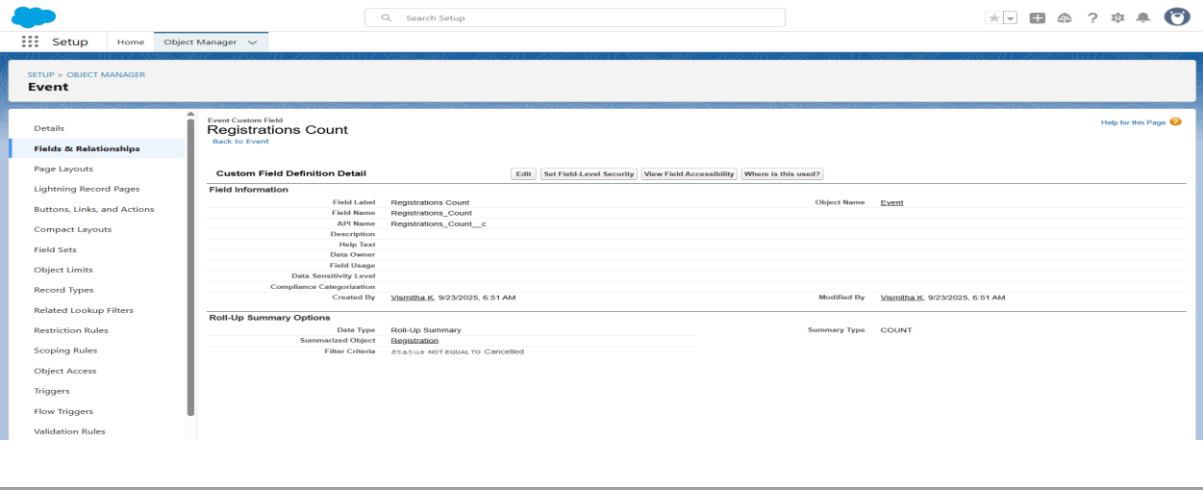# PHASE 3 – DATA MODELING & RELATIONSHIPS

1. Roll-Up Summary Fields

- On **Event__c**:

    - **Registrations Count** → Counts all child Registrations.

    - Used for capacity validation and reporting.

2. Validation Rules
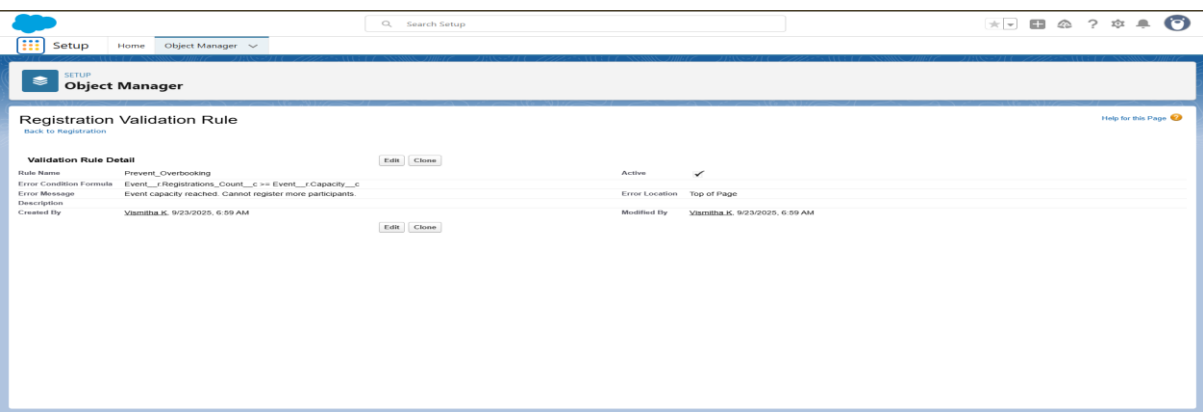
- **End Date Validation (Event__c):**

    Ensures the event end date cannot be earlier than the start date.

- **Prevent Overbooking (Registration__c):**

    - **Approach 1 – Validation Rule:**

        Simple rule that checks if Registrations_Count__c >= Capacity__c and blocks new registrations.

        Error: *"Event capacity reached. Cannot register more participants."*

3. Page Layouts & Record Types

- **Event Page Layout**: shows Event details + related Registrations and record types.

- **Registration Page Layout**: shows Participant, Event, Status and record types.

