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Date: January 31st, 2025

Course: CSCI 3287

Consider the ER diagram in Figure 3.21, which shows a simplified schema for an airline reservations system. Extract from the ER diagram the requirements and constraints that produced this schema. Try to be as precise as possible in your requirements and constraints specification.

1. Entities and Attributes:

- Airport:

- Attributes: Airport_code, City, State, Name.
- Unique Identity: Airport_code.

- Airplane_Type:

- Attributes: Type_name, Max_seats, Company.
- Represents the type of an airplane with its capacity and associated airline company.

- Airplane:

- Attributes: Airplane_id, Total_no_of_seats.
- Unique Identity: Airplane_id.

- Flight:

Attributes: Airline, Number, Weekdays.

Represents a flight schedule with an airline, a unique flight number, and operating weekdays.

- Flight_Leg:

- Attributes: Leg_no, Scheduled_dep_time, Scheduled_arr_time.
- Unique Identity: Leg_no.

- Leg_Instance:

- Attributes: Date, No_of_avail_seats.
- A specific occurrence of a flight leg on a particular date.

- Seat:

- Attributes: Seat_no.
- Represents a seat in an airplane.

- Reservation:

- Attributes: Customer_name, Cphone.
- Represents a reservation made by a customer.

- Fare:

- Attributes: Code, Amount, Restrictions.
- Represents pricing details for a flight.

2. Relationships and Constraints:

- Departure and Arrival (Flight_Leg → Airport):

- A flight leg departs from and arrives at specific airports.
- Constraints:
  - Each Flight_Leg is associated with exactly one departure airport.
  - Each Flight_Leg is associated with exactly one arrival airport.
  - An airport can be associated with multiple flight legs (N).

- Can_Land (Airport → Airplane_Type):

- Indicates which airplane types can land at a specific airport.
- Constraints:
  - An airplane type can land at multiple airports (N).
  - An airport can allow multiple airplane types (M).

- Assigned (Airplane → Leg_Instance):

- Indicates which airplane is assigned to a specific leg.
- Constraints:
  - One airplane can be assigned to multiple legs (N).
  - Each leg is assigned to exactly one airplane (1).

- Instance_of (Leg_Instance → Flight_Leg):

- Links a leg to its corresponding flight leg.
- Constraints:

- Each leg corresponds to exactly one flight leg (1).
- A flight leg can have multiple instances (N).

- Type (Airplane → Airplane_Type):

- Links an airplane to its type.
- Constraints:
  - Each airplane corresponds to exactly one airplane type (1).
  - A type can include multiple airplanes (N).

- Departs and Arrives (Flight → Flight_Leg):

- A flight consists of multiple flight legs.
- Constraints:
  - A flight can have multiple flight legs (N).
  - Each flight leg belongs to exactly one flight (1).

- Reservation → Seat and Leg_Instance:

- A reservation links a customer to a specific seat on a leg.
- Constraints:
  - Each reservation is for one seat (1).
  - A seat can have multiple reservations (N), but is usually constrained per leg.

- Legs (Flight → Flight_Leg):

- Indicates the legs that make up a flight.
-Constraints:

- A flight can consist of multiple legs (N).
- Each leg belongs to exactly one flight (1).

- Fare (Flight → Fare):

- Indicates pricing details for a flight.
- Constraints:
  - A flight can have multiple fares (N).
  - Each fare belongs to exactly one flight (1).