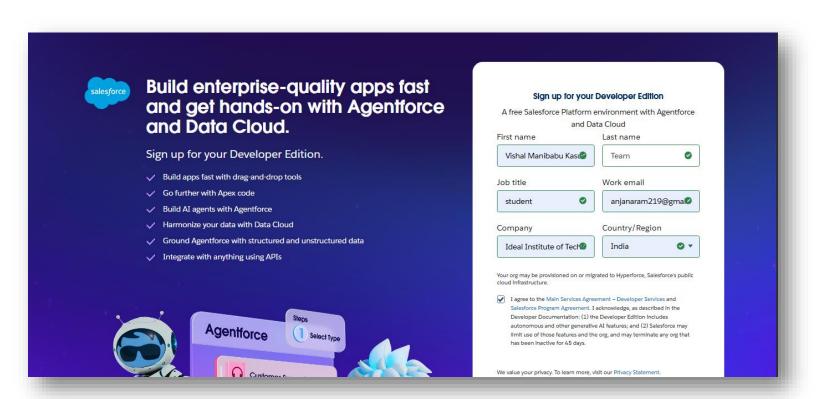
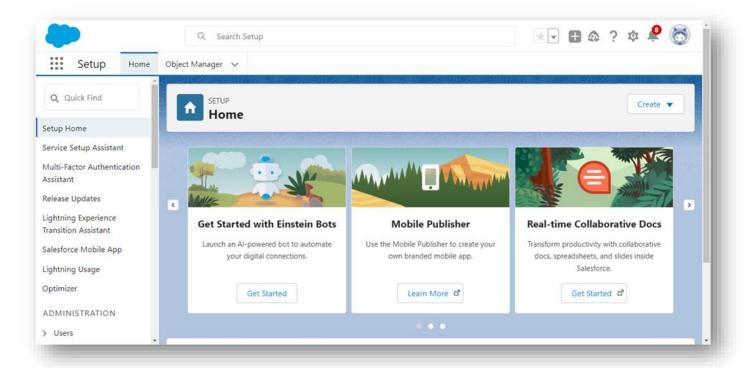
# PROJECT DEVELOPMENT PHASE

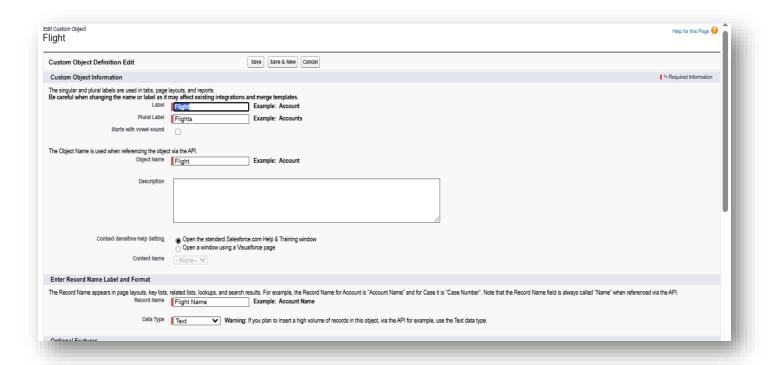
Date	2-06-2025
Team Id	LTVIP2025TMID31533
Project Name	AirLine Management System
College Name	Ideal Institute Of Technology

