1. Write a Prolog program for a Planets Database with the following facts.
   orbits(mercury, sun).
   orbits(venus, sun).
   orbits(earth, sun).
   orbits(mars, sun).
   orbits(moon, earth).
   orbits(phobos, mars).
   orbits(deimos, mars).

Program :

```
% Facts

orbits(mercury, sun).

orbits(venus, sun).

orbits(earth, sun).

orbits(mars, sun).

orbits(moon, earth).

orbits(phobos, mars).

orbits(deimos, mars).


% Queries

% Example usage:

% ?- orbits(mercury, X).

% This query will find what object Mercury orbits.


% ?- orbits(planet, sun).

% This query will find all planets that orbit the sun.


% ?- orbits(Object, sun).
```

% This query will find all objects that orbit the sun.

% You can customize queries based on your needs.

Output :

% Facts

orbits(mercury, sun).

orbits(venus, sun).

orbits(earth, sun).

orbits(mars, sun).

orbits(moon, earth).

orbits(phobos, mars).

orbits(deimos, mars).

% Queries and Output

?- orbits(mercury, X).

% Output: X = sun.

?- orbits(planet, sun).

% Output: false. (No direct fact stating a planet orbits the sun)

?- orbits(Object, sun).

% Output: Object = mercury ;

% Object = venus ;

% Object = earth ;

% Object = mars.

?- orbits(moon, Object).

% Output: Object = earth.

?- orbits(phobos, Object).

% Output: Object = mars.

?- orbits(planet, Object).

% Output: false. (No direct fact stating a planet orbits an object)