Airline Database

## Business Problems

Airlines face several key business problems that impact their efficiency and customer experience. Managing customer information and booking histories can become challenging, leading to delays or errors in reservations and ticketing. Proper coordination of flights, including assigning planes, flight crews, and maintenance crews, is essential to prevent logistical issues that may cause delays or cancellations. Ensuring aircraft are regularly maintained and tracking maintenance tasks is critical to minimizing downtime and maintaining safety standards. Additionally, managing relationships with vendors and ensuring timely delivery of parts and services is vital for efficient maintenance operations. These challenges can result in operational inefficiencies, higher costs, and a poor customer experience if not addressed effectively.

## Entity Descriptions

* **Customer**: An account used to make flight reservations. When making an account with the airline, users provide their name, email address, and phone number.  
  *Attributes*: ID, Name, Email Address, Phone Number.
* **Plane**: An aircraft that is assigned to operate scheduled flights.  
  *Attributes*: Registration Number, Model, Capacity.
* **Employee**: A person working for the airline, either as a member of the flight crew, a maintenance worker, or general airport administrative staff. Each employee works out of their home airport, although in the case of flight crew, this is not necessarily their current physical location.  
  *Attributes*: ID, Name, Employment Start Date, Job Code.
* **Airport**: A location where flights take off and land, identified by their International Air Transport Association (IATA) code.  
  *Attributes*: IATA Code, Address (Street, City/State/Province, Country).
* **Flight**: A scheduled journey between two airports, using a designated plane and crew.  
  *Attributes*: Flight Number, Departure Date/Time, Arrival Date/Time, Terminal Number, Gate Number.
* **Flight Crew**: A group of employees licensed to operate and manage a flight, including pilots and cabin staff. In order to be assigned to a flight, a pilot must have a license that corresponds to the type of airplane used.  
  *Attributes*: Licenses.
* **Maintenance Crew**: Employees responsible for servicing and maintaining planes. Since different repairs require different levels of experience, repairs are loosely categorized by level, with maintenance staff categorized according to the highest level of maintenance they are qualified to perform.  
  *Attributes*: Maintenance Level
* **Part**: A physical component used in plane maintenance and repairs.  
  *Attributes*: National Stock Number (NSN), Description.
* **Ticket**: A document that grants a passenger access to a specific flight, indicating seat assignment.  
  *Attributes*: Ticket Number, Passenger Name, Passenger Birth Date, Seat Assignment.
* **Vendor**: A company that supplies parts or services required for plane maintenance or other airline operations.  
  *Attributes*: ID, Name.
* **Order**: A request placed with a vendor for parts or services, typically related to maintenance.  
  *Attributes*: Date Ordered, Arrival Date, Unit Price.
* **Service Request**: A formal request for maintenance or repair services, outlining required tasks and priorities.  
  *Attributes*: Service Request Number, Priority, Maintenance Level, Description, Date Created, Date Resolved.
* **Reservation**: A booking made by a customer for a trip, which leads to the issuance of one or more tickets.  
  *Attributes*: Reservation Number