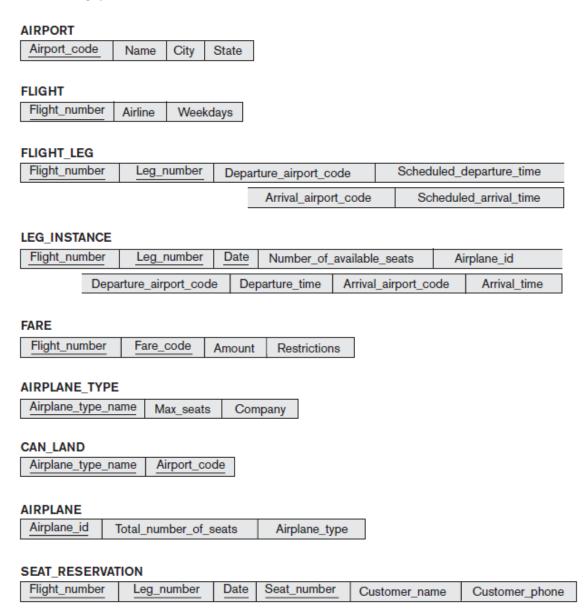
Relational Algebra

In this assignment you will be writing <u>relational algebra</u> (not SQL) queries to select various sets of data

The following queries are based on this schema.



The above schema describes a database for airline flight information. Each FLIGHT is identified by a Flight_number, and consists of one or more FLIGHT_LEGs with Leg_numbers 1, 2, 3, and so on. Each FLIGHT_LEG has scheduled arrival and departure times, airports, and one or more LEG_INSTANCEs—one

for each Date on which the flight travels. FAREs are kept for each FLIGHT. For each FLIGHT_LEG instance, SEAT RESERVATIONs are kept, as are the AIRPLANE

used on the leg and the actual arrival and departure times and airports. An AIRPLANE is identified by an Airplane_id and is of a particular AIRPLANE_TYPE. CAN_LAND relates AIRPLANE_TYPEs to the AIRPORTs at which they can land. An AIRPORT is identified by an Airport code.

Specify the following queries using relational algebra

- 1. For each flight, list the airline, fare and departure time for the first leg of the flight.
- 2. For each flight list the departure airport code for the first leg of the flight and the arrival airport code for the third leg.
- 3. List the fare and first leg departure airport of all flights that land in Kahului (airport code PHOG)
- 4. For the flight 'U1181' list the total number of seats on the aircraft for leg 2 on 3/12/2014
- 5. Convert the following into relational algebra

SELECT foo.a, bar.b, baz.c FROM foo INNER JOIN bar ON bar.id = foo.bar_id INNER JOIN baz ON baz.id = foo.baz_id WHERE foo.z = 50;