### 1.Created developer org and explored platform features

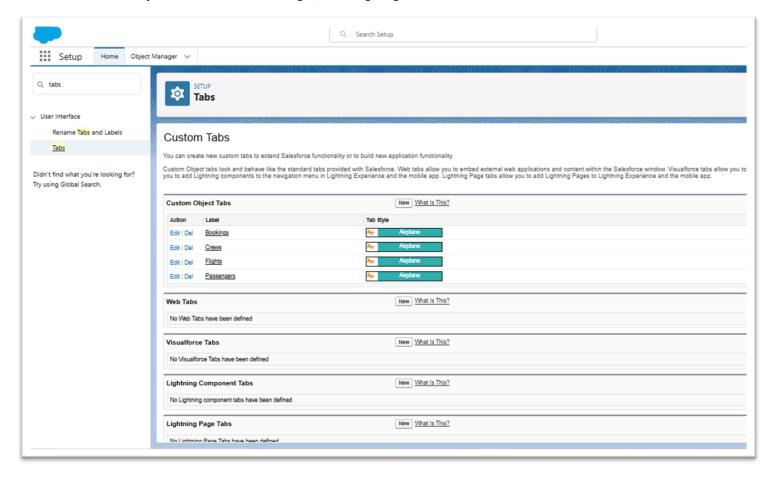




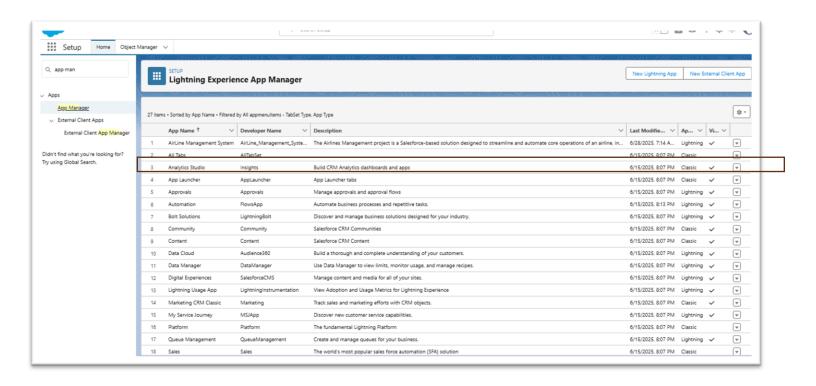
### 2.Created flight object



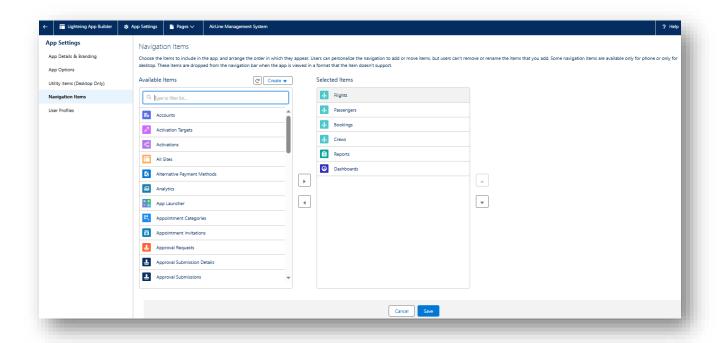
#### 3.Created core objects and tabs for Passenger, Booking, Flight, and Crew.



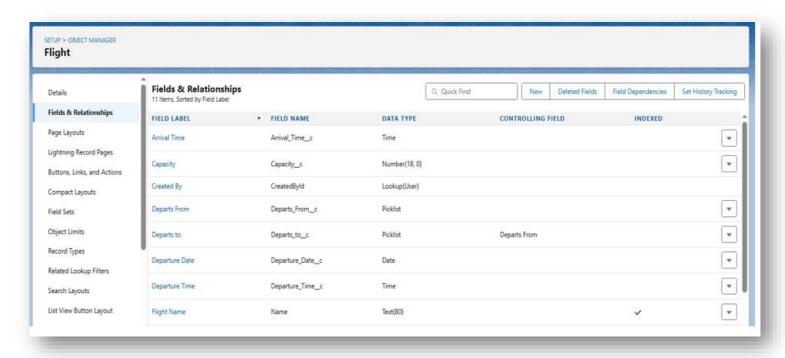
#### 4.Developed a Lightning App to manage Passenger, Booking, Flight, and Crew modules from a single interface



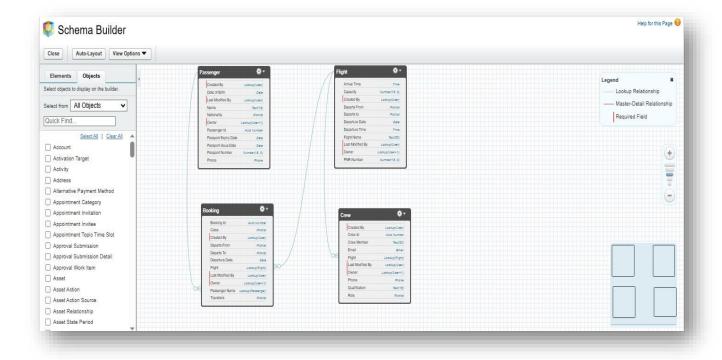
5.Created the 'Airline Management System' Lightning App with navigation tabs for Passenger, Booking, Flight, and Crew



6.Added custom fields, picklists, lookup relationships, and field dependencies to support data integrity and user input control

