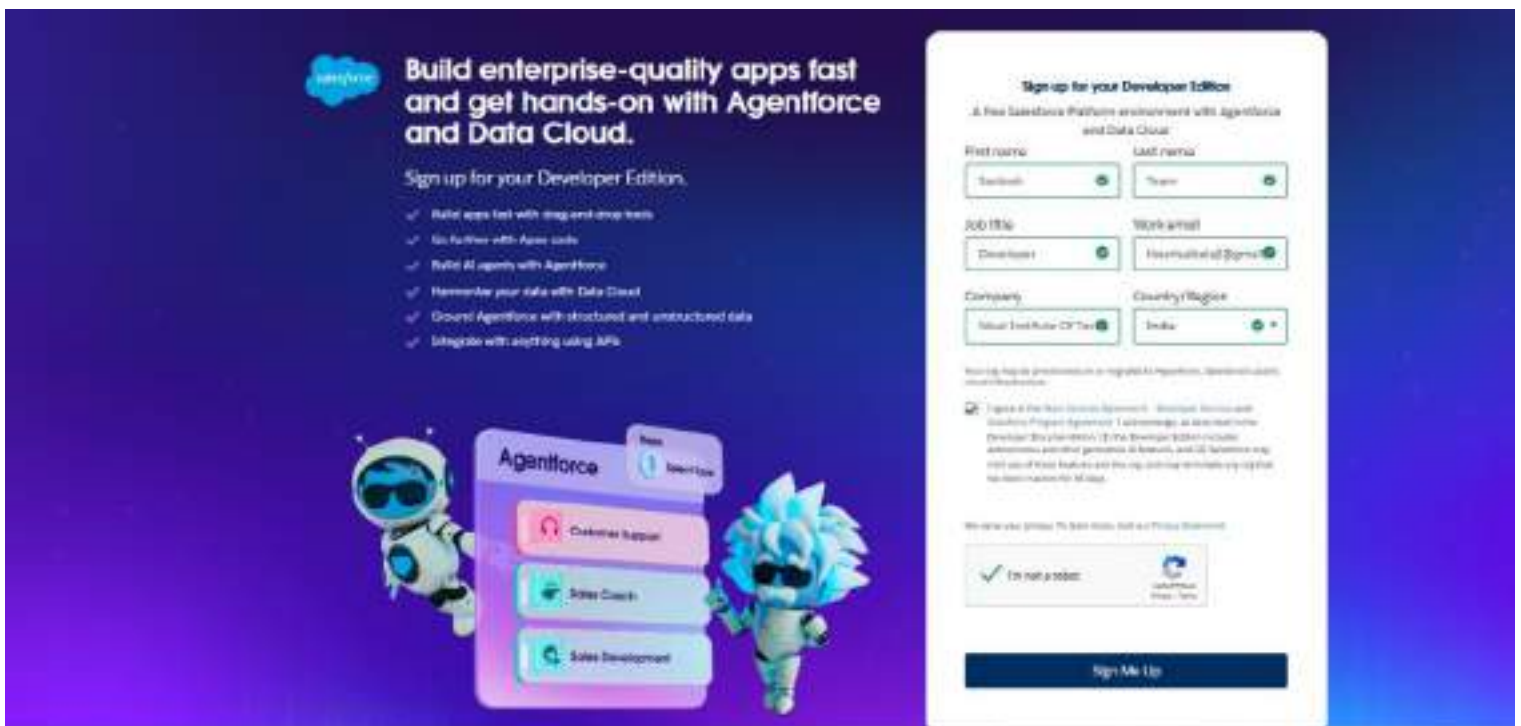


# PROJECT DEVELOPMENT PHASE

Date	25-06-2025
Team Id	LTVIP2025TMID29760
Project Name	AirLine Management System
College Name	Ideal Institute Of Technology

🛠️ Created developer org and explored platform features



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Job title:  Work email:

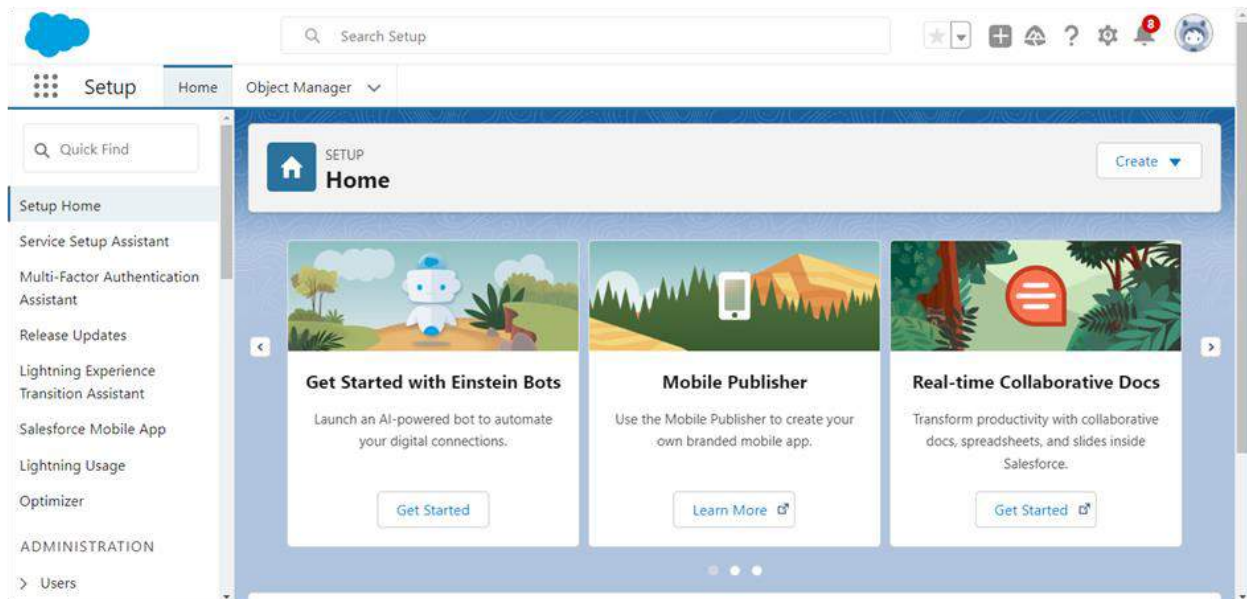
Country:  Country/Region:

By signing up, you agree to our Terms of Service and Privacy Policy. You will receive a confirmation email from Salesforce.