4. Compact Layouts (Mobile)

- **Event Compact Layout**: Event Name, Start Date, Venue, Status and selected this as primary in edit assignment.

- **Registration Compact Layout**: Registration ID, Participant, Status.
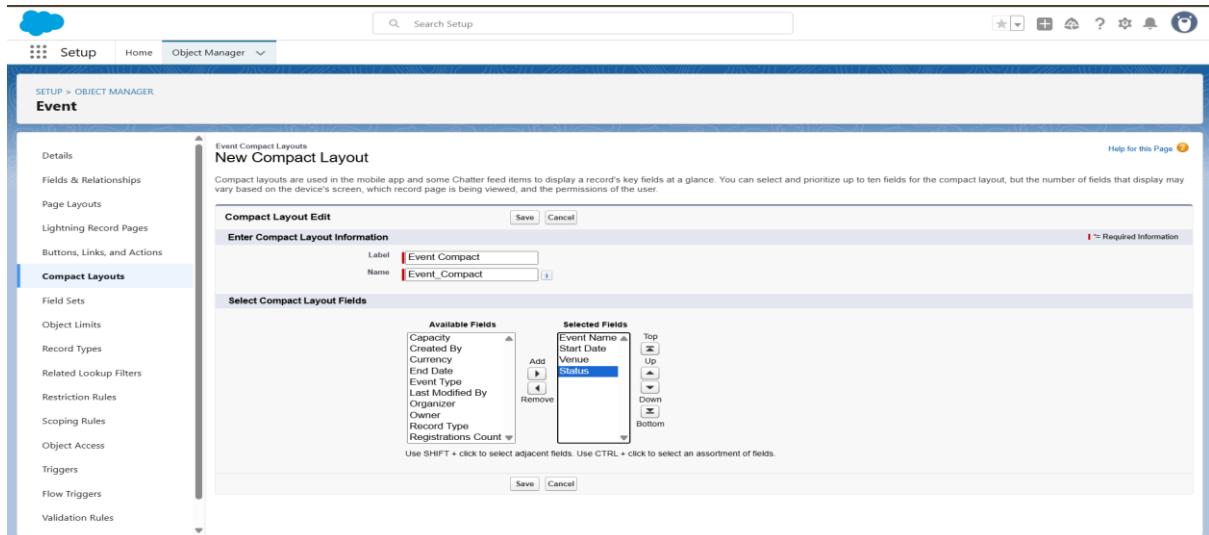
5. Schema Builder Visualization

- Created ER diagram of Event–Registration–Participant–Session.

- Ensures clarity of relationships for both admins and developers.
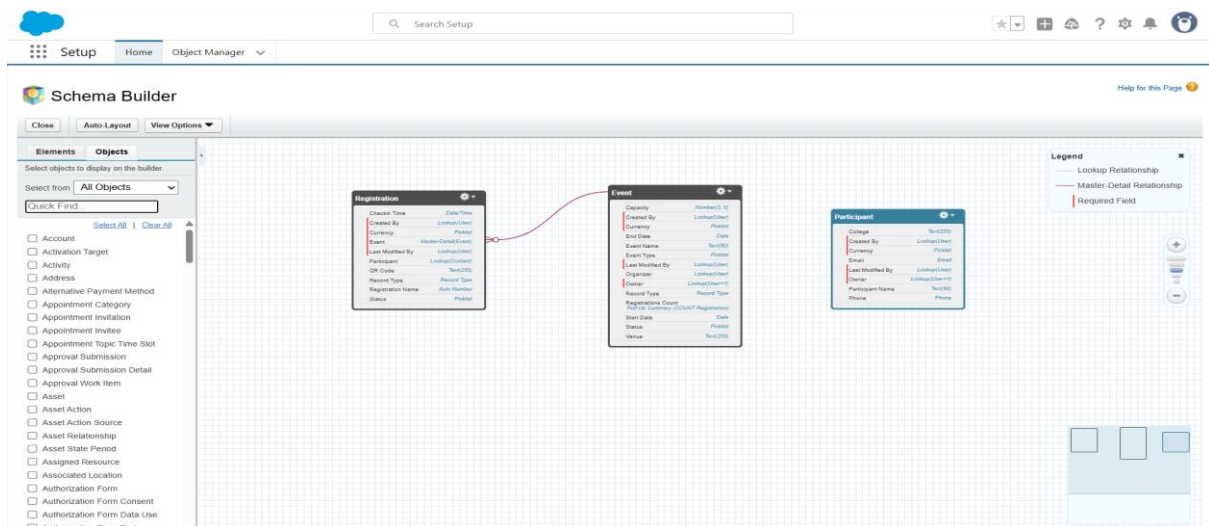
6. Tabs & App Navigation

- Created **Custom Tabs** for Event, Registration, and Session objects.