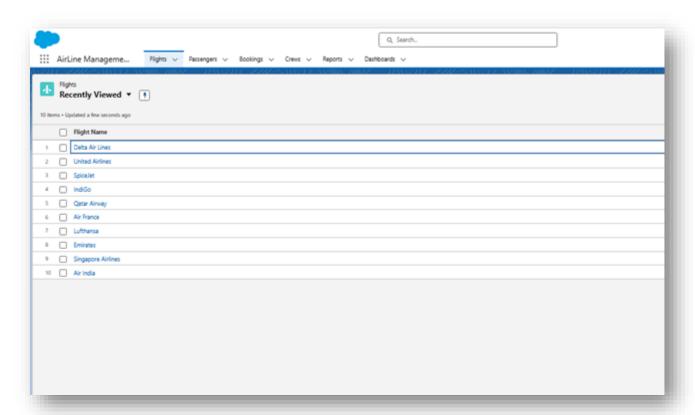


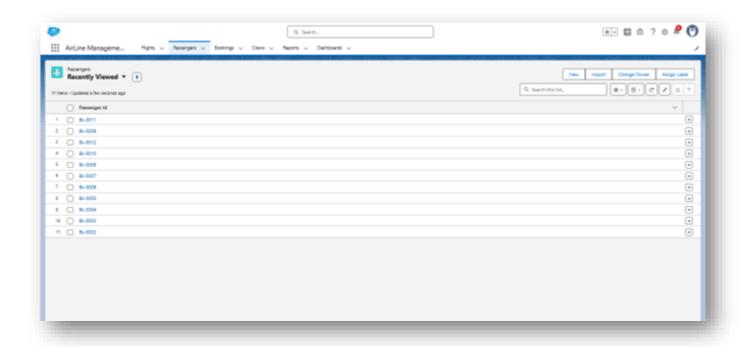
#### 7. Used Salesforce Schema Builder to visualize and verify object relationships

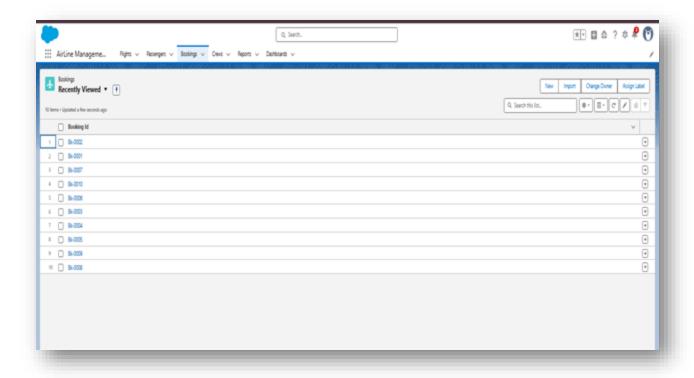


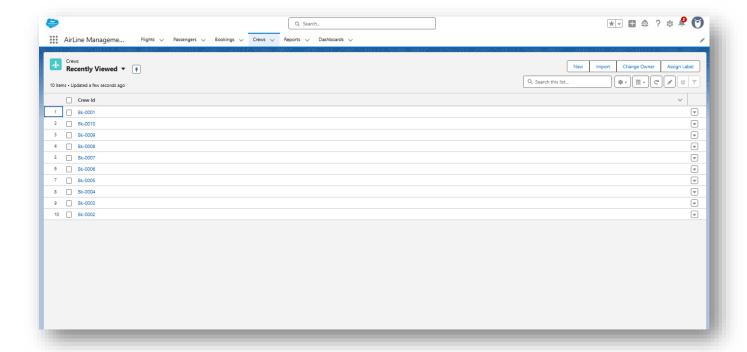
#### 8.Created 10 sample records for each object using the Salesforce Lightning interface flights,

