1. **Identified Entities:**
   Airport,Airline,Flight,Passenger,Booking,Boarding_Pass,Baggage,Baggage_Checking ,Security_Check

2. **Attributes of entities:**

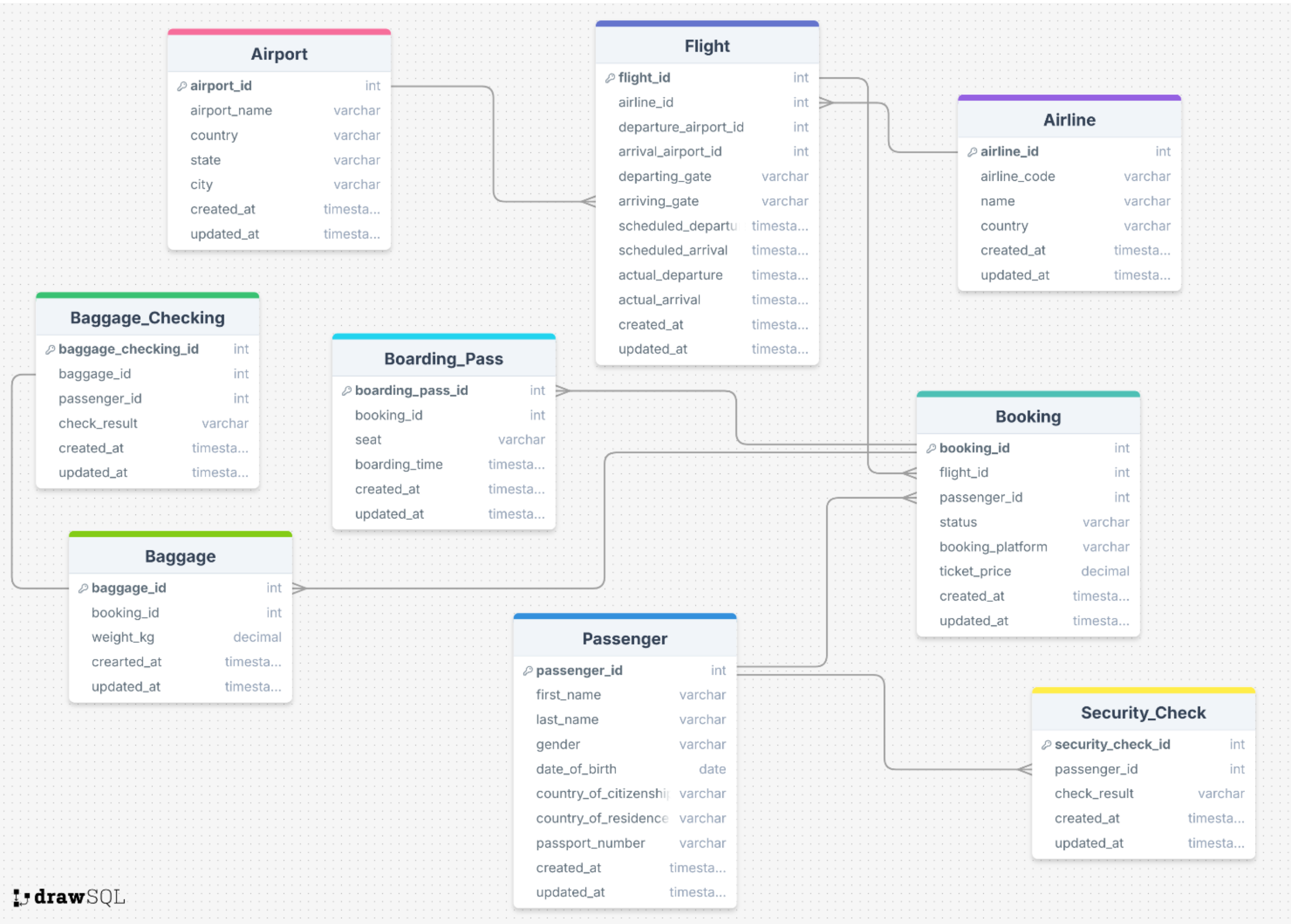
   Airport (airport_id PK, airport_name, country, state, city, created_at, updated_at)
   Airline (airline_id PK, airline_code, name, country, created_at, updated_at)
   Flight (flight_id PK, airline_id FK, departure_airport_id FK, arrival_airport_id FK, departing_gate, arriving_gate, scheduled_departure, scheduled_arrival, actual_departure, actual_arrival, created_at, updated_at)
   Passenger (passenger_id PK, first_name, last_name, gender, date_of_birth, citizenship_country, residence_country, passport_number, created_at, updated_at)
   Booking (booking_id PK, flight_id FK, passenger_id FK, status, booking_platform, ticket_price, created_at, updated_at)
   Boarding_Pass (boarding_pass_id PK, booking_id FK, seat, boarding_time, created_at, updated_at)
   Baggage (baggage_id PK, booking_id FK, weight_kg, created_at, updated_at)
   Baggage_Checking (checking_id PK, baggage_id FK, passenger_id FK, check_result, created_at, updated_at)
   Security_Check (security_check_id PK, passenger_id FK, check_result, created_at, updated_at)