- Added them to the **Smart Event Management App** via App Manager.

- This ensures users can access and navigate to these records directly from the App Launcher.

7. Data Dictionary

Prepared a **data dictionary** to clearly describe all custom objects, fields, and relationships:

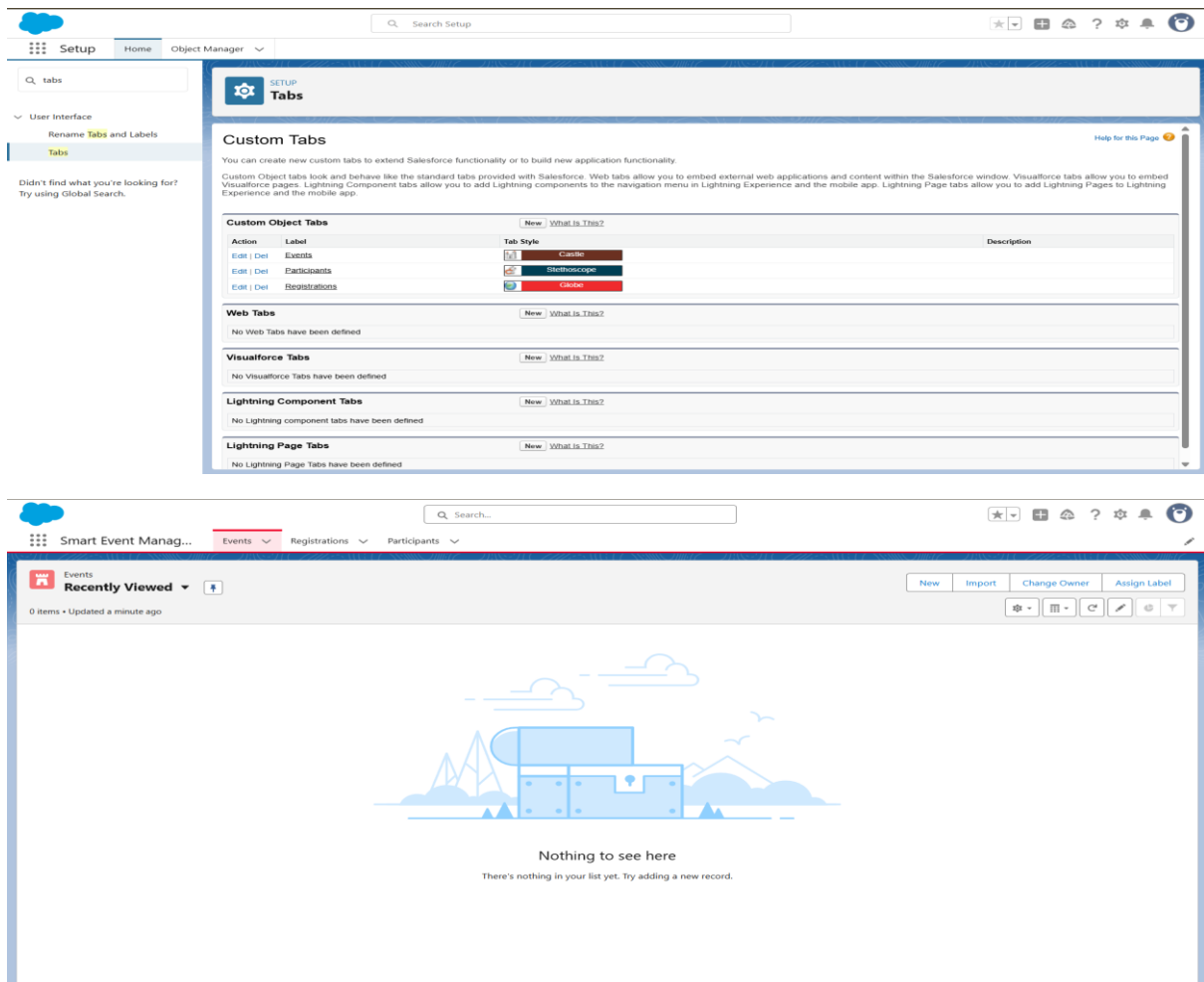|	A	B	C	D	E
1	**Object**	**Field Label**	**API Name**	**Type**	**Notes**
2	Event	Event Name	Name	Text	Record Name
3	Event	Start Date	Start_Date__c	Date	Event start
4	Event	End Date	End_Date__c	Date	Must be after Start Date
5	Event	Venue	Venue__c	Text(255)	Location of event
6	Event	Capacity	Capacity__c	Number(3,0)	Max participants
7	Event	Registrations Count	Registrations_Count__c	Roll-Up (COUNT)	Number of registrations
8	Registration	Registration No.	Name	AutoNumber	REG-{0000}
9	Registration	Event	Event__c	Master-Detail(Event)	Parent event
10	Registration	Participant	Participant__c	Lookup(Contact)	Linked participant
11	Registration	Status	Status__c	Picklist	Registered, CheckedIn, Cancelled, Waitlisted
12	Registration	QR Code	QR_Code__c	Text(100)	For check-in
13	Registration	Check-in Time	Checkin_Time__c	DateTime	Attendance log
14					
15					
16					
17					