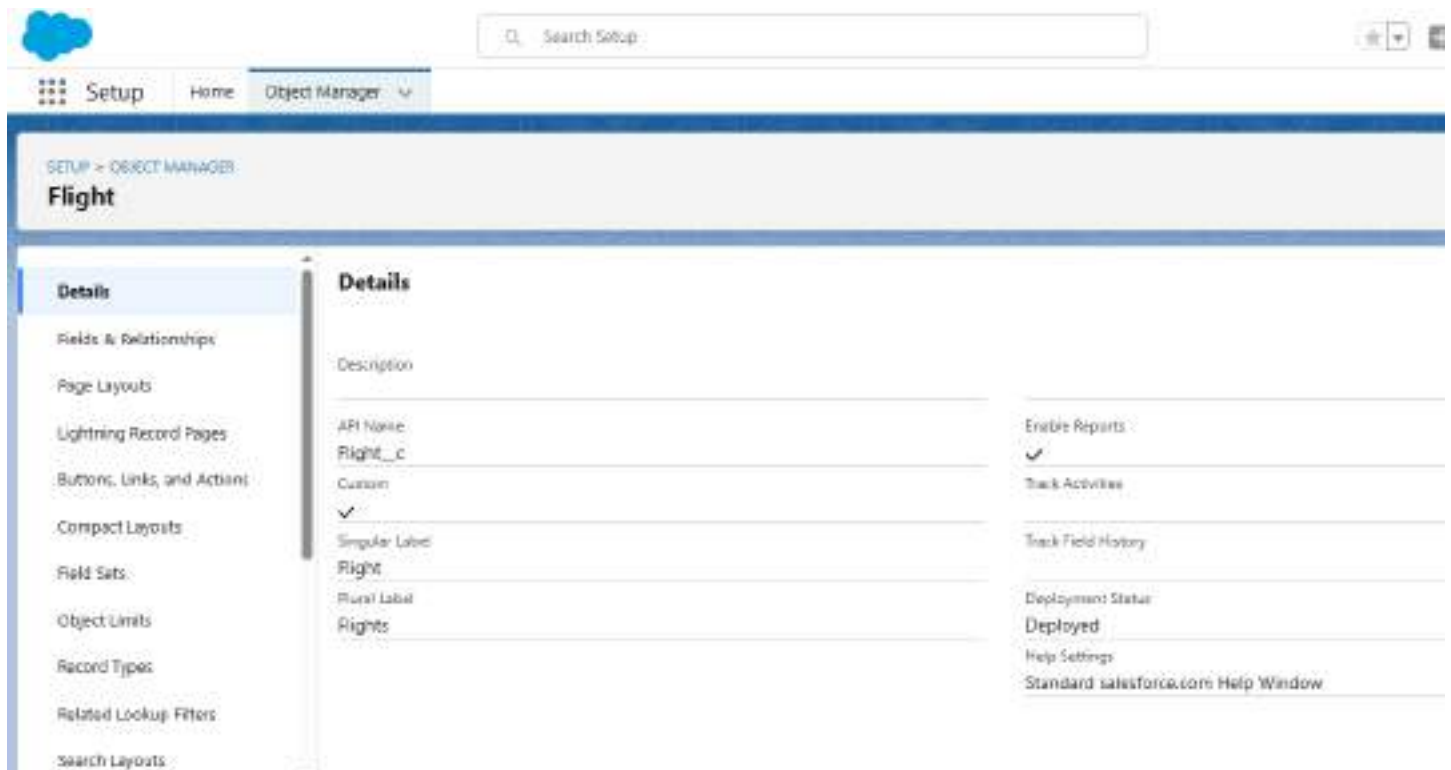
☒ I agree to the Terms of Service Agreement. I understand that this Developer Edition is for development purposes only and is not intended for production use. I understand that this Developer Edition is not a substitute for a production environment and that I will need to purchase a production license to use this software in a production environment.