#### passengers, bookings, crews

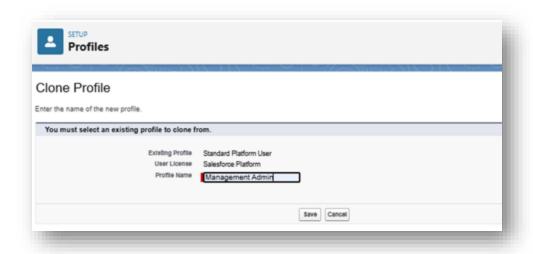


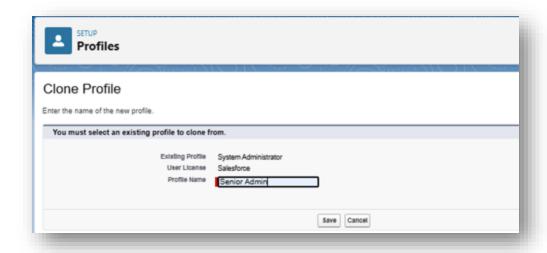


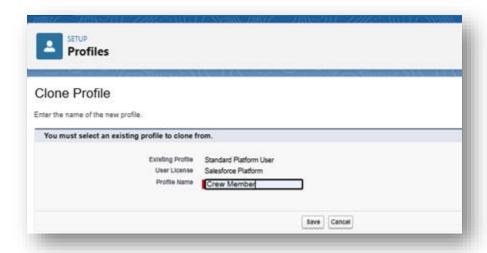




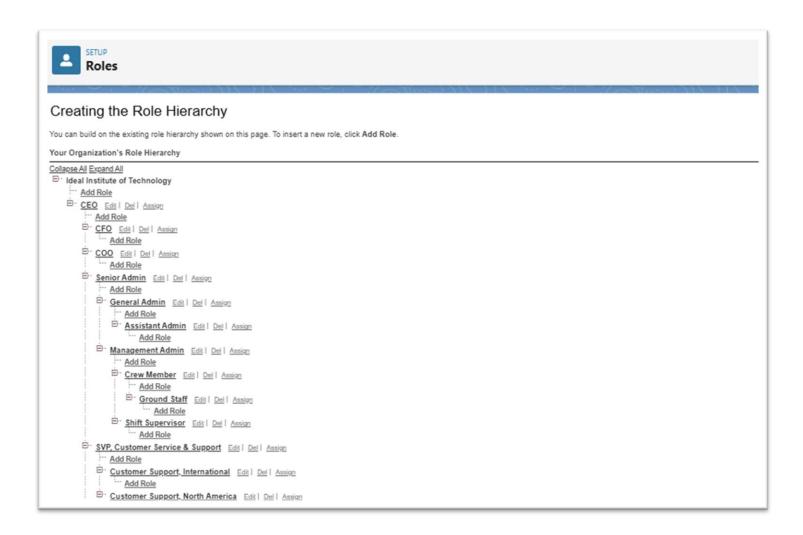
9. Configured user profiles with appropriate object permissions and field-level security.

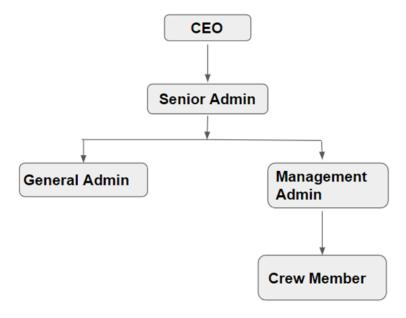






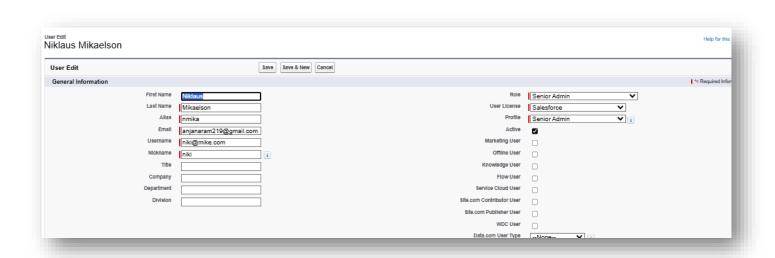
10.Set up role hierarchy to define data access levels based on user roles within the organization

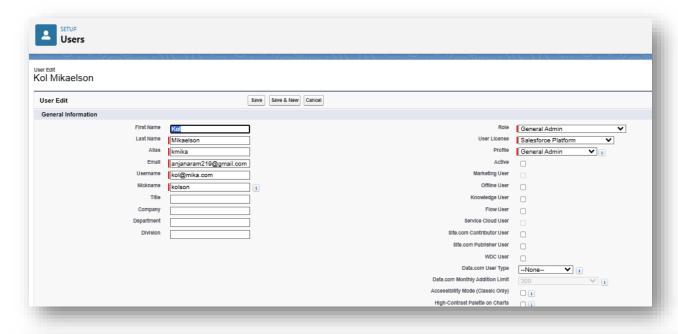


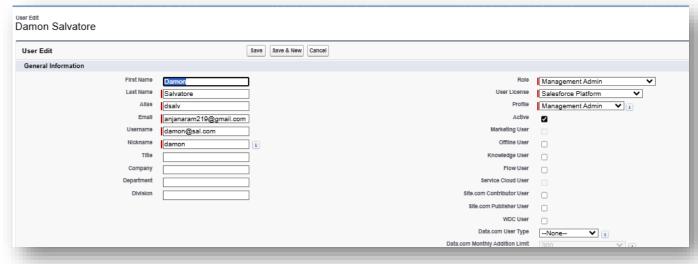


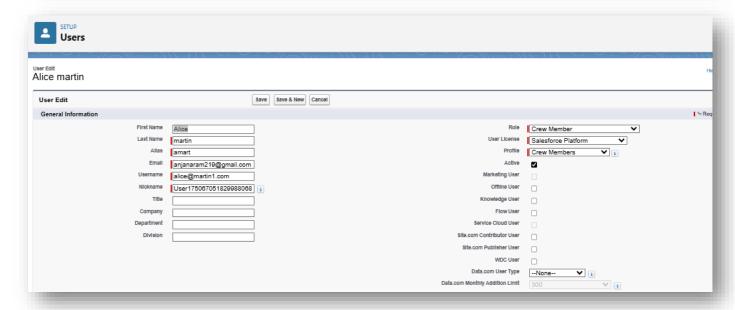
Role Hierarchy: The above diagram represents which role reports to which one.