8. Sample Data Preparation

Created sample CSV files to test imports.

Imported using **Data Import Wizard** to verify data loading.

9. Testing & Verification

- Created an **Event** with capacity = 3.

- Added 3 **Registrations** successfully.

- Attempted 4th registration: blocked by Validation Rule → error shown: *"Event capacity reached. Cannot register more participants."*

- Tested cancellation of a registration → count reduced → allowed new registration.

- Verified roll-up summary auto-updates.

- Confirmed End Date validation works (cannot set end date before start date).
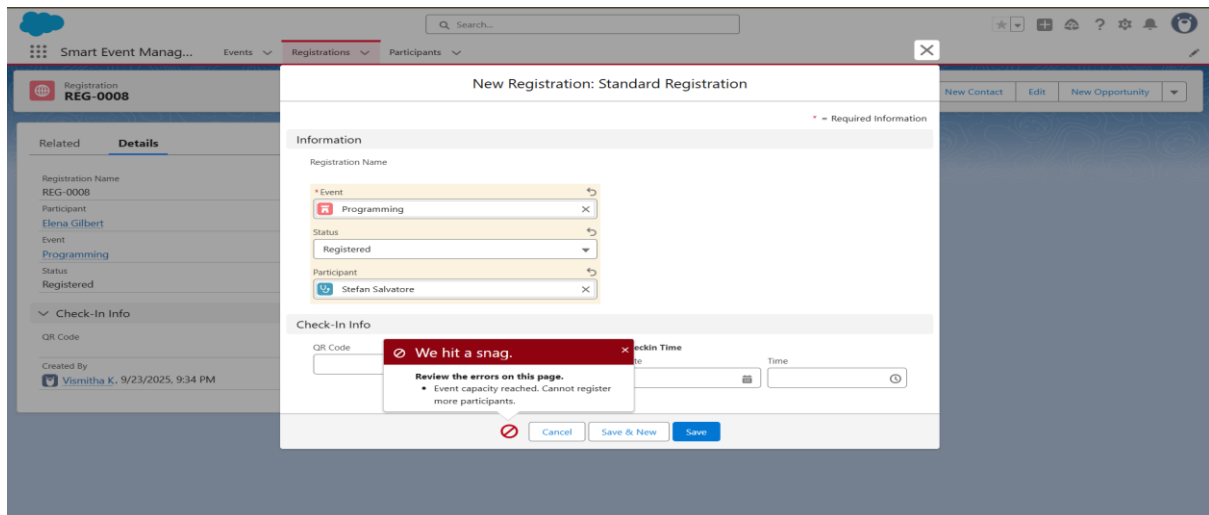
OUTCOME OF PHASE 3

- **Core Data Model** established with Events, Registrations, and Participants.

- **Relationships** (Master-Detail & Lookup) ensure data integrity and inheritance of visibility.

- **Roll-Up Summaries & Validation Rules** enforce logical constraints (capacity, date checks).

- **Tabs, Layouts, Schema Builder** provide usability and visualization.

- **Test Data & Import** verified that the system works as designed.

- The project is now ready for **Phase 4: Process Automation**, where workflows, approvals, and Flows will be added.