3. **Normalization (3NF):**
   Each table has a primary key.
   All non-key attributes depend only on the primary key (no partial dependencies).
   No transitive dependencies — passenger, flight, booking, and baggage details are stored in separate tables.
   No repeating groups — one record per flight, booking, baggage, boarding pass, and check record**.**

4. **Relations:**
   Airport 1 — N Flight (departure/arrival): Flight must reference exactly one departure and arrival airport.
   Airline 1 — N Flight: Each flight belongs to one airline.
   Flight 1 — N Booking: Bookings cannot exist without a flight.
   Passenger 1 — N Booking: Passenger may have many bookings.
   Booking 1 — N Boarding_Pass: One booking can generate many boarding passes.
   Booking 1 — N Baggage: One booking can have many baggage items.

Baggage 1 — 0..1 Baggage_Checking: Each baggage may have zero or one checking record.
Passenger 1 — N Security_Check: One passenger can have many security checks.

5. ER-Diagram



Airport	
airport_id	int
airport_name	varchar
country	varchar
state	varchar
city	varchar
created_at	timesta...
updated_at	timesta...

Flight	
flight_id	int
airline_id	int
departure_airport_id	int
arrival_airport_id	int
departing_gate	varchar
arriving_gate	varchar
scheduled_departu	timesta...
scheduled_arrival	timesta...
actual_departure	timesta...
actual_arrival	timesta...
created_at	timesta...
updated_at	timesta...

Airline	
airline_id	int
airline_code	varchar
name	varchar
country	varchar
created_at	timesta...
updated_at	timesta...

Baggage_Checking	
baggage_checking_id	int
baggage_id	int
passenger_id	int
check_result	varchar
created_at	timesta...
updated_at	timesta...

Boarding_Pass	
boarding_pass_id	int
booking_id	int
seat	varchar
boarding_time	timesta...
created_at	timesta...
updated_at	timesta...

Booking	
booking_id	int
flight_id	int
passenger_id	int
status	varchar
booking_platform	varchar
ticket_price	decimal
created_at	timesta...
updated_at	timesta...

Baggage	
baggage_id	int
booking_id	int
weight_kg	decimal
crearted_at	timesta...
updated_at	timesta...

Passenger	
passenger_id	int
first_name	varchar
last_name	varchar
gender	varchar
date_of_birth	date
country_of_citizenshi	varchar
country_of_residence	varchar
passport_number	varchar
created_at	timesta...
updated_at	timesta...

Security_Check	
security_check_id	int
passenger_id	int
check_result	varchar
created_at	timesta...
updated_at	timesta...

6. Legend

- **Entity** – shown as a box with the entity name
- **PK** – Primary Key (unique identifier for each record)
- **FK** – Foreign Key (connects to primary key of another table)
- **Attributes** – Characteristics or properties that describe an entity (e.g., name, date, price)
- **Relationships** – lines connecting entities, labeled with
    - 1:1 – one-to-one relationship
    - 1:N – one-to-many relationship
    - N:M – many-to-many relationship (using a linking table)

Brief Description:

- **Airport**: Stores details of all airports.
- **Airline**: Stores airline company data.
- **Flight**: Connects Airline and Airports, contains schedule/actual times.
- **Passenger**: Contains passenger profile info.
- **Booking**: Represents a passenger’s flight reservation.
- **Boarding_Pass**: Generated for each booking, includes seat info.
- **Baggage**: Stores each baggage registered under a booking.
- **Baggage_Checking**: Logs baggage inspection results.
- **Security_Check**: Stores security screening results per passenger.