```
$Id: asg5-prolog-flights.mm,v 1.14 2020-02-26 17:20:17-08 - - $
PWD: /afs/cats.ucsc.edu/courses/cse112-wm/Assignments/asg5-prolog-flights
URL: http://www2.ucsc.edu/courses/cse112-wm/:/Assignments/asg5-prolog-flights/
```

1. Logic Programming in Prolog

You will use Prolog to write an airline reservation system for the Twilight Zone Airlines. Given a request to travel from one city to another, print out the flight schedule. For each leg of the trip, print out the departure airport, airport, city name, and time. For example:

```
?- fly( lax, sea).
depart   LAX   Los Angeles      14:22
arrive   SFO   San Francisco    15:29
depart   SFO   San Francisco    16:02
arrive   SEA   Seattle-Tacoma   17:42
```

A database has been provided which lists some airports, their cities, and the North latitudes and West longitudes of the airports. A flight schedule has also been provided listing the departure and arrival airports and the departure times.

2. Notes about the logic of the program

(a) To compute the distance between airports, use the haversine formula. The database contains degrees and minutes, which must be converted to radians. The result must be converted to miles.

(b) Planes fly at a constant speed of 500 miles per hour and always using great circle paths, so the arrival time can be computed from the departure time.

(c) A flight transfer always takes 30 minutes, so during a transfer at a hub, the departure of a connecting flight must be at least 30 minutes later than the arrival of the incoming flight.

(d) There are no overnight trips. The complete trip departs and arrives in the same day, although the final arrival time may be shown as greater than 23:59.

3. Running swipl

You may load a script by the command
    swipl -s *filename.pl*
or by just running **swipl** at the command line, then loading a module with the Prolog command [*filename*] In this latter case, do not include the **.pl** suffix in the consult command. To avoid colorized diagnostics from **swipl**, you may put the following line in **$HOME/.swiplrc**:
    :- set_prolog_flag(color_term,false).
When searching for Prolog functions, include the string **swipl** in your search to avoid finding advice about other Prolog implementations.

4. What to Submit

Submit one file: **functions.pl**. Also submit **README**, and if applicable, **PARTNER**. The grader will copy in the files **.score/database.pl** and the test data.