**Project Design Phase**

**Solution Architecture**

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| --- | --- |
| Date | 15 June 2025 |
| Team ID | LTVIP2025TMID30989 |
| Project Name | Airlines Management System |
| Maximum Marks | 4 Marks |

**Solution Architecture:**

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

* Find the best tech solution to solve existing business problems.
* Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
* Define features, development phases, and solution requirements.
* Provide specifications according to which the solution is defined, managed, and delivered.

### ****Architecture Description****

The **Salesforce Airline Management System** leverages the Salesforce Platform to centralize, automate, and secure all airline operational data.

**Key Architectural Components:**

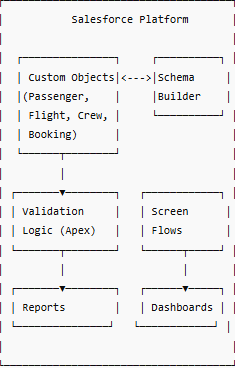
* **Custom Objects** for:
  + Passenger management
  + Flight management
  + Crew management
  + Booking management
* **Custom Fields and Field Dependencies** to capture all critical data points (e.g., departure dates, seat class).
* **Validation Logic** using:
  + **Apex Triggers** (e.g., mandatory phone number enforcement).
  + **Apex Classes** for reusable validation methods.
* **Screen Flows** for:
  + Guided booking creation
  + Confirmation screens with dynamic data
* **Profiles and Roles** for:
  + Data access security
  + User permission control
* **Reports and Dashboards** for:
  + Real-time analytics
  + Management visibility
* **Schema Builder** to visualize relationships.
* **Lightning App** to unify user navigation.

### ****Solution Features****

| **Feature** | **Description** |
| --- | --- |
| **Passenger Management** | Record and validate passenger information, including passport details and nationality. |
| **Flight Management** | Define flight schedules, capacity, and related bookings. |
| **Crew Management** | Assign and track crew members by flight. |
| **Booking Management** | Create, edit, and validate bookings with screen flows and field dependencies. |
| **Data Validation** | Use Apex triggers to enforce business rules (e.g., phone numbers are mandatory). |
| **Reporting** | Generate reports like “Bookings with Flight Details” and “Crew with Flight” for managerial review. |
| **Dashboards** | Visualize operational metrics in real-time. |
| **Role-Based Access** | Control who can view or edit data, per their job functions. |

### ****Solution Architecture Diagram****

Below is a **simplified logical architecture diagram** showing how data flows through the system:

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