☒ I'm not a robot

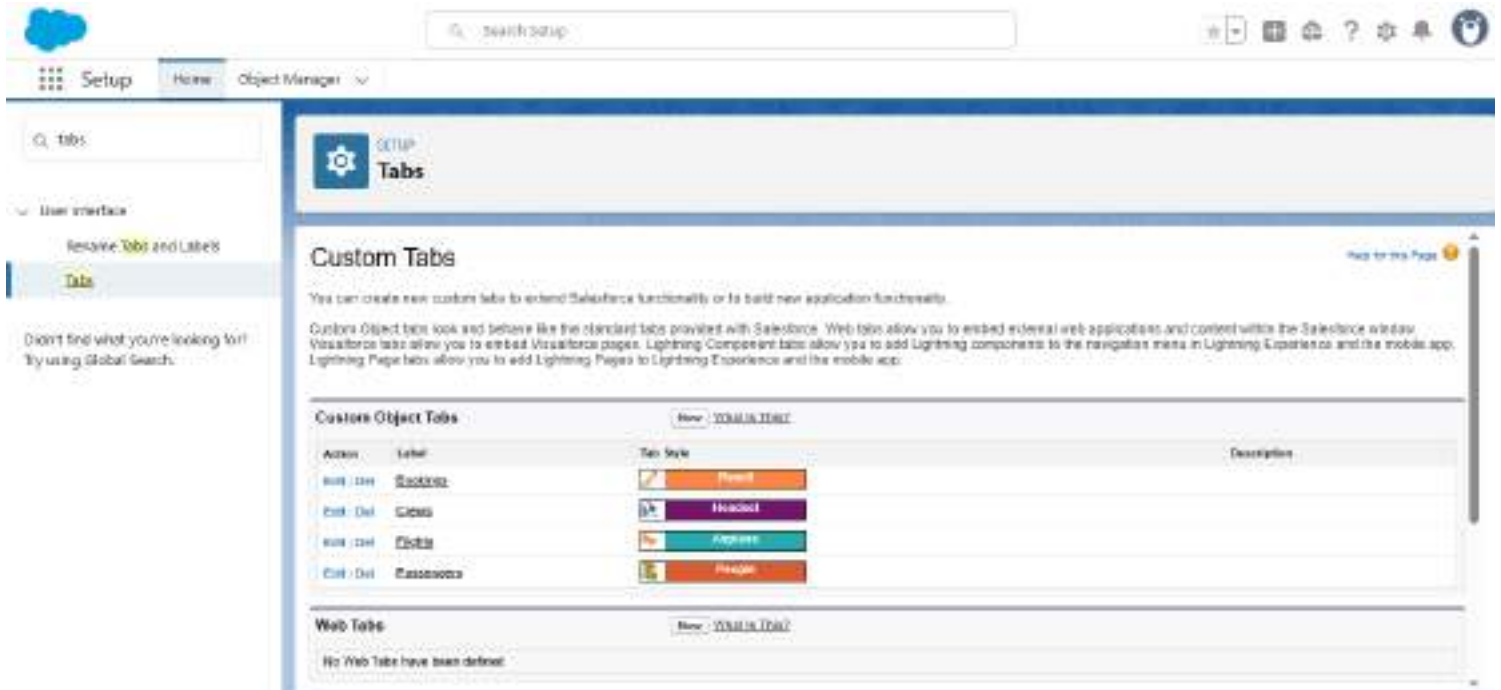
**Sign Me Up**



## Object and tab creation



## Designed core objects: Passenger, Booking, Flight, Crew



The screenshot shows the Salesforce Setup interface for the 'Custom Tabs' section. The left sidebar contains a search bar with 'tabs' entered, and a list of items including 'Use Interface', 'Recent Tabs and Labels', and 'Tabs'. The main content area is titled 'Custom Tabs' and includes a 'New' button with a dropdown menu. Below this, there are two sections: 'Custom Object Tabs' and 'Web Tabs'. The 'Custom Object Tabs' section contains a table with four rows, each representing a different tab style: 'Flashed', 'Hatched', 'Apparel', and 'Rampage'. The 'Web Tabs' section indicates that no web tabs have been defined.

**Custom Tabs**

You can create new custom tabs to extend Salesforce functionality or to build new application functionality.

Custom Object tabs look and behave like the standard tabs provided with Salesforce. Web tabs allow you to embed external web applications and content within the Salesforce window. Visualforce tabs allow you to embed Visualforce pages. Lightning Component tabs allow you to add Lightning components to the navigation menu in Lightning Experience and the mobile app. Lightning Page tabs allow you to add Lightning Pages to Lightning Experience and the mobile app.

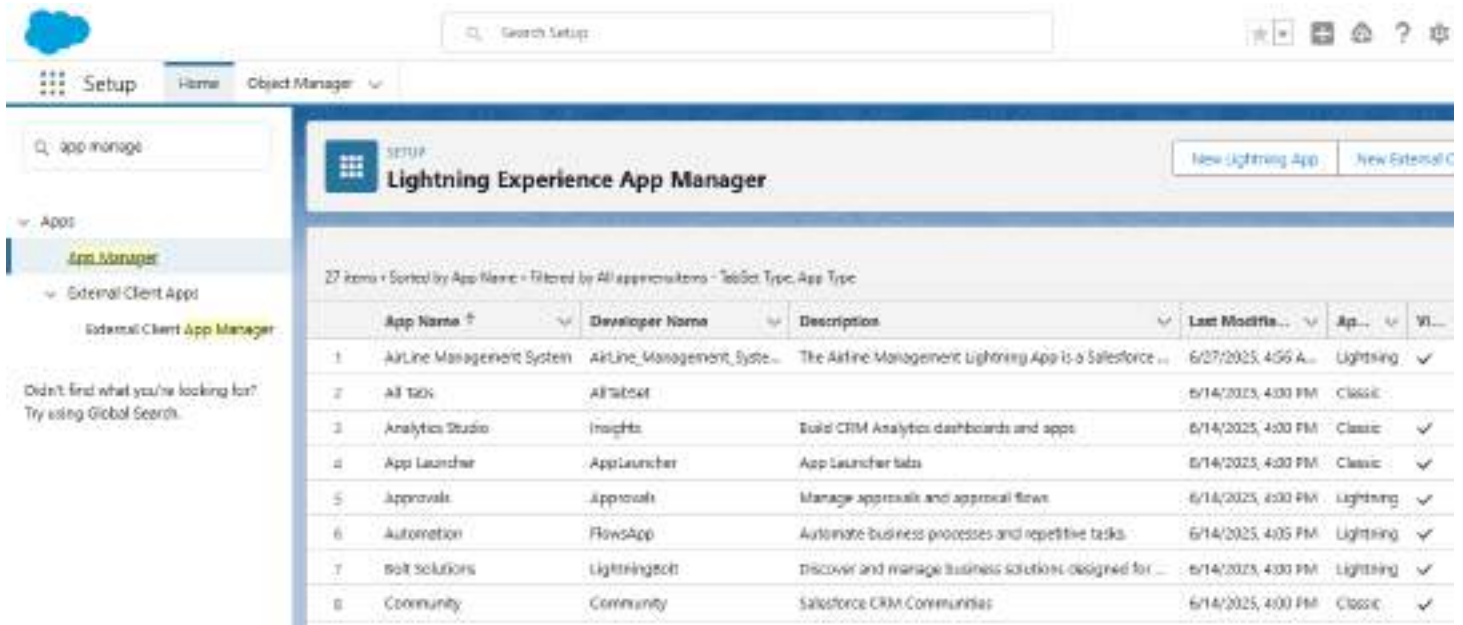
**Custom Object Tabs** [New > Visualforce Tab](#)

Action	Label	Tab Style	Description
<a href="#">Edit</a> <a href="#">Del</a>	Flashed		
<a href="#">Edit</a> <a href="#">Del</a>	Hatched		
<a href="#">Edit</a> <a href="#">Del</a>	Apparel		
<a href="#">Edit</a> <a href="#">Del</a>	Rampage		

**Web Tabs** [New > Visualforce Tab](#)

No Web Tabs have been defined.

## ⚡ Lightning App Development



The screenshot shows the Salesforce Lightning Experience App Manager. The left sidebar contains a search bar with 'app manage' entered, and a list of items including 'App Manager' and 'External Client App Manager'. The main content area is titled 'Lightning Experience App Manager' and includes a 'New Lightning App' button. Below this, there is a table listing various apps, including 'AirLine Management System', 'All Tabs', 'Analytics Studio', 'App Launcher', 'Approvals', 'Automation', 'Bolt Solutions', and 'Community'.

