

Phase 4: Process Automation - Flight Reservation & Scheduling System

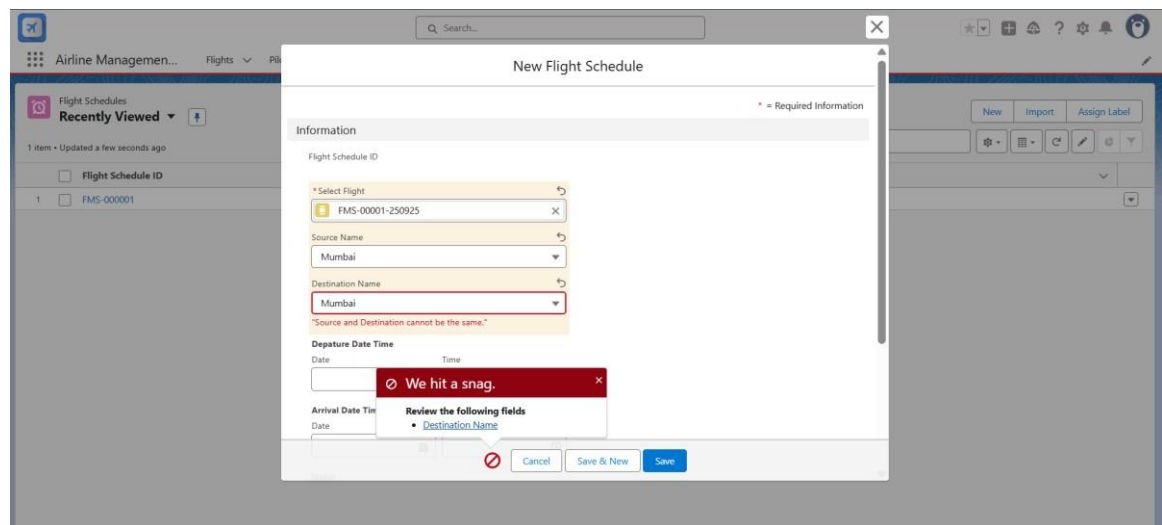
1. Introduction

Phase 4 focuses on implementing automation features in Salesforce for the Airline Management System. The goal is to enforce business rules, improve efficiency, and ensure data integrity when managing **Flights, Flight Schedules, and Pilots**. By introducing **validation rules, formula fields, flows, queues, email alerts, and dashboards**, this phase reduces manual errors, improves collaboration among operators, and gives management accurate real-time insights.

2. Validation Rules

Validation rules enforce data correctness and prevent invalid records from being saved. In this project, the following validation rules are created:

- **Source ≠ Destination (Flight Schedule):** Prevents scheduling a flight from and to the same location.

The screenshot shows the 'New Flight Schedule' form in Salesforce. The form is titled 'New Flight Schedule' and has a 'Required Information' section. The 'Flight Schedule ID' field is populated with 'FMS-00001-250925'. The 'Source Name' and 'Destination Name' fields are both set to 'Mumbai'. A red error message is displayed: 'We hit a snag. Review the following fields: Destination Name'. Below the error message, there are buttons for 'Cancel', 'Save & New', and 'Save'. The background shows the 'Flight Schedules' list view with a table containing one item: 'FMS-000001'.

- **Pilot Name Validation (Pilot):** First Name and Last Name must not be identical.

The screenshot shows a web application for 'Airline Management' with a 'Pilots' section. A modal form titled 'Information' is open, displaying fields for a pilot's details. The 'First Name' and 'Last Name' fields both contain the value 'anushka'. A red error message box is overlaid on the form, indicating a validation failure: 'We hit a snag. Review the errors on this page. * First Name and Last Name cannot be the same.' The form also includes fields for DOB, Contact Number, Email ID (Tendulkar@g), and Experience (--None--). The 'Owner' field is set to 'Niveditha Paturu'. Buttons for 'Cancel', 'Save & New', and 'Save' are at the bottom.

- **Pilot Age \geq 18 (Pilot):** Ensures that only qualified individuals are added as pilots. Age is calculated automatically from Date of Birth.

The screenshot shows the same 'Pilot Information' form, but with different values. The 'First Name' is 'anushka' and the 'Last Name' is 'Sharma'. The 'DOB' field is set to '9/12/2016'. A red error message box is overlaid, indicating a validation failure: 'We hit a snag. Review the errors on this page. * Pilot must be at least 18 years old.' The 'Email ID' is 'Tendulkar@g' and 'Experience' is '--None--'. The 'Owner' field remains 'Niveditha Paturu'. Buttons for 'Cancel', 'Save & New', and 'Save' are at the bottom.

- **Arrival > Departure (Flight Schedule):** Ensures that the arrival time is always later than the departure time.

