

A6 Problem 4: Airline Schemas

Instructions: Write the relational model schema for your airline database in this file, using the notation we have used all term. Remember to underline primary keys. Include descriptions of other candidate keys or foreign keys (if any) immediately under each relation schema.

Example:

foo(a, b, c)

- *b is also a candidate key*
 - *c is a foreign key to bar.c*
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Problem 4 Schemas:

flight(flight_number, flight_date, flight_time, source_loc, dest_loc, flight_type, iata_code)

- *No other candidate keys*
- *iata_code is a foreign key to aircraft.iata_code*
- *Combined with flight_info table, allows for addition of iata_code to relate a flight to its aircraft*

aircraft(iata_code, model, manufacturer)

- *Unknown uniqueness for model, manufacturer. If each tuple of those is unique, then another candidate key could be (model, manufacturer) - although this is not simple*
- *No foreign keys*

seat(iata_code, seat_number, class, seat_type, exit_row)

- *No other candidate keys*
- *iata_code is a foreign key to aircraft.iata_code*
- *Combined with seating table, allows for primary key of (iata_code, seat_number)*

customer(cust_id, first_name, last_name, email)

- *Potential candidate key could be email if the emails are unique, but this is unknown*
- *No foreign keys*

traveler(cust_id, frequent_flyer_number, passport_number, passport_country, econtact_name, econtact_phone)

- *No other candidate keys*
- *cust_id is a foreign key to customer.cust_id*

purchaser(cust_id, cc_number, exp_date, verification)

- *No other candidate keys*
- *cust_id is a foreign key to customer.cust_id*

purchase(pur_id, cust_id, pur_time, confirmation_number)

- *No other candidate keys*
- *cust_id is a foreign key to purchaser.cust_id*
- *Combined with transaction, allows to introduce cust_id field to track who is involved with which purchase*

ticket(ticket_id, sale_price, pur_id)

- *No other candidate keys*
- *pur_id is a foreign key to purchase.pur_id*

customer_phone(cust_id, phone_number)

- *No other candidate keys*
- *cust_id is a foreign key to customer.cust_id*
- *Created due to possibility for one customer to have multiple phones*

travel_info(ticket_id, cust_id, flight_number, iata_code, seat_number)

- *No other candidate keys*
- *cust_id is a foreign key to customer.cust_id*
- *ticket_id is a foreign key to ticket.ticket_id*
- *flight_number is a foreign key to flight.flight_number*
- *iata_code is a foreign key to aircraft.iata_code*
- *seat_number is a foreign key to seat.seat_number*
- *Combined table with traveler_tickets so that we can introduce the cust_id field*