**Lightning Experience App Manager** [New Lightning App](#) [New External Client App](#)

27 items • Sorted by App Name • Filtered by All applications • TabSet Type, App Type

	App Name ↑	Developer Name	Description	Last Modified	App Type	Visible
1	AirLine Management System	AirLine Management, System	The Airline Management Lightning App is a Salesforce Lightning App that provides a central location for managing airline operations.	6/27/2025, 4:55 AM	Lightning	✓
2	All Tabs	All Tabs		6/14/2025, 4:00 PM	Classic	✓
3	Analytics Studio	Insights	Build CRM Analytics dashboards and apps	6/14/2025, 4:00 PM	Classic	✓
4	App Launcher	App Launcher	App Launcher tabs	6/14/2025, 4:00 PM	Classic	✓
5	Approvals	Approvals	Manage approvals and approval flows	6/14/2025, 4:00 PM	Lightning	✓
6	Automation	FlowsApp	Automate business processes and repetitive tasks	6/14/2025, 4:00 PM	Lightning	✓
7	Bolt Solutions	LightningBolt	Discover and manage business solutions designed for Salesforce	6/14/2025, 4:00 PM	Lightning	✓
8	Community	Community	Salesforce CRM Communities	6/14/2025, 4:00 PM	Classic	✓

⚡ Created “Airline Management System” app with navigation tabs

## Navigation Items

Choose the items to include in the app, and arrange the order in which they appear. Users can personalize the navigation to add or move items, but users can't remove or rename the items that you add. Some navigation items are available only for phone or only for desktop. These items are dropped from the navigation bar when the app is viewed in a format that the item doesn't support.

Available

Search Setup

Setup Home Object Manager

Flight

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

Fields & Relationships  
11 Items, Sorted by Field Label

Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Arrival Time	Arrival_Time__c	Time		
Capacity	Capacity__c	Number(18, 0)		
Created By	CreatedBy	Lookup(User)		
Departs From	Departs_From__c	Picklist		
Departs to	Departs_to__c	Picklist	Departs From	
Departure Date	Departure_Date__c	Date		
Departure Time	Departure_Time__c	Time		
Flight Name	Name	Text(80)		✓

✚ Added custom fields, picklists, lookup relationships & field dependencies

SETUP > OBJECT MANAGER

Flight

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

Fields & Relationships  
11 Items, Sorted by Field Label

Quick Find New Deleted Fields Field Dependencies Set History Tracking

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Arrival Time	Arrival_Time__c	Time		
Capacity	Capacity__c	Number(18, 0)		
Created By	CreatedBy	Lookup(User)		
Departs From	Departs_From__c	Picklist		
Departs to	Departs_to__c	Picklist	Departs From	
Departure Date	Departure_Date__c	Date		
Departure Time	Departure_Time__c	Time		
Flight Name	Name	Text(80)		✓

## Schema Builder

Visualized object relationships using Salesforce Schema Builder




## Data Creation & Record Entry

Entered 10 records per object via Lightning interface

The image shows the Salesforce Lightning interface for the 'Flights' object. The top navigation bar includes 'Home', 'Flights', 'Passengers', 'Bookings', 'Crews', 'Reports', and 'Dashboard'. The 'Flights' section is active, showing a list of 10 items. The list is titled 'Recently Viewed' and includes a search bar. The table below lists the flight records.

	<input type="checkbox"/> Flight Name
1	<input type="checkbox"/> Air India
2	<input type="checkbox"/> Emirates
3	<input type="checkbox"/> Star Line
4	<input type="checkbox"/> Fly Air
5	<input type="checkbox"/> Go First
6	<input type="checkbox"/> Akasa Air
7	<input type="checkbox"/> Air India Express
8	<input type="checkbox"/> Vistara
9	<input type="checkbox"/> Spice Jet
10	<input type="checkbox"/> IndiGo





Search...

AirLine Managemen...

Home

Flights

Passengers

Bookings

Crews

Reports


Da

Passengers

Recently Viewed

11 items • Updated a few seconds ago

	<input type="checkbox"/>	Passenger Id
1	<input type="checkbox"/>	PS-0002
2	<input type="checkbox"/>	PS-0008
3	<input type="checkbox"/>	PS-0002
4	<input type="checkbox"/>	PS-0012
5	<input type="checkbox"/>	PS-0010
6	<input type="checkbox"/>	PS-0008
7	<input type="checkbox"/>	PS-0007
8	<input type="checkbox"/>	PS-0006
9	<input type="checkbox"/>	PS-0005
10	<input type="checkbox"/>	PS-0004
11	<input type="checkbox"/>	PS-0003



Search...

AirLine Managemen...

Home

Flights

Passengers

Bookings

Crews

Reports

Dashboard

Bookings

Recently Viewed

11 items • Updated a few seconds ago

	<input type="checkbox"/>	Booking Id
1	<input type="checkbox"/>	Bk-0007
2	<input type="checkbox"/>	Bk-0012
3	<input type="checkbox"/>	Bk-0010
4	<input type="checkbox"/>	Bk-0009
5	<input type="checkbox"/>	Bk-0008
6	<input type="checkbox"/>	Bk-0006
7	<input type="checkbox"/>	Bk-0005
8	<input type="checkbox"/>	Bk-0004
9	<input type="checkbox"/>	Bk-0003
10	<input type="checkbox"/>	Bk-0002
11	<input type="checkbox"/>	Bk-0001



AirLine Manageme...

Home

Flights

Passengers

Bookings

Crews

Reports

Dashbo



Crews

Recently Viewed



10 items • Updated a few seconds ago

	<input type="checkbox"/>	Crew Id
1	<input type="checkbox"/>	INT-0006
2	<input type="checkbox"/>	INT-0009
3	<input type="checkbox"/>	INT-0010
4	<input type="checkbox"/>	INT-0008
5	<input type="checkbox"/>	INT-0007
6	<input type="checkbox"/>	INT-0005
7	<input type="checkbox"/>	INT-0004
8	<input type="checkbox"/>	INT-0003
9	<input type="checkbox"/>	INT-0002
10	<input type="checkbox"/>	INT-0001

## Profile Management

### Clone Profile

Enter the name of the new profile.

**You must select an existing profile to clone from.**

Existing Profile	Standard Platform User
User License	Salesforce Platform
Profile Name	<input type="text" value="General Admin"/>

### Clone Profile

Enter the name of the new profile.

**You must select an existing profile to clone from.**

Existing Profile	Standard Platform User
User License	Salesforce Platform
Profile Name	<input type="text" value="Management Admin"/>

### Clone Profile

Enter the name of the new profile.

