

**SWISH** File Edit Examples Help

Notebook +

```

1 happy(X) :- man(X),rich(X),famous(X).
2 happy(X) :- woman(X),healthy(X).
3 happy(X) :- woman(X),wealthy(X).
4 happy(X) :- woman(X),wise(X).
5
6 man(jim). man(bob).
7 healthy(jim). rich(jim). wise(jim).
8 woman(jane). wealthy(jane).
9 famous(bob).

```

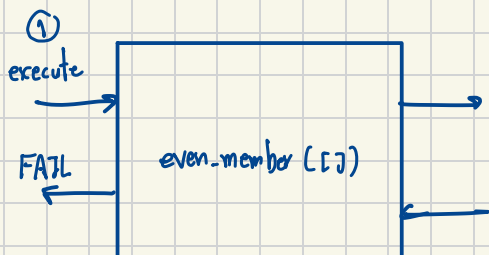
?- happy(jim).  
 false

?- happy(jane).  
 true

?- happy(bob).  
 false

even\_member([ ]).

even\_member([H|T]) :- even(H), even\_member(T).

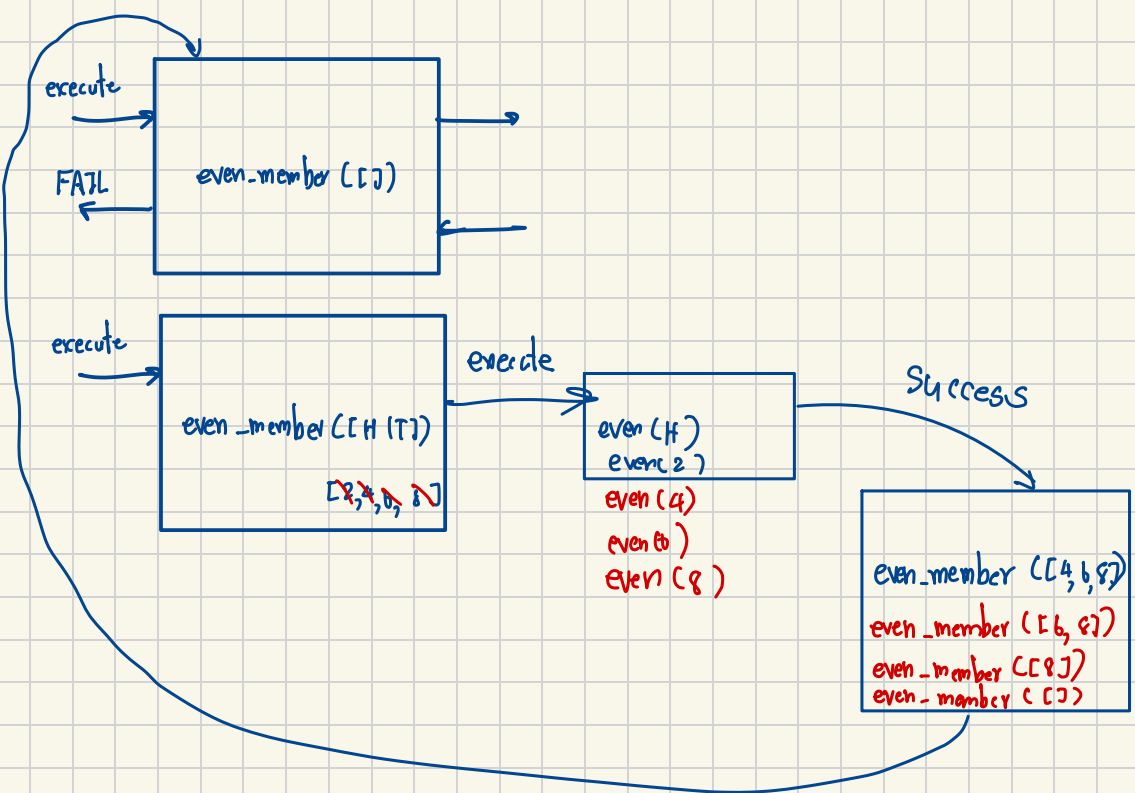


even\_number([2,4,6,8])

execute (even\_member([2,4,6,8]))

execute (even\_member([ ])).

FAIL even\_member([ ]).