### 11.Created and managed users by assigning appropriate roles and profiles

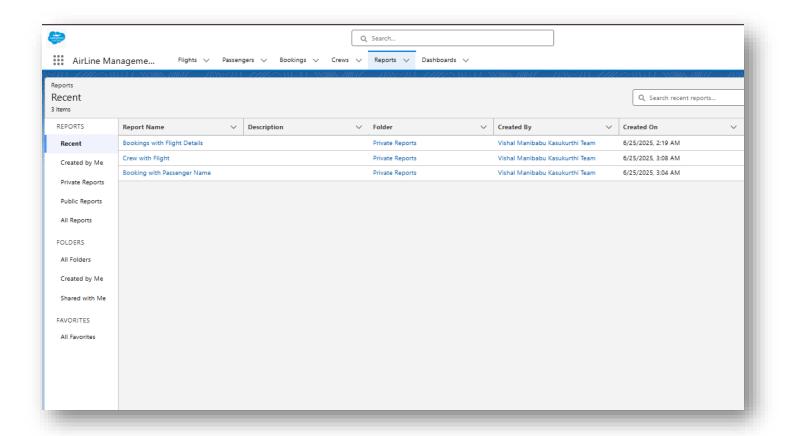




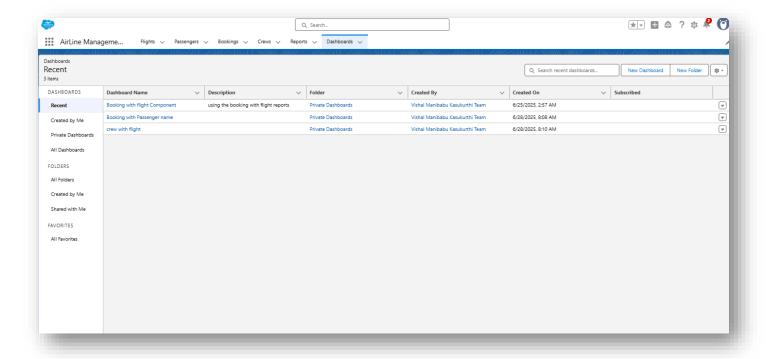


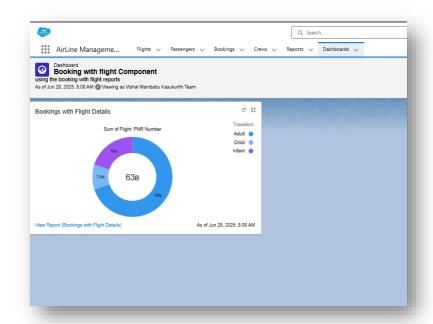


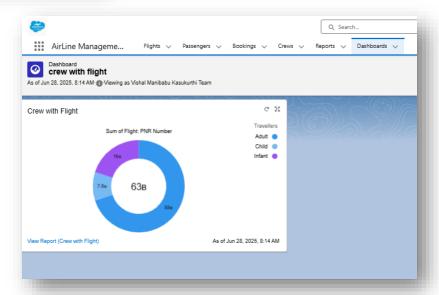
12.Created custom reports to track flight bookings, passenger details, and crew assignments.

