

Relational Database Diagram - Train Booking System

client
<u>client_id</u> : SERIAL
first_name : VARCHAR(50)
last_name : VARCHAR(50)
age : INT

Stores traveller information.
Each client can make multiple reservations.

trip
<u>trip_id</u> : SERIAL
reservation_ids : INT[]

Groups multiple reservations together
(e.g., for group travel).
reservation_ids: Array of reservation IDs.

train_connection
<u>route_id</u> : VARCHAR(20)
departure_city : VARCHAR(100)
arrival_city : VARCHAR(100)
departure_time : VARCHAR(20)
arrival_time : VARCHAR(20)
train_type : VARCHAR(50)
days_of_operation : VARCHAR(50)
first_class_ticket_rate : VARCHAR(20)
second_class_ticket_rate : VARCHAR(20)

Contains train route information
from CSV data (eu_rail_network.csv).
Not directly linked via FK but
referenced through route_id.

reservation
<u>reservation_id</u> : SERIAL
<i>client_id</i> : INT
route_ids : TEXT[]

Links a client to one or more
train connections.
route_ids: Array storing multiple
route IDs for multi-leg trips.

ticket
<u>ticket_id</u> : SERIAL
<i>reservation_id</i> : INT
travel_class : VARCHAR(20)
total_price : NUMERIC(10,2)

Each reservation has exactly one ticket.
ON DELETE CASCADE: ticket deleted
when reservation is deleted.

Key Constraints:

- SERIAL: Auto-incrementing primary key
- Underlined: Primary Key
- Italicized: Foreign Key
- TEXT[]: PostgreSQL array type
- ON DELETE CASCADE: Automatic deletion