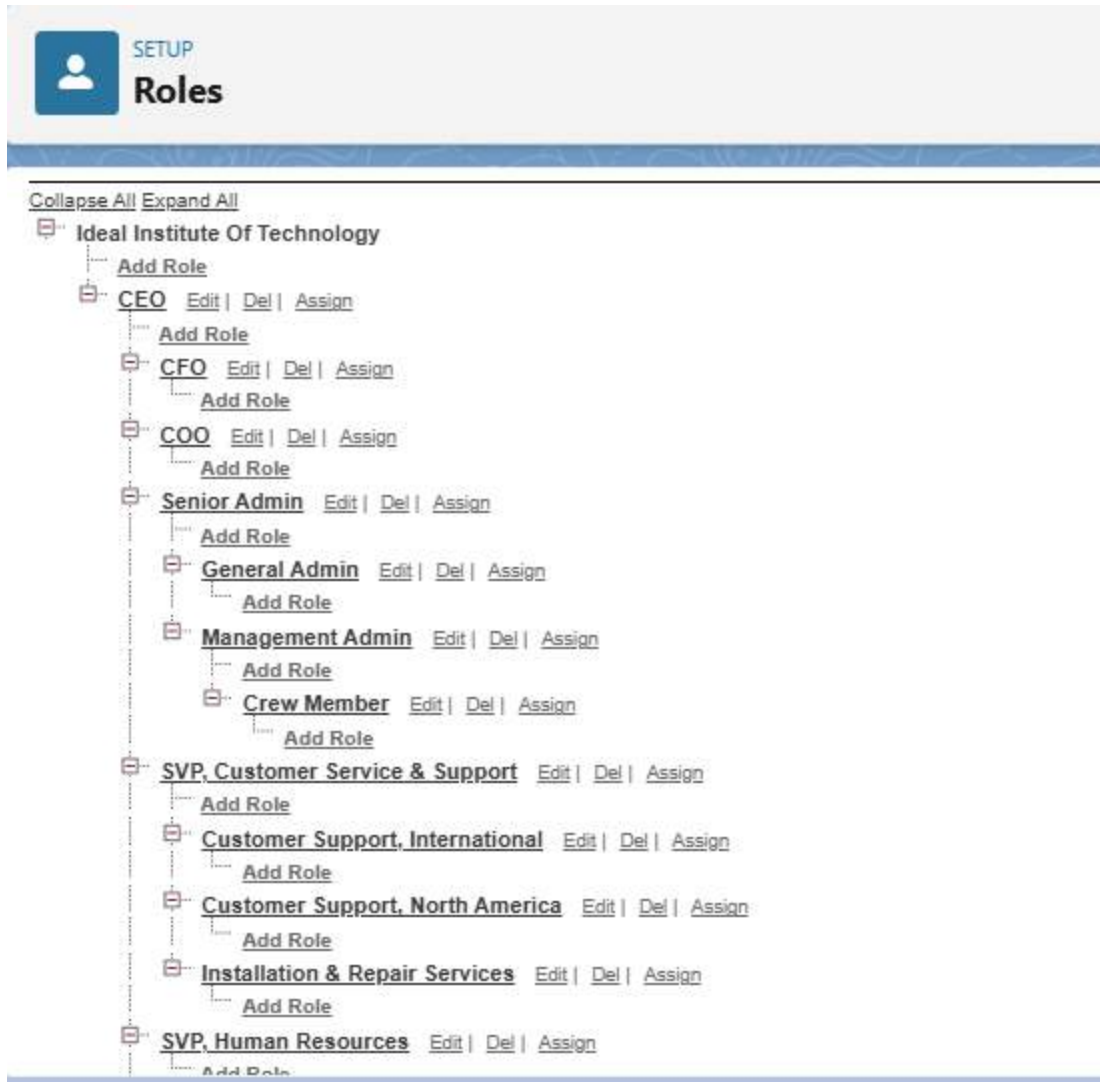
**You must select an existing profile to clone from.**

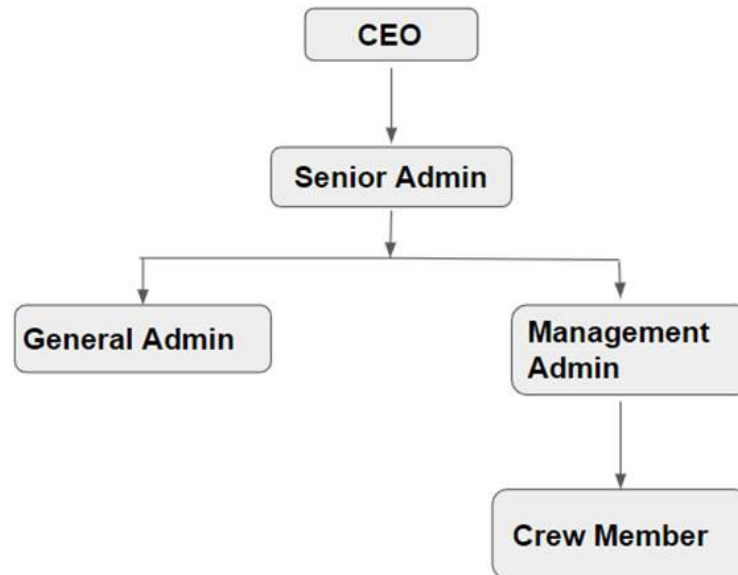
Existing Profile	System Administrator
User License	Salesforce
Profile Name	<input type="text" value="Senior Admin"/>





## Role Hierarchy Setup





# User Management

[illegible]

## Reports

The screenshot shows the 'Reports' section of the Airtline Management System. The top navigation bar includes 'Home', 'Flights', 'Passenger', 'Bookings', 'Crew', 'Reports', and 'Dashboards'. The 'Reports' tab is active. Below the navigation bar, there is a search bar and buttons for 'New Report' and 'New Folder'. The main content area displays a table of reports with columns: Report Name, Description, Folder, Created By, Created On, and Subscribed. The table lists three reports: 'Booking with Flight Details', 'Booking with Passenger Name', and 'Crew with Flight'. The left sidebar shows a tree view with 'Reports' and 'Dashboards' sections.