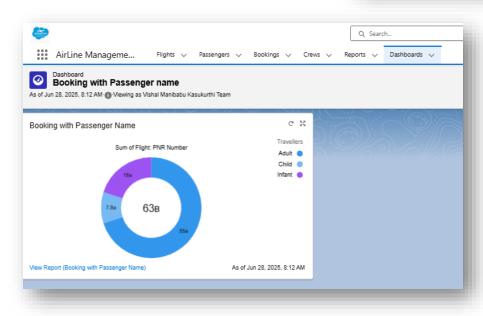


### 13. Developed visual dashboards (e.g., class-wise bookings







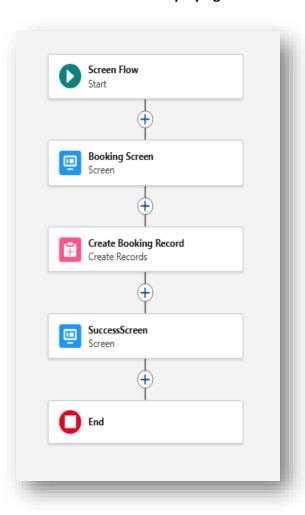


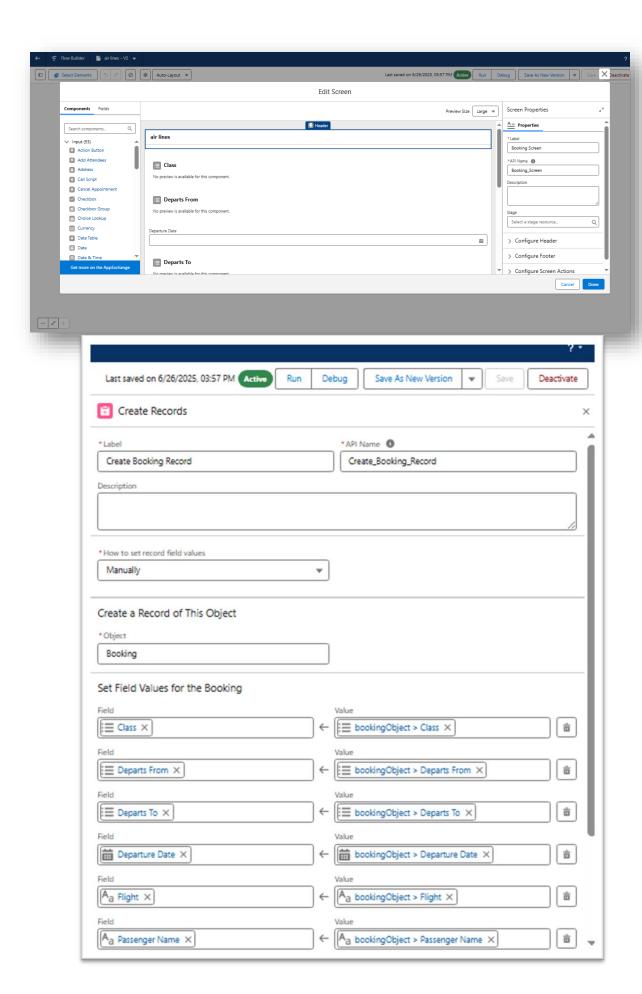
14. Developed Apex class, trigger, and test class to validate Passenger phone input during record creation

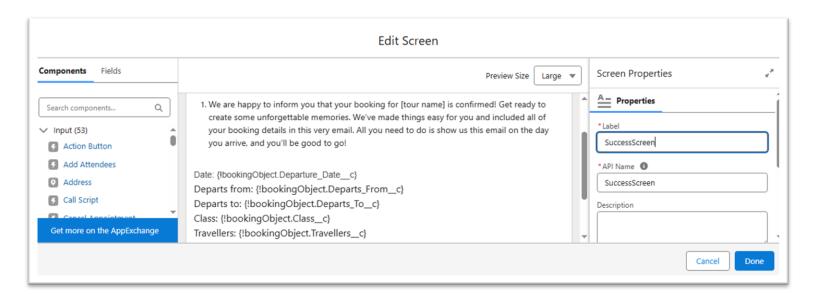
```
Developer Console - Google Chrome
orgfarm-70f4b778af-dev-ed.develop.my.salesforce.com/_ui/common/apex/debug/ApexCSIPage
File • Edit • Debug • Test • Workspace • Help • < >
PhnValid_PassengerObj.apxc 🗵
 Code Coverage: None ▼ API Version: 64 ▼
  1 ▼ public class PhnValid PassengerObj {
          public static void valMethod(List<Passenger__c> newPass){
  2 ▼
 3 ▼
               for(Passenger__c p:newPass){
  4 ▼
                    if(p.Phone c==null){
                    p.Phone__c.addError('please Enter phone Number');
  5
  6
  7
               }
  8
          }
  9 }
```

```
PhnValid_TestClass.apxc 🗵
 Code Coverage: None ▼ API Version: 64 ▼
     @isTest
 2 * public class PhnValid TestClass {
 3
          @isTest
 4 *
          public static void testClass(){
              list <Passenger__c> varlis = new list<Passenger__c>();
 5
 6
              Passenger__c var = new Passenger__c();
              var.Phone c = null;
 7
              varlis.add(var);
 8
              insert varlis;
 9
              PhnValid PassengerObj.valMethod(varlis);
 10
 11
          }
 12
```

15. Built a Booking Flow with a confirmation screen displaying a success message upon completion







### **PROJECT EXECUTABLE FILES**

In the development of the Airlines Management System, Salesforce's low-code platform was enhanced using **Apex programming** to implement custom validations and business logic.

