```
% file: shapes_world.pro

% rectangle(N, height(H), width(W), color(C)) :: N is name of
rectangle.
% L is length, W is width, and C is color.

rectangle(penelope, height(15), width(5), color(yellow)).
rectangle(maya, height(8), width(20), color(red)).
rectangle(tobi, height(10), width(8), color(green)).

% ellipse(N, majorradius(A), minorradius(B), color(C)) :: N is name of
the ellipse.
% A is the major radius, B is the minor radius and C is color.

ellipse(steve, majorradius(4), minorradius(3), color(red)).
ellipse(ron, majorradius(2), minorradius(7), color(green)).
ellipse(mike, majorradius(3), minorradius(4), color(blue)).

% prints rectangle names to user.

rectangles :- rectangle(N, _, _, _), write(N), nl, fail.
rectangles.

% prints ellipse names to user.

ellipses :- ellipse(N, _, _, _), write(N), nl, fail.
ellipses.

% prints all shapes names
shapes :- rectangles, ellipses.

% finds if shape with name N is color green or red.

red(N) :- ellipse(N, _, _, color(red)).
red(N) :- rectangle(N, _, _, color(red)).

green(N) :- ellipse(N, _, _, color(green)).
green(N) :- rectangle(N, _, _, color(green)).

% finds if shape is small or large by Name and area.
large(N) :- area(N, A), A >= 100.
small(N) :- area(N, A), A < 100.

% gives area of shape by Name, where N is Name.

area(N, A) :- ellipse(N, majorradius(A), minorradius(B), _), A is 3.14
* A * B.
area(N, A) :- rectangle(N, height(H), width(W), _), A is H * W.
```