REPORTS	Report Name	Description	Folder	Created By	Created On	Subscribed
Recent	Booking with Flight Details		Private Reports	Santosh Tiwari	6/23/2025, 6:23 PM	
Created by Me	Booking with Passenger Name		Private Reports	Santosh Tiwari	6/24/2025, 8:24 PM	
Private Reports	Crew with Flight		Private Reports	Santosh Tiwari	6/23/2025, 8:23 PM	

## Dashboards

The screenshot shows the 'Dashboards' section of the Airtline Management System. The top navigation bar includes 'Home', 'Flights', 'Passenger', 'Bookings', 'Crew', 'Reports', and 'Dashboards'. The 'Dashboards' tab is active. Below the navigation bar, there is a search bar and buttons for 'New Dashboard' and 'New Folder'. The main content area displays a table of dashboards with columns: Dashboard Name, Description, Folder, Created By, Created On, and Subscribed. The table lists four dashboards: 'Booking with Flight Component', 'Crew with Flight', 'Booking with Passenger Name', and 'Enablement Dashboard'. The left sidebar shows a tree view with 'Dashboards' and 'Reports' sections.

DASHBOARDS	Dashboard Name	Description	Folder	Created By	Created On	Subscribed
Recent	Booking with Flight Component	using the Booking with flight report	Airtline Dashboards	Santosh Tiwari	6/23/2025, 9:23 PM	
Created by Me	crew with flight	about crew members	Private Dashboards	Santosh Tiwari	6/28/2025, 1:12 AM	
Private Dashboards	Booking with Passenger Name	about passenger data	Private Dashboards	Santosh Tiwari	6/28/2025, 1:11 AM	
All Dashboards	Enablement Dashboard	View data on how Enablement helps drive your business outcomes. This is your main dashboard for all Enablement analytics. Don't delete it. If you want to make changes to this dashboard duplicate it.	Enablement Dashboard Spring '24 - Automated Process		6/14/2025, 4:06 PM	

Dashboards display as below:





## + Apex Development

Wrote class ,trigger and test class to validate passenger phone input

```
File • Edit • Debug • Test • Workspace • Help • < >
PhnValid_PassengerObj.apxc
Code Coverage: None • API Version: 58

1 public class PhnValid_PassengerObj {
2     public static void valMethod(List<Passenger__c> newPass){
3         for(Passenger__c p : newPass){
4             if(p.Phone__c == null){
5                 p.Phone__c.addError('Please Enter Phone Number');
6             }
7         }
8     }
9 }
```

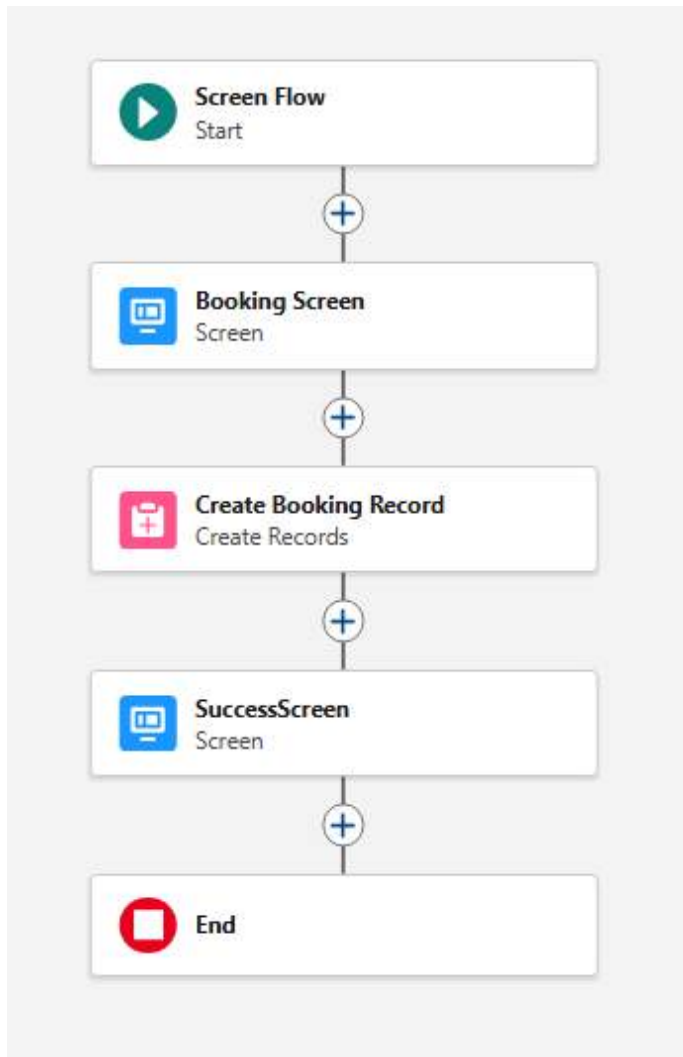
```
PhnValid_TestClass.apex | PassportExpiryValidator.apex
Code Coverage: None | API Version: 64
1 public class PassportExpiryValidator {
2     public static void validate(List<Passenger__c> passengers) {
3         for (Passenger__c p : passengers) {
4             if (p.Passport_Expiry_Date__c != null && p.Passport_Expiry_Date__c < Date.today()) {
5                 p.Passport_Expiry_Date__c.addError('Passport expiry date cannot be in the past.');
6             }
7         }
8     }
9 }
```

```
PhnValid_TestClass.apex
Code Coverage: None | API Version: 64
1 @isTest
2 public class PhnValid_TestClass {
3     @isTest
4     public static void testClass(){
5         list <Passenger__c> varlis = new list<Passenger__c>();
6         Passenger__c var = new Passenger__c();
7         var.Phone__c = null;
8         varlis.add(var);
9         insert varlis;
10        PhnValid_PassengerObj.valMethod(varlis);
11    }
12 }
```



## Flow Automation

Built booking flow with success message confirmation screen



 **Built booking flow with success message confirmation screen**

Last saved on 6/24/2025, 10:50 AM
Active
Run
Debug
Save As New Version
Save
Deactivate

Create Records

\*Label
Create Booking Record
\*API Name
Create\_Booking\_Record

Description

\*How to set record field values
Manually

Create a Record of This Object

\*Object
Booking

Set Field Values for the Booking

Field	Value
Class	bookingObject > Class
Departs From	bookingObject > Departs From
Departs To	bookingObject > Departs To
Departure Date	bookingObject > Departure Date
Flight	bookingObject > Flight
Passenger Name	bookingObject > Passenger Name
Travellers	bookingObject > Travellers

+ Add Field

☐ Manually assign variables (advanced)

Check for Matching Records

Disabled

New Builder
Air Lines management - 101

Screen Elements
Air Lines management - 101
Active
Run
Debug
Save As New Version
Cancel

Edit Screen

Screen Size
Large

Screen Properties

\*Label
SuccessScreen
\*API Name
SuccessScreen
Description

Page
Select a page resource

Configure Header
Configure Footer
Configure Screen Actions

Cancel
Done

Components
Fields

Search components

Print PDF
Add Screen
Add Record data
Add Screen
Call Script
Cancel Appointment
Checkbook
Checkbook Group
Checkbook History
Currency
Data Table
Data
Data & Time
Get record by the system name

Air Lines management

We are happy to inform you that your booking for your named is confirmed. Get ready to create some unforgettable memories. We've made it right here for you and included all of your booking details in this very email. All you need to do is show us this email on the day you arrive and you'll be good to go!