The screenshot shows a Salesforce form for flight schedules. The form includes fields for Source Name, Destination Name, Departure Date Time, Arrival Date Time, Status, Name of the First Pilot, and Name of the Second Pilot. A red error message is displayed: "We hit a snag. Review the errors on this page. Arrival must be later than departure." The error is triggered because the arrival date (9/27/2025) is earlier than the departure date (9/28/2025).

These rules maintain consistency, enforce business logic, and eliminate human errors.

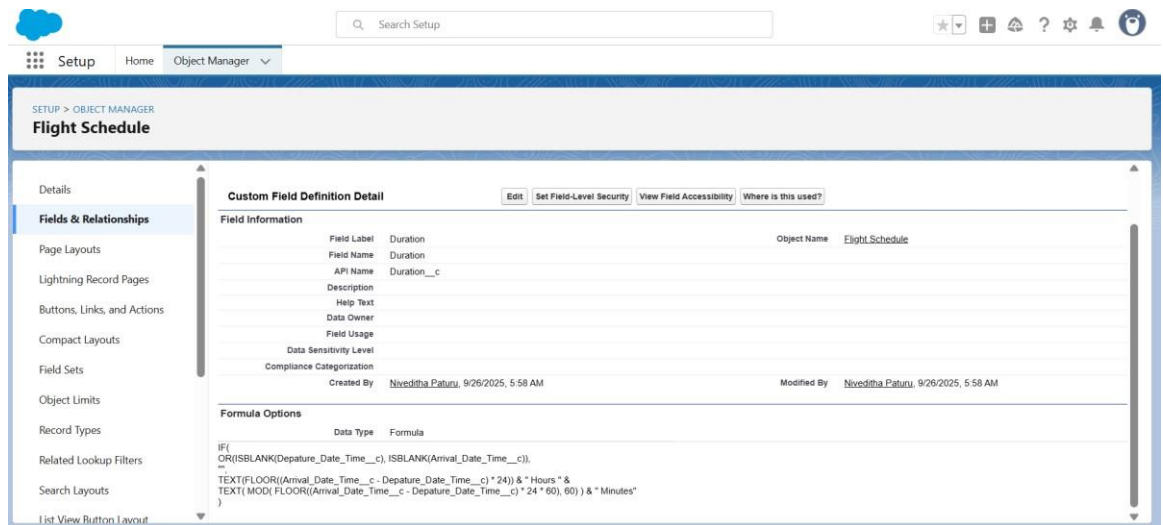
3. Formula Fields

Formula fields are created to automatically calculate and display important information:

- **Pilot Age Formula:** Calculates age from Date of Birth. Example:

The screenshot shows the Salesforce Setup page for the "Pilot" object. The "Age" formula field is selected. The "Custom Field Definition Detail" section shows the field information, including the field label "Age", the API name "Age__c", and the formula "FLOOR((TODAY() - DOB__c) / 365)". The "Formula Options" section shows the data type as "Text" and the decimal places as "0".

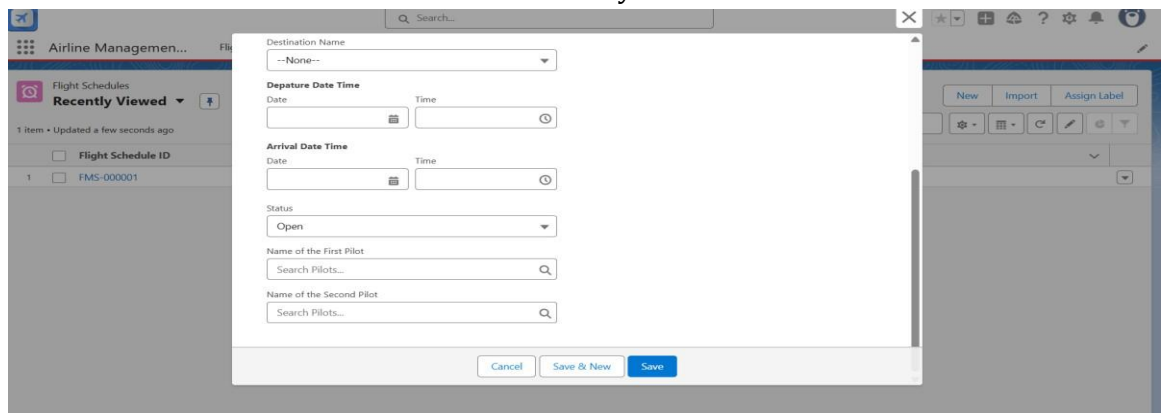
- **Duration Formula:** Calculates travel time from Departure Date/Time and Arrival Date/Time and displays it in "Hours and Minutes" format.



These formula fields save time for users and provide accurate results for reporting.

