



❖ **1st Deliverable (Textual Discription)**

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❖ **Subject:** Database Systems

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Airline Management System:

Airline management systems are the backbone of modern airline operations, streamlining everything from ticket booking to staff scheduling. These systems cater to two distinct user groups: passengers and airline administrators.

Passenger Functionalities

- **Flight Search and Booking:** Passengers can search for flights based on their desired itinerary, including departure and arrival locations. The system displays available flights with options for selecting travel class and date. Passengers can then book tickets for themselves and others, specifying the number of passengers and desired seating class.
- **Passenger Information Management:** During booking, passengers enter personal details like name, contact information, address, date of birth, and passport number. This information is securely stored within the system for future bookings and flight management.
- **Booking Management:** The system allows passengers to view their booking history, including past trips and upcoming flights. They can also check the status of their flights, including any delays or cancellations.

Administrative Functionalities

- **Flight Schedule Management:** Airline administrators have the authority to create and manage flight schedules. This includes setting departure and arrival times, assigning routes to specific flights, and determining the frequency of flights on particular routes.
- **Aircraft Management:** The system allows administrators to manage the airline's fleet of aircraft. This includes assigning aircraft to specific routes based on capacity requirements and aircraft specifications. Administrators can also manage aircraft maintenance schedules and ensure airworthiness.
- **Staff Management:** Airline staff plays a crucial role in flight operations. The system empowers administrators to assign crew members, such as pilots, cabin crew, and ground staff, to specific flights. This ensures sufficient staffing for each flight and facilitates smooth operations.
- **Payment Processing:** The system securely integrates with payment gateways, allowing passengers to pay for their tickets conveniently using various payment methods. Administrators can monitor and manage these transactions within the system.

- **Ticketing:** Upon payment confirmation, the system generates electronic tickets (e-tickets) or boarding passes for passengers. Passengers can access these tickets electronically or print them for physical presentation at the airport.
- **Reporting:** Airline management systems generate comprehensive reports that provide valuable insights into various aspects of the airline's operations. These reports include booking trends, revenue generation, passenger statistics, and staff performance metrics. Administrators can leverage these reports to make informed decisions about route optimization, pricing strategies, and resource allocation.

Major INFLOWS and OUTFLOWS

An airline management system can be viewed as having two main data flows: inflows and outflows.

Inflows refer to data that enters the system. This includes:

- **Passenger information:** When a user books a flight, their details like name, contact, and passport number are entered into the system.
- **Flight information:** Airlines input flight schedules, departure/arrival details, aircraft specifications, and staff assignments.
- **Booking data:** Every time a ticket is purchased, this information is added to the system.

Outflows are the data that leaves the system. This includes:

- **Tickets:** E-tickets or boarding passes are generated for passengers.
- **Reports:** The system generates various reports on bookings, revenue, and passenger statistics.
- **Staff assignments:** Crew schedules and flight assignments are communicated to relevant staff.