% ------------------------------------

% Fruits and their Colors

% ------------------------------------

fruit\_color(apple, red).

fruit\_color(apple, green).

fruit\_color(banana, yellow).

fruit\_color(grape, green).

fruit\_color(grape, purple).

fruit\_color(orange, orange).

fruit\_color(mango, yellow).

fruit\_color(mango, red).

fruit\_color(blueberry, blue).

fruit\_color(strawberry, red).

% ------------------------------------

% Query Rule

% ------------------------------------

color\_of(Fruit, Color) :-

fruit\_color(Fruit, Color).

% ------------------------------------

% Main Program (demonstration of backtracking)

% ------------------------------------

:- initialization(main).

main :-

nl, write('--- Fruit and Color Knowledge Base ---'), nl, nl,

write('Example 1: What colors can an apple be?'), nl,

color\_of(apple, C1), write(' - Apple is '), write(C1), nl,

fail ; nl, % forces backtracking to get all answers

write('Example 2: Which fruits can be red?'), nl,

fruit\_color(F, red), write(' - '), write(F), nl,

fail ; nl,

write('Example 3: All fruit-color pairs:'), nl,

fruit\_color(Fruit, Color),

write(' - '), write(Fruit), write(' is '), write(Color), nl,

fail ; nl,

halt.