4. Default Values & Picklists

- The **Status field** in Flight Schedule is a picklist with values: *Open, In Progress, Closed, Cancelled*.
- A **default value** of **Open** is applied so that every new Flight Schedule record starts with “Open” status.
- This reduces manual effort and ensures uniformity across all records.



5. Flows

Salesforce Flows are used to automate critical tasks:

1. **Flow 1: Set Default Status (Before-Save Flow)**
 - a. Automatically sets Status = “Open” when a new Flight Schedule is created.
2. **Flow 2: Assign Schedule to Queue (After-Save Flow)**

- a. Assigns newly created Flight Schedule records to the **Flight Operators Queue**.
- b. Ensures all operators can share workload.

The screenshot displays a web application interface for managing flight schedules. A modal form titled 'New Flight Schedule' is open, allowing users to create a new record. The form includes the following fields:

- Destination Name:** A dropdown menu currently showing '--None--'.
- Departure Date Time:** Two input fields for 'Date' and 'Time', each with a calendar icon.
- Arrival Date Time:** Two input fields for 'Date' and 'Time', each with a calendar icon.
- Status:** A dropdown menu currently showing 'Open'.
- Name of the First Pilot:** A search input field with a magnifying glass icon and the placeholder text 'Search Pilots...'.
- Name of the Second Pilot:** A search input field with a magnifying glass icon and the placeholder text 'Search Pilots...'.

At the bottom of the modal, there are three buttons: 'Cancel', 'Save & New', and 'Save'. The background interface shows a sidebar with 'Airline Management' and 'Flight Schedules' sections, and a main area with a 'Recently Viewed' list containing one item with ID 'FMS-000001'.

6. Queues

Flight Operators Queue is created so that new Flight Schedule records can be assigned to a common pool.

- Members of this queue: Rajesh K, Rajnikant, and Anushka Sharma.
- Operators can take ownership of records from the queue, ensuring fair workload distribution.
- Improves teamwork and prevents overload on a single user.

7. Profiles, Roles & Permission Sets

- Proper access control ensures that users can only perform the actions allowed by their role.
- **CEO Profile:** Read-only access to Flight Schedules. Cannot create, edit, or delete records.

Roles

Creating the Role Hierarchy

You can build on the existing role hierarchy shown on this page. To insert a new role, click **Add Role**.

Your Organization's Role Hierarchy

Collapsible All Expand All Show in tree view

- ksrm Company
 - Add Role
 - CEO Edit | Del | Assign
 - Add Role
 - CEO Edit | Del | Assign
 - Add Role
 - COO Edit | Del | Assign
 - Add Role
 - Manager Edit | Del | Assign
 - Add Role
 - Flight Operator Edit | Del | Assign
 - Add Role
 - SVP, Customer Service & Support Edit | Del | Assign
 - Add Role
 - SVP, Human Resources Edit | Del | Assign
 - Add Role

- **Manager (Devi):** Full access to oversee operations and operators.

Roles

Role Manager

Below is the list of users assigned to this role. Click Edit to modify the role name. Click Assign Users to Role to assign existing users to this role. Click New User to create a user for this role.

Hierarchy: ksm Company » CEO » Manager
Siblings: SVP, Sales & Marketing, SVP, Customer Service & Support, CEO, SVP, Human Resources, COO

Users in Manager Role (1)

Role Detail Edit Delete

Label	Manager	Role Name	Manager
This role reports to	CEO	Role Name as displayed on reports	Manager
Modified By	Niveditha.Paturu, 9/27/2025, 3:45 AM	Sharing Groups	Role, Role and Internal Subordinates
Opportunity Access	Users in this role can edit all opportunities associated with accounts that they own, regardless of who owns the opportunities		
Case Access	Users in this role can edit all cases associated with accounts that they own, regardless of who owns the cases.		

Users in Manager Role Assign Users to Role New User Users in Manager Role Help

Action	Full Name	Alias	Username	Active
Edit	Devi.mamidikavala	dnam	sudha098765@gmail.com	✓

javascript:srcUp(%27%2F00E%00003E0L%3Fsetupid%3DRoles%26ndty%3Dp1%27);

- **Flight Operators (Rajesh K):** Can create, read, and edit Flight Schedules.

Roles

Role Flight Operator

Below is the list of users assigned to this role. Click Edit to modify the role name. Click Assign Users to Role to assign existing users to this role. Click New User to create a user for this role.