These executable files represent the backend logic that enforces data integrity and automates specific actions within the system

The following components were developed as part of the executable logic:

- **Apex Class**: Contains reusable methods that enforce custom validation rules on the **Passenger** object.
- **Apex Trigger**: Automatically calls the validation method before a Passenger record is inserted, ensuring mandatory fields are checked.
- **Apex Test Class**: Validates the logic through unit testing, ensuring that the trigger behaves correctly and achieves over 75% code coverage—a Salesforce deployment requirement

### 1.1 Apex Class: PhnValid\_PassengerObj.cls

```
public class PhnValid_PassengerObj {
   public static void valMethod(List<Passenger__c> newPass) {
     for (Passenger__c p : newPass) {
        if (p.Phone__c == null) {
            p.Phone__c.addError('Please enter phone number');
        }
    }
}
```

### 1.2 Apex Trigger: PhnValidTrigger

```
trigger PhnValidTrigger on Passenger__c (before insert) {
   if (Trigger.isBefore && Trigger.isInsert) {
      PhnValid_PassengerObj.valMethod(Trigger.new);
}
```

```
}
```

### 1.3 Apex Test Class: PhnValid\_TestClass

```
@isTest
public class PhnValid_TestClass {
    @isTest
    public static void testClass() {
        List<Passenger__c> varlis = new List<Passenger__c>();
        Passenger__c var = new Passenger__c();
        var.Phone__c = null;
        varlis.add(var);
        insert varlis;
        PhnValid_PassengerObj.valMethod(varlis);
    }
}
```

## 2. DATASET

### 2.1 Dataset Creation

To validate and test the Airline Management System, **sample datasets** were manually created for each key custom object. A minimum of **10 records** were entered for the following Salesforce custom objects:

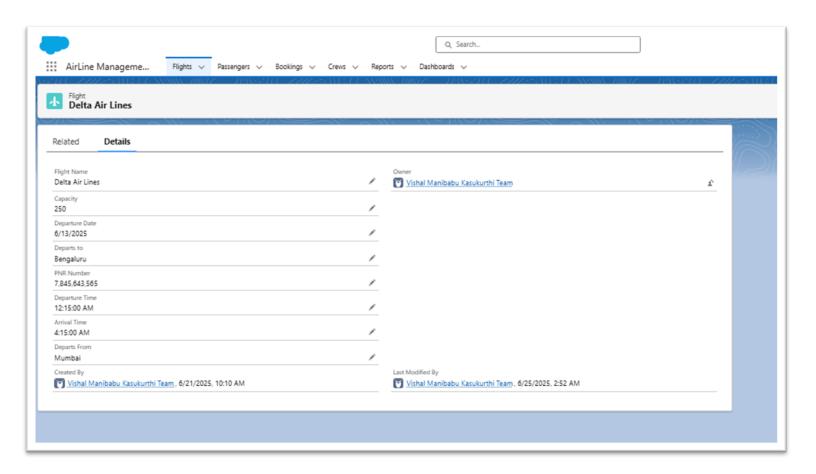
- → Flight
- 🔓 Passenger
- **I** Booking
- R Crew

### 2.1.1 → Flight Object Dataset

To simulate real-world airline operations, 10 sample flight records were created in the **Salesforce Lightning App**. Each record includes critical information such as:

- Flight Name
- Departs From (Origin)
- Departs To (Destination)
- Capacity
- PNR Number
- Departure Time
- Arrival Time

These records help model realistic scheduling, route management, and passenger planning scenarios within the system.



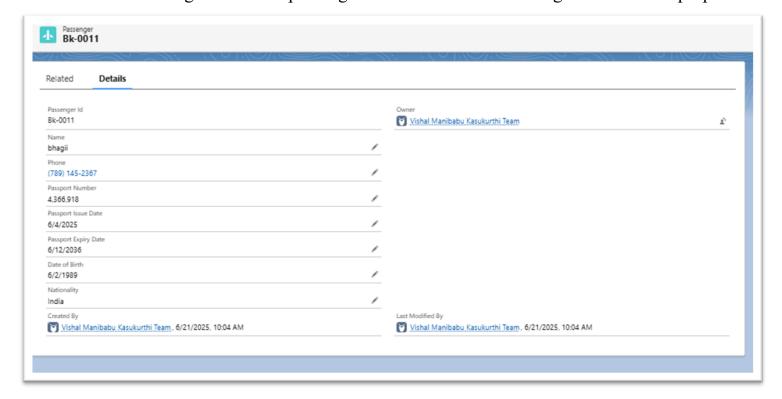
### 2.1.2 Passenger

## **Passenger Records Creation**

A total of **10 Passenger records** were created within the **Airlines Management System** to represent various travelers booking flights through the platform. Each record includes essential personal and travel-related information such as:

- Passenger Name
- Phone Number
- Passport Details
  - o Passport Number
  - Issue Date
  - Expiry Date
- Date of Birth
- Nationality (selected from a predefined picklist)

These records were created via the **Passenger** tab in the **Salesforce Lightning App**, allowing for realistic passenger data simulation for testing and validation purposes.



