

Phase 4: Process Automation - Airline Management 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 displays the 'New Flight Schedule' form in Salesforce. The form includes fields for 'Flight Schedule ID' (with a dropdown showing 'FMS-00001-250925'), 'Source Name' (dropdown showing 'Mumbai'), and 'Destination Name' (dropdown showing 'Mumbai'). A red error message is visible below the 'Destination Name' field, stating: 'Source and Destination cannot be the same.' Below this, there is a 'Departure Date Time' section with 'Date' and 'Time' input fields. A red error message box is overlaid on the form, stating: 'We hit a snag. Review the following fields: Destination Name'. At the bottom of the form, there are buttons for 'Cancel', 'Save & New', and 'Save'.

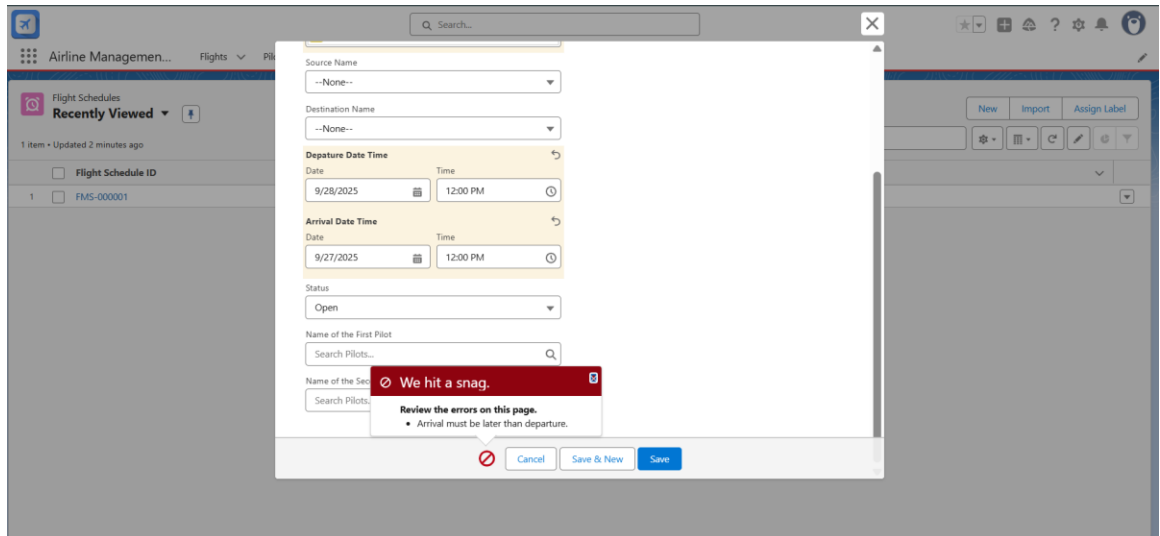
- **Pilot Name Validation (Pilot):** First Name and Last Name must not be identical.

The screenshot shows a web application for "Airline Management". A modal window titled "Information" is open, displaying a form for adding a pilot. The form fields include: First Name (anushka), Last Name (anushka), DOB, Contact Number, Email ID (Tendulkar@g), and Experience (--None--). The Owner is listed as Niveditha Paturu. A red error message box is overlaid on the form, stating: "We hit a snag. Review the errors on this page. • 'First Name and Last Name cannot be the same.'" The form has buttons for "Cancel", "Save & New", and "Save".

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

The screenshot shows the same "Airline Management" web application. The "Information" modal window is open, but the Last Name field is now "Sharma". The DOB field is filled with "9/12/2016". The error message box is still present, stating: "We hit a snag. Review the errors on this page. • 'Pilot must be at least 18 years old.'" The form has buttons for "Cancel", "Save & New", and "Save".

