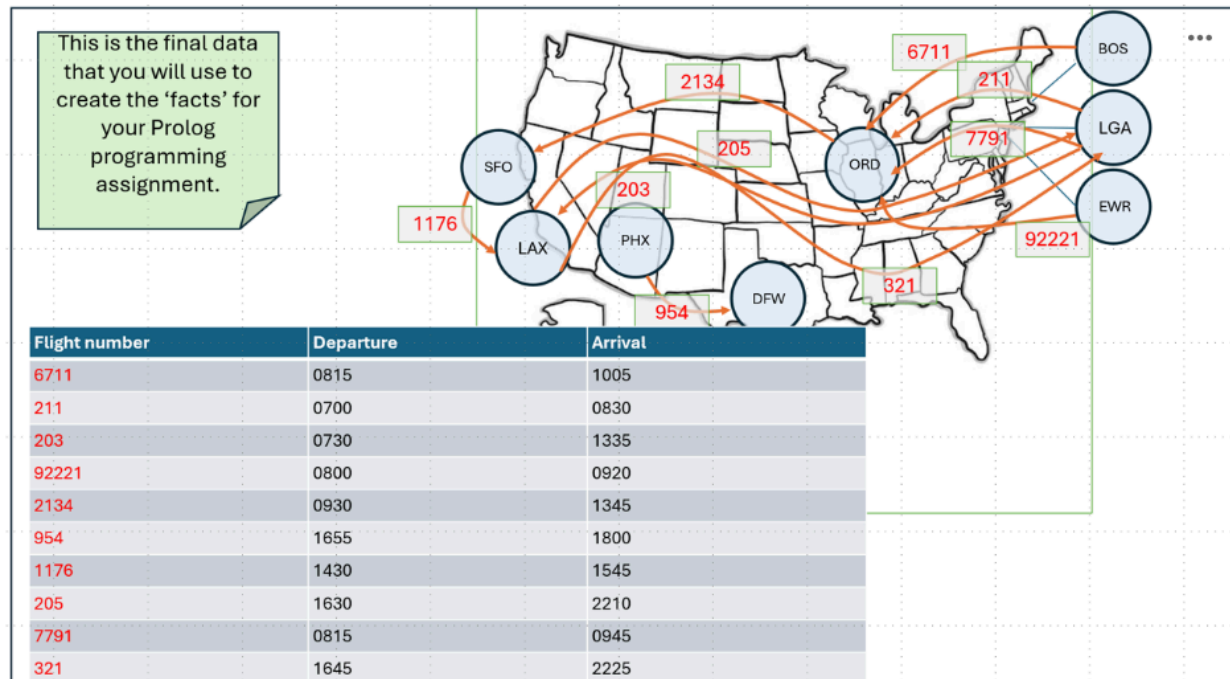


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ProLog Codes:

/*

Flight Schedule Knowledge Base

Format: flight(FlightNumber, DepartureAirport, DepartureTime, ArrivalAirport, ArrivalTime).

*/

```
flight(6711, bos, '0815', ord, '1005').  
flight(211, lga, '0700', ord, '0830').  
flight(203, lga, '0730', lax, '1335').  
flight(92221, ewr, '0800', ord, '0920').  
flight(2134, ord, '0930', sfo, '1345').  
flight(954, phx, '1655', dfw, '1800').  
flight(1176, sfo, '1430', lax, '1545').  
flight(205, lax, '1630', lga, '2210').  
flight(7791, lga, '0815', ord, '0945').  
flight(321, lax, '1645', lga, '2225').
```

/* Rules for Queries */

```

% 1. Where does the flight from PHX go?
flight_from(Departure, FlightNumber, Destination) :-
    flight(FlightNumber, Departure, _, Destination, _).

% 2. Is there a flight to PHX?
flight_to(Destination) :-
    flight(_, _, _, Destination, _).

% 3. What time does the flight from BOS land?
arrival_time(Departure, ArrivalTime) :-
    flight(_, Departure, _, _, ArrivalTime).

% 4. Does the flight from ORD to SFO depart after the flight from EWR to ORD lands?
departs_after_lands(From1, To1, From2, To2) :-
    flight(_, From2, _, To2, ArrivalTime),
    flight(_, From1, DepartureTime, To1, _),
    ArrivalTime @< DepartureTime.

% 5. What time do the flights to ORD arrive?
arrival_times_to(Destination, ArrivalTimes) :-
    findall(Time, flight(_, _, _, Destination, Time), ArrivalTimes).

% 6. What are all the ways to get from LGA to LAX?
route(Start, End, Path) :-
    route_helper(Start, End, [Start], Path).

route_helper(End, End, Visited, Visited).
route_helper(Start, End, Visited, Path) :-
    flight(_, Start, _, Intermediate, _),
    \+ member(Intermediate, Visited),
    route_helper(Intermediate, End, [Intermediate | Visited], Path).

```

1. Where does the flight from PHX go?

Query: `flight_from(phx, Flight, Destination)`

flight_from(phx, Flight, Destination) ←

Flight	Destination	
954	dfw	1

?- flight_from(phx, Flight, Destination)|

Examples History Solutions

☒ table results Run!

2. Is there a flight to PHX?

Query: flight_to(phx).

flight_to(phx).

false ←

?- flight_to(phx).

Examples History Solutions

☒ table results Run!

3. What time does the flight from BOS land?

Query: arrival_time(bos, Time).

arrival_time(bos, Time).		
Time		
'1005'		1

?- arrival_time(bos, Time).

Examples History Solutions

☒ table results Run!

4. Does the flight from ORD to SFO depart after the flight from EWR to ORD lands?

Query: *departs_after_lands(ord, sfo, ewr, ord).*

departs_after_lands(ord, sfo, ewr, ord).		
true		1

?- departs_after_lands(ord, sfo, ewr, ord).

Examples History Solutions

☒ table results Run!

5. What time do the flights to ORD arrive?

Query: *arrival_times_to(ord, Times).*

`arrival_times_to(ord, Times).`

Times	
<code>['1005', '0830', '0920', '0945']</code>	1

?- `arrival_times_to(ord, Times).`

Examples History Solutions
 ☒ table results
 Run!

6. What are all the ways to get from LGA to LAX?

Query: `route(lga, lax, Path).`

`route(lga, lax, Path).`

Path	
<code>[lga, ord, sfo, lax]</code>	1

Next 10 100 1,000 Stop

?- `route(lga, lax, Path).`

Examples History Solutions
 ☒ table results
 Run!