Date: {bookingObject.Departure\_Date\_\_c}
Departs from: {bookingObject.Departs\_From\_\_c}
Departs to: {bookingObject.Departs\_To\_\_c}
Class: {bookingObject.Class\_\_c}
Travellers: {bookingObject.Travellers\_\_c}
Passenger Name: {bookingObject.Passenger\_Name\_\_c}

Print
Printout
Done

## ✓ 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.

Below are the Apex Class, Trigger, and Test Class used in the Airline Management System project:

**1. Apex Class:** Contains reusable methods that enforce custom validation rules on the Passenger object.

## 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');
```

**2.Apex Trigger:** Automatically calls the validation method before a Passenger record is inserted, ensuring mandatory fields are checked.

## Apex Trigger: PhnValidTrigger.trigger

```
tri gger PhnValidTri gger on Passenger_pc
(before insert) {
    if(trigger.isBefore && trigger.isInsert){
PhnValid_PassengerObj.valMethod(tri gger.new);
```

**3.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.

## Apex Test Class: PhnValid\_TestClass.cls

```
@isTest
public class PhnValid_TestClass (
    @isTest
    public static void testClassb(
        List<Passenger__c> varlis = new
List<Passenger __c>b;
        Passenger __c var = new Passenger __cb;
        var.Phone__c = null;
        varlis.add(var);
        insert varlis;
        PhnValid_PassengerObj.valMethod(varlis);
```

# ✓ Dataset

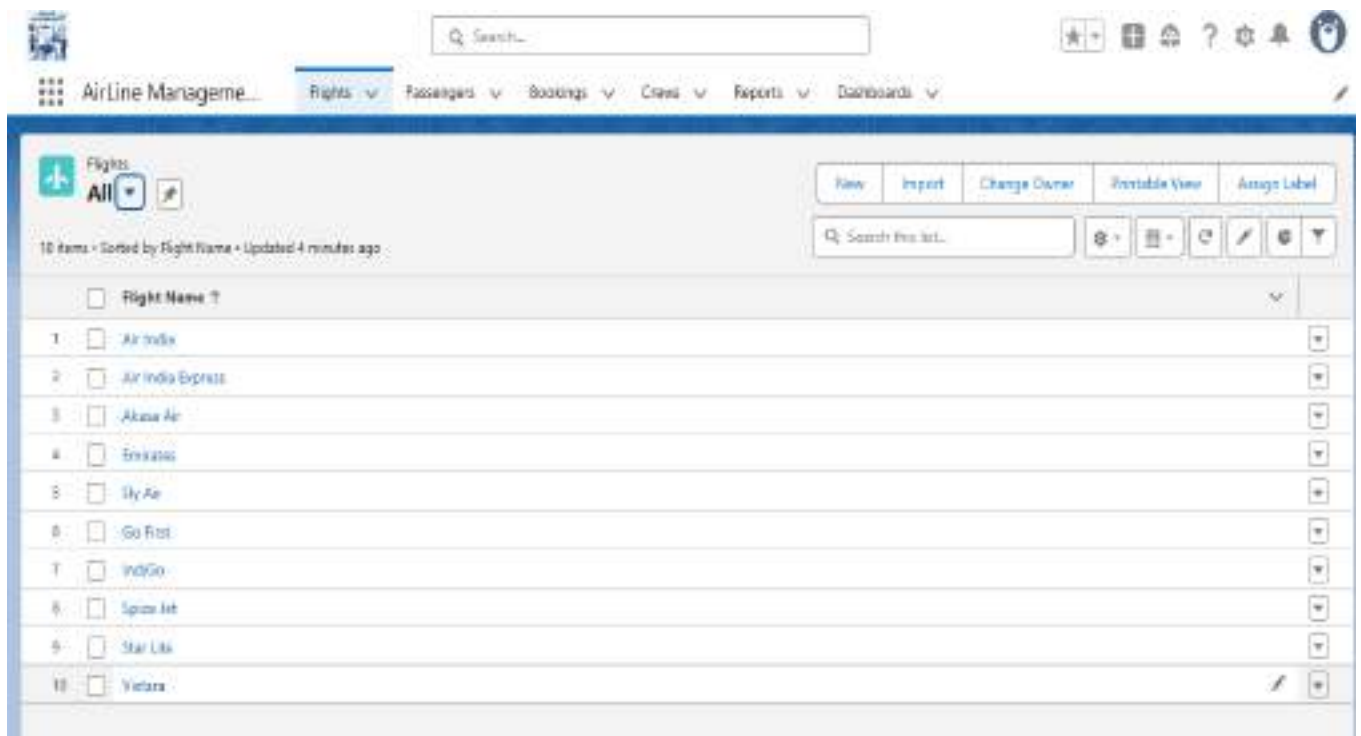
Sample records used for the Airline Management System are shown below. Each object includes a minimum of 10 records

## Dataset Creation

As part of the system validation and testing process, datasets were manually created for each key object in the Airlines Management System. A minimum of 10 sample records were added to the following custom objects:

- ✈ Flight
- 👤 Passenger
- 📄 Booking
- 👮 Crew

## ✓ FLIGHT






The screenshot displays the 'AirLine Management' system interface. The top navigation bar includes a search bar and icons for various functions. The main menu shows 'Rights', 'Passengers', 'Bookings', 'Crews', 'Reports', and 'Dashboards'. The 'Flights' section is active, showing a list of 10 items sorted by Flight Name. The list includes airlines like Air India, Air India Express, Akasa Air, AirAsia, Sky Air, Go First, IndiGo, Spice Jet, Star Line, and Vietara. Each row has a checkbox, a flight name, and a dropdown menu.

	<input type="checkbox"/> Flight Name ?	
1	<input type="checkbox"/> Air India	▼
2	<input type="checkbox"/> Air India Express	▼
3	<input type="checkbox"/> Akasa Air	▼
4	<input type="checkbox"/> AirAsia	▼
5	<input type="checkbox"/> Sky Air	▼
6	<input type="checkbox"/> Go First	▼
7	<input type="checkbox"/> IndiGo	▼
8	<input type="checkbox"/> Spice Jet	▼
9	<input type="checkbox"/> Star Line	▼
10	<input type="checkbox"/> Vietara	▼