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

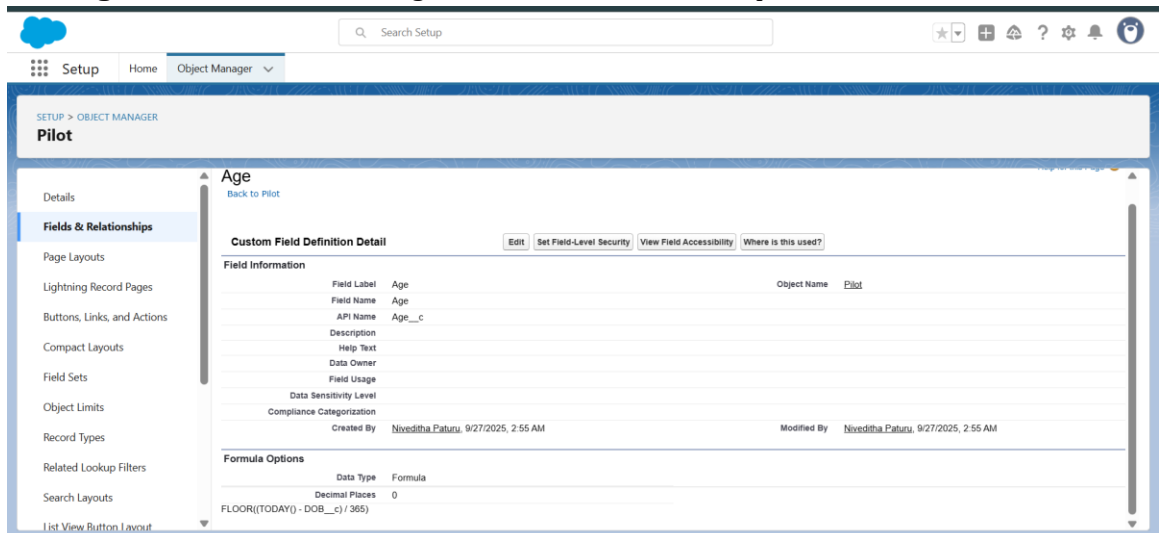


These rules maintain consistency, enforce business logic, and eliminate human errors.

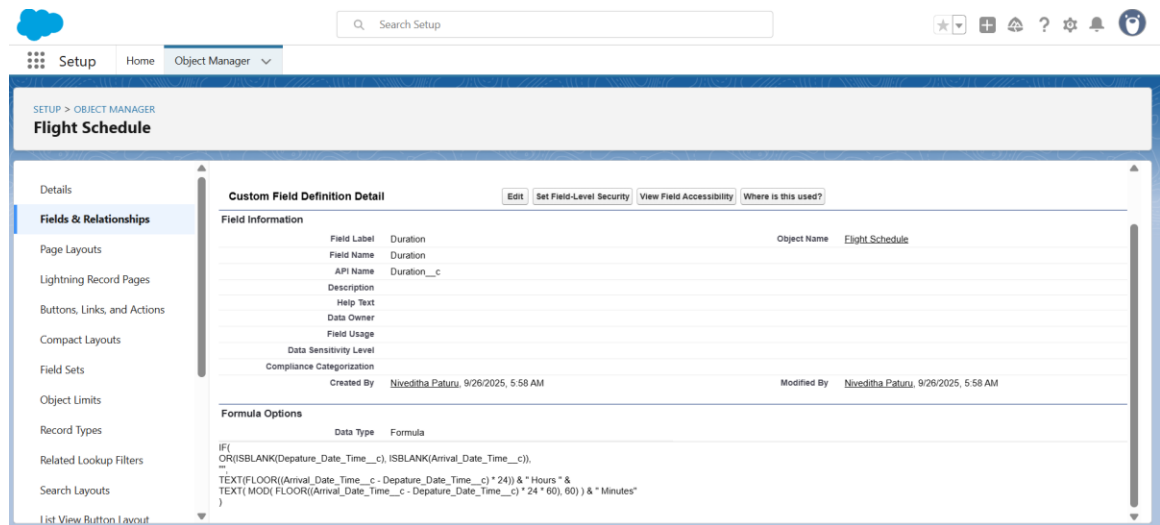
3. Formula Fields

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

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



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

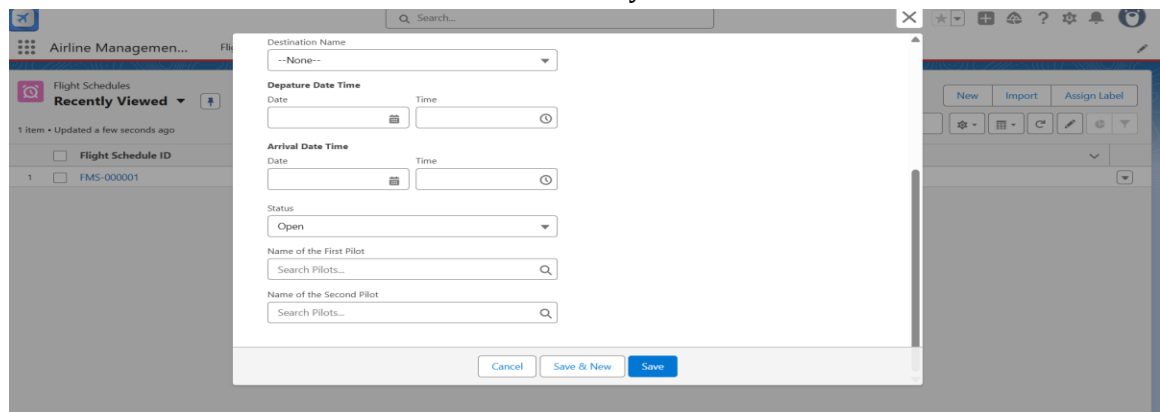


These formula fields save time for users and provide accurate results for reporting.

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 'Airline Management'. A modal window is open for creating a new flight schedule. 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.
- Name of the Second Pilot:** A search input field with a magnifying glass icon.

At the bottom of the modal, there are three buttons: 'Cancel', 'Save & New', and 'Save'.