Hierarchy: ksm Company » CEO » Manager » Flight Operator

Users in Flight Operator Role (1)

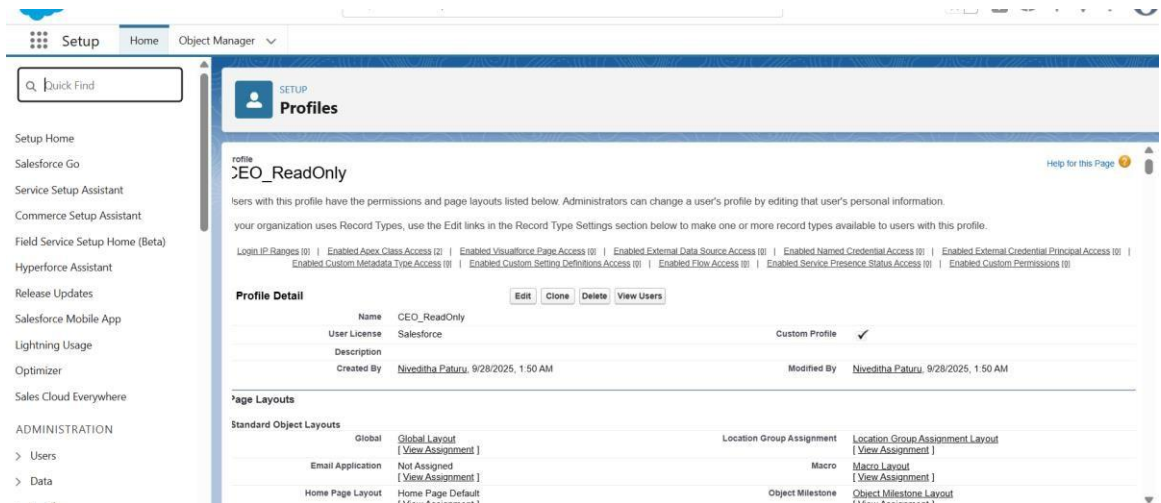
Role Detail Edit Delete

Label	Flight Operator	Role Name	Flight_Operator
This role reports to	Manager	Role Name as displayed on reports	Flight_Operator
Modified By	Niveditha.Paturu, 9/27/2025, 3:47 AM	Sharing Groups	Role, Role and Internal Subordinates
Opportunity Access	Users in this role can edit all opportunities associated with accounts that they own, regardless of who owns the opportunities		
Case Access	Users in this role can edit all cases associated with accounts that they own, regardless of who owns the cases.		

Users in Flight Operator Role Assign Users to Role New User Users in Flight Operator Role Help

Action	Full Name	Alias	Username	Active
Edit	Rajesh.k	rk	nore8795cvt@example.com	✓

- **Permission Set:** Special permission set assigned only to **Rajesh K** allowing him to delete Flight Schedules.



This model ensures security, accountability, and proper hierarchy within the system.

8. Email Alerts & Templates

- Email notifications improve communication and keep management updated.
- **Email Template:** Designed to include Flight details (Name, Source, Destination, Departure, Arrival, and Pilots).
- **Email Alert:** Configured so that when a Flight Schedule is marked as “Cancelled,” the Manager (Virat Kohli) automatically receives an email.

This ensures prompt awareness of cancellations and allows for quick decision-making.

9. Test Cases

The following test cases are performed:

- Verify Source and Destination validation.
- Verify Pilot name validation.
- Verify Pilot age validation.
- Verify Arrival after Departure validation.
- Verify default Status is 'Open'.

Airline Management System - Flight Schedules

Recently Viewed

1 item • Updated a few seconds ago

☐ Flight Schedule ID

1 ☐ FMS-000001

Destination Name

--None--

Departure Date Time

Date Time

Arrival Date Time

Date Time

Status

Open

Name of the First Pilot

Search Pilots...

Name of the Second Pilot

Search Pilots...

Airline Management System - Flight Schedules

Recently Viewed

1 item • Updated 2 minutes ago

☐ Flight Schedule ID

1 ☐ FMS-000001

Source Name

--None--

Destination Name

--None--

Departure Date Time

Date Time

9/28/2025 12:00 PM

Arrival Date Time

Date Time

9/27/2025 12:00 PM

Status

Open

Name of the First Pilot

Search Pilots...

Name of the Second Pilot

Search Pilots...

We hit a snag.

Review the errors on this page.

- Arrival must be later than departure.

Airline Management System - Flight Schedules

Recently Viewed

1 item • Updated a few seconds ago

☐ Flight Schedule ID

1 ☐ FMS-000001

New Flight Schedule

* = Required Information

Information

Flight Schedule ID

* Select Flight

FMS-00001-250925

Source Name

Mumbai

Destination Name

Mumbai

"Source and Destination cannot be the same."

Departure Date Time

Date Time

Arrival Date Time

Date Time

We hit a snag.

Review the following fields

- Destination Name

11. Conclusion

Phase 4 successfully automated the Airline Management System, improving accuracy, consistency, and efficiency. Validation rules prevent bad data, formula fields simplify calculations, and flows automate repetitive processes. Queues distribute work fairly, while profiles and permission sets secure the system. Email alerts provide real-time communication, and dashboards deliver actionable insights to management.

This automation makes the system reliable, user-friendly, and aligned with real-world airline operations.