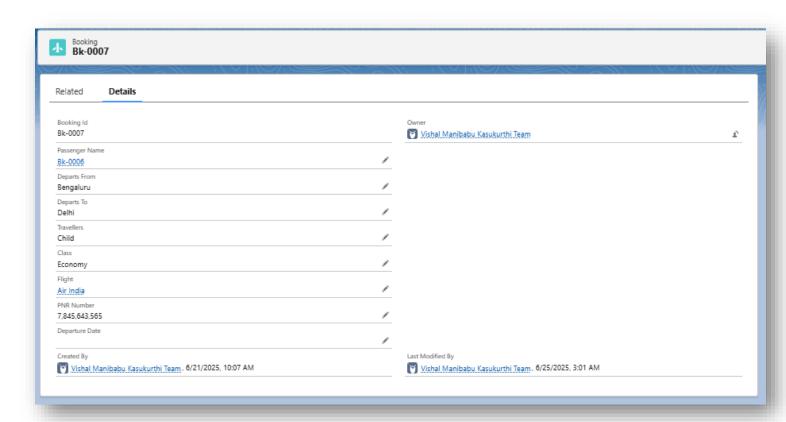
# **2.1.3 Booking**

Booking Records Creation

A total of 10 Booking records were created to simulate real-time flight reservation scenarios within the Airline Management System. Each booking represents a passenger reserving a seat on a scheduled flight.

Each Booking record includes the following key details:

- Booking ID
- Passenger Name
- Flight Name
- Booking Date
- Seat Number
- Booking Status
- Payment Status



These entries were created using the Booking tab in the Salesforce Lightning App, enabling end-to-end testing of flight reservation workflows and data integrity across related objects.

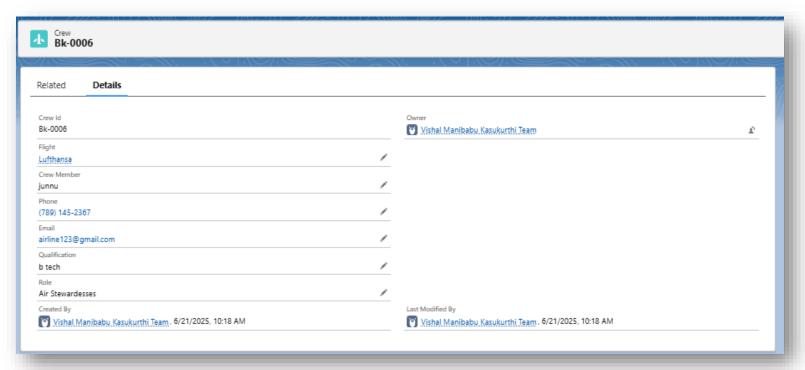
### 2.1.4. Crew

### **Crew Records Creation**

A total of 10 Crew records were created in the Airline Management System to represent the personnel responsible for flight operations. These records include pilots, co-pilots, and flight attendants assigned to various flights.

Each Crew record captures the following essential details:

- Crew Member Name
- Role (e.g., Pilot, Co-Pilot, Flight Attendant from a picklist)
- Employee ID
- Phone Number
- Email Address
- Assigned Flight (linked from the Flight object)
- License/Certification Number
- Availability Status (e.g., Available, On Duty, Off Duty from a picklist)



### **OVERVIEW**

This Airline Management System (AMS) project is built on the **Salesforce platform** and integrates both backend logic and frontend visualization to deliver a complete airline operations solution.

#### It includes:

- Apex Classes, Triggers, and Test Classes to implement core business logic, automate processes, and ensure robust data validation.
- Dashboard Reports and Analytics to monitor operations in real-time with visual insights into bookings, flights, and crew allocations.
- **Sample Datasets** for key custom objects *Passenger*, *Flight*, *Booking*, and *Crew* created to simulate real-world airline scenarios and support testing.
- **Quiput Screenshots** from the Salesforce Org, showcasing:
  - Successful record creation and execution
  - o Custom error handling via validations and triggers
  - The custom Lightning App interface
  - Report views and charts

This project demonstrates the seamless integration of **business logic**, **automation**, and **visual reporting** using Salesforce Lightning Experience, making it a scalable and user-friendly airline management solution.