6. Queues

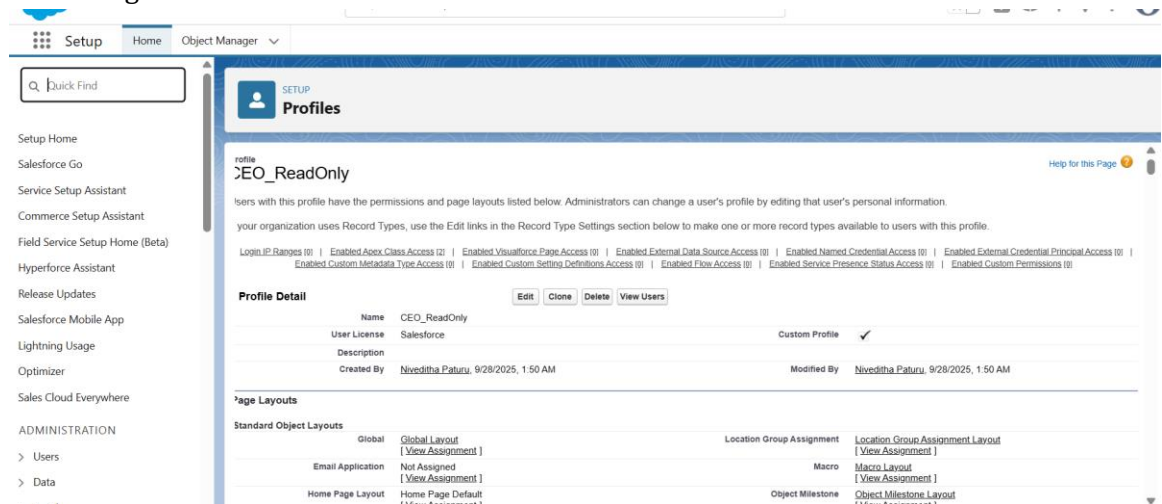
Flight Operators Queue is created so that new Flight Schedule records can be assigned to a common pool.

- 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.

- **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'.

This screenshot shows the 'Flight Schedules' form in the 'Airline Management' system. The form is titled 'Flight Schedules' and includes a 'Recently Viewed' section with one item, 'FMS-000001', updated a few seconds ago. The form fields are as follows:

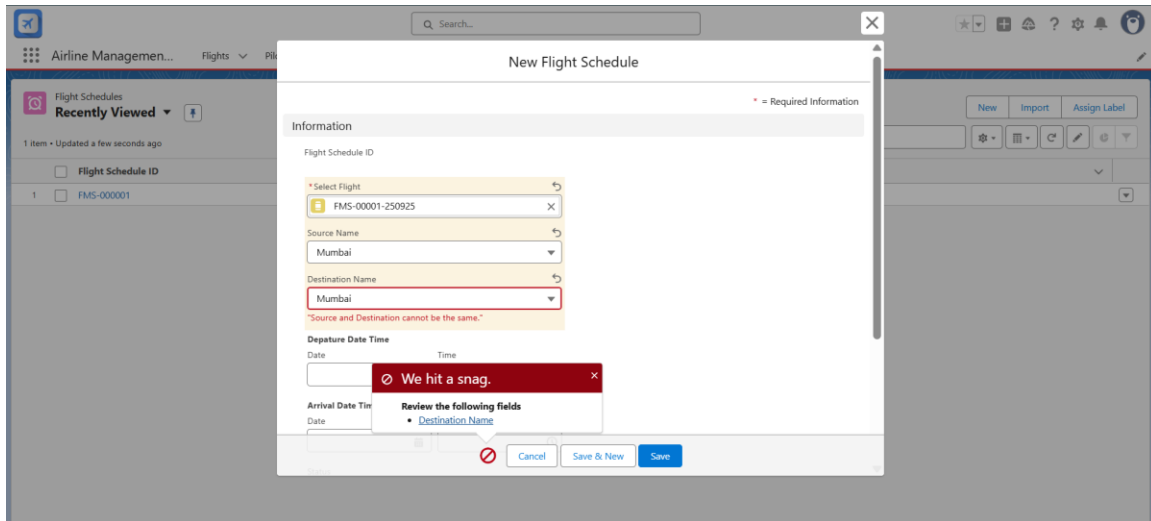
- Destination Name:** A dropdown menu with '--None--' selected.
- Departure Date Time:** Two input fields for 'Date' and 'Time'. The 'Date' field has a calendar icon, and the 'Time' field has a clock icon.
- Arrival Date Time:** Two input fields for 'Date' and 'Time'. The 'Date' field has a calendar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

At the bottom of the form, there are three buttons: 'Cancel', 'Save & New', and 'Save'.

This screenshot shows the 'Flight Schedules' form with an error message. The form fields are filled with the following values:

- Source Name:** --None--
- Destination Name:** --None--
- Departure Date Time:** Date: 9/28/2025, Time: 12:00 PM
- Arrival Date Time:** Date: 9/27/2025, Time: 12:00 PM
- Status:** Open
- Name of the First Pilot:** Search Pilots...
- Name of the Second Pilot:** Search Pilots...

An error message is displayed in a red box with a white 'X' icon, stating: "We hit a snag. Review the errors on this page. • Arrival must be later than departure." The 'Save' button is disabled, and the 'Cancel' button is highlighted with a red circle and a white 'X' icon.



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.