



XIX Airways is implementing its Reservation System, for which the Database needs to be designed. As part of the study on Requirement Analysis, a team from SystemX which is implementing the project made a visit to the office of XIX Airways. The following were observed on visiting XIX Airways:

- The Airways owns a number of *Airplanes* of different size and make manufactured by different companies. Each Airplane is identified by a unique ID.
- An airplane of a particular type has specific requirements in terms of airport and landing facilities. This necessitates that XIX Airways keep a list of the Airports and the facilities available there. Airports are identified by a unique ID.
- The Airways operate *Flights* between different destinations and each flight is identified by a unique number.
- Flight Information is maintained in terms of a *Flight Leg* which is a non-stop portion of a flight. It is identified by a unique `leg_number`.
- The fare for a flight is identified by a unique code. Certain restrictions regarding the fare charged / chargeable is also maintained.
- Actual travel happens through an *instance of a flight leg* on a particular date, to which a particular airplane is assigned.
- For each instance of a flight leg, seat reservations are allowed by passengers. Passenger information in terms of name and contact number is kept and seats are allotted.
- Seats are identified in a particular flight leg through a unique seat number.

Based on the above, the team decides to design an ER Diagram. Help the team in designing the same. If you think, information obtained is inadequate; you are free to make assumptions. Assumptions must be clearly documented and reasons given for them.

Adapted from *Fundamentals of Database Systems, 3rd edition authored by Elmasri and Navathe*