To simulate real-world airline operations, 10 sample records were created for the Flight object within the Salesforce Lightning App. These records include essential details such as:

- Flight Name
- Departs From and Departs To locations
- Capacity
- PNR Number
- Departure & Arrival Times

Flight Air India	
Related	Details
Flight Name	Owner
Air India	 Santosh Tiwari
Capacity	
242	
Departs From	
Bengaluru	
Departs to	
Chennai	
PNR Number	
178,628	
Departure Date	
5/8/2024	
Departure Time	
8:30:00 AM	
Arrival Time	
9:15:00 AM	
Created By	Last Modified By
 Santosh Tiwari, 6/22/2025, 6:51 AM	 Santosh Tiwari, 6/22/2025, 6:51 AM

## ✓ PASSENGER

	Passenger ID	
1	PS-0011	
2	PS-0002	
3	PS-0013	
4	PS-0003	
5	PS-0008	
6	PS-0007	
7	PS-0009	
8	PS-0005	
9	PS-0004	
10	PS-0003	


### Passenger Records Creation

A total of 10 Passenger records were created within the Airlines Manageme represent various travelers booking flights through the platform. Each recor key personal and travel-related details such as:










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

These entries were created using the Passenger tab in the Salesforce Lightning App.



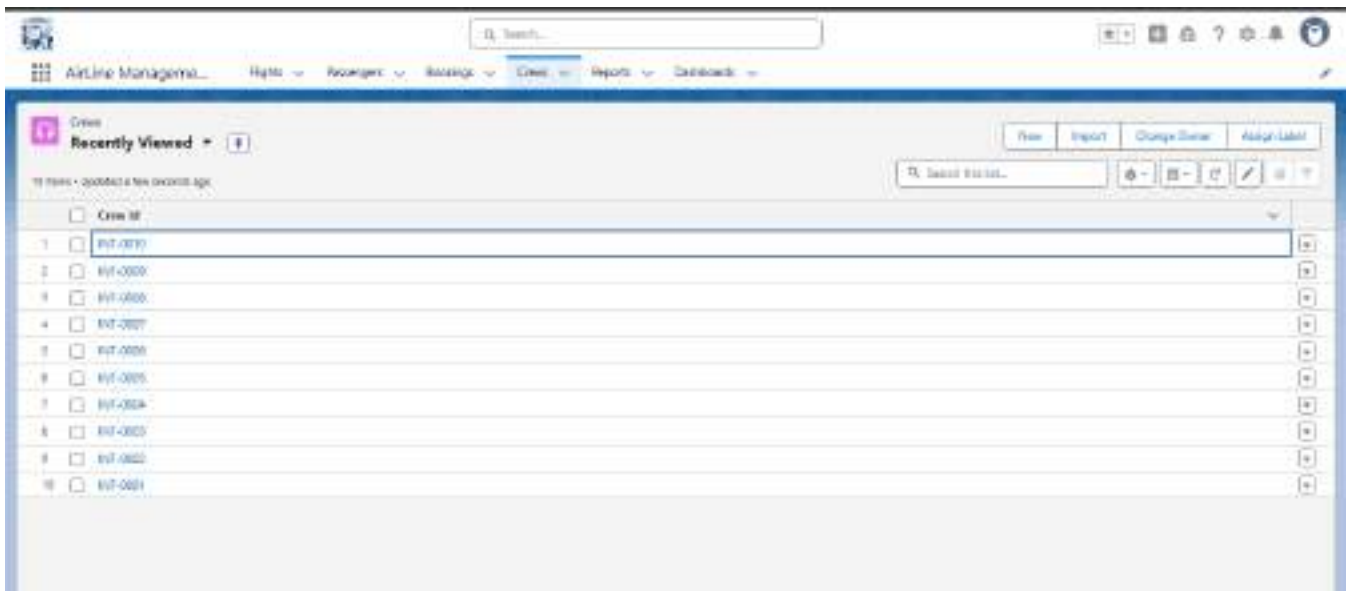

**Booking**  
**Bk-0010**

Related
Details

Booking id	Bk-0010	Owner	 Santosh Tiwari	
Departure Date	1/9/2025			
Flight	indigo			
Passenger Name	PS-0010			
Departs From	Bangalore			
Departs To	Delhi			
Travellers	Child			
Class	Business			
Created By	 Santosh Tiwari, 6/22/2025, 7:14 AM			
	Last Modified By  Santosh Tiwari, 6/22/2025, 7:14 AM			

- Passenger Name (Lookup to Passenger)
- Flight (Lookup to Flight)
- Departure Date
- Departs From / Departs To
- Class (Economy, Business, First Class)
- Travellers (Adult, Child, Infant)

## ✓ CREW



### Crew Records Creation

To complete the airline operations the Crew object in the Salesforce real-life crew assignments for different fields:

- Crew Member Name
- Phone Number
- Email Address
- Qualification (e.g., Comm
- Role (e.g., Pilot, Co-Pilot,
- Flight (Lookup to Flight o

Crew

INT-0009

Related

Details

Crew Id

INT-0009

Owner

Santosh Tivari

Flight

IndiGo

Crew Member

787797

Phone

(980) 997-9243

Email

mdshk@gmail.com

Qualification

B.tech

Role

Co-Pilot

Created By

Santosh Tivari, 6/22/2025, 7:26 AM

Last Modified By

Santosh Tivari, 6/22/2025, 7:26 AM

## Overview

It includes Apex classes, triggers, and test classes used to implement core functionalities such as data validation. A sample dataset for major objects like Passenger, Flight, Booking, and Crew is provided to simulate real-world airline operations. The document also includes output screenshots from the Salesforce Org that demonstrate successful execution, error handling, dashboard analytics, and user interface features such as the Lightning App and report views. This project emphasizes the integration of business logic and visual reporting within the Salesforce platform for a streamlined airline management solution.