Sukree Sinthupinyo x Logic Programming.gptx - Google x SWISH -- SWI-Prolog for Sharing x +

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Notebook

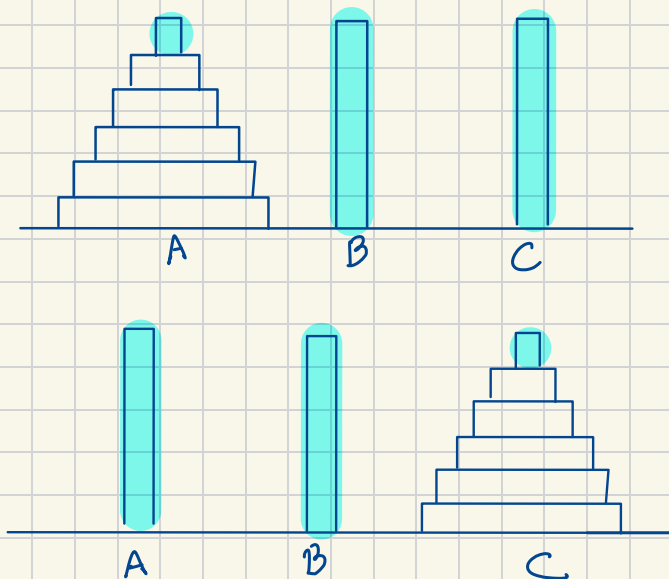
```

1 print_a_list([1,2,3,4]) :- write('true'), fail, !, print_a_list([ ]).
2
3
4 my_member(H,[_]).
5 my_member(H,[_:T]) :- my_member(H,T).
6
7 even(X) :- X is X mod 2, X = 0.
8
9 even_member([ ]).
10 even_member([H:T]) :- even(H), even_member(T).
11
12 double_list([ ],[ ]).
13 double_list([H:T],[H1:T1]) :- H1 is H*2, double_list(T,T1).
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Notebook
even_member([]).
even_member([H|T]) :- even(H), even_member(T).
double_list([], []).
double_list([H|T], [H1|T1]) :- H1 is H*2, double_list(T, T1).
even_of([], []).
even_of([H|T], [H|T1]) :- even(H), even_of(T, T1).
even_of([_|T], T1) :- even_of(T, T1).
reverse_a_list([], []).
reverse_a_list([H|_], Ans) :- reverse_a_list(T, T1), append(T1, [H], Ans).
?- print_a_list([1,2,3,4]).
1
2
3
4
true
```

or T number reverse

## Tower of Hanoi



$toh(c_1, A, B, \_)$  :- write(A), write('→'), write(B), nl.  
 $toh(N, A, B, c)$  :-  $N$  is  $N-1$ ,  
     ↓  
     move 1, then      ให้พัก       $toh(N_1, A, C, B)$ ,  $toh(c_1, A, B)$ ,  $toh(N_1, C, B, A)$

```

1 int(1). int(2). int(3). int(4). int(5). int(6).
2
3 even(X) :- Rem is X mod 2, Rem=0.
4
5 all_even(X) :- int(X), even(X), write(X), fail.

```

?- all\_even(X).  
 246false

ไม่ x    ไม่ให้ write

หั่น Redo อีก art (!)

ปัญหาหลังจบแล้ว

สิ่งที่ยากแล้ว

ทุก กี่

```

1 move(state(middle,onbox,middle,hasnot),grasp,state(middle,onbox,middle,has)).
2 move(state(P,onfloor,P,H),climb,state(P,onbox,P,H))
3 move(state(P1,onfloor,P1,H),push(P1,P2),state(P2,onfloor,P2,H)).
4 move(state(P1,onfloor,B,H),walk(P1,P2),state(P2,onfloor,B,H)).
5
6
7

```

?- all\_even(X).

2

```

1 move(state(middle,onbox,middle,hasnot),grasp,state(middle,onbox,middle,has)).
2 move(state(P,onfloor,P,H),climb,state(P,onbox,P,H)).
3 move(state(P1,onfloor,P1,H),push(P1,P2),state(P2,onfloor,P2,H)).
4 move(state(P1,onfloor,B,H),walk(P1,P2),state(P2,onfloor,B,H)).
5
6 depth_first(State,State,[],[]).
7 depth_first(State| Predicate defined in line 12) :-
8     findsuccessor(StartState,Successor,Operator),
9     depth_first(Successor,GoalState,Ans1),
10    Ans=[Operator|Ans1].
11
12 findsuccessor(OldState,NewState,Operator) :-
13     move(OldState,Operator,NewState).
14
15
16

```

```

18
19
20 depth_first(state(atdoor,onfloor,atwindow,hasnot),state(middle,onbox,middle,has),Ans).
21
22 Ans = [walk(atdoor,atwindow),push(atwindow,middle),climb,grasp]
23
24 Next 10 100 1,000 Stop

```

```

print_a_list([]).

print_a_list([H|T]) :- write(H),nl,
print_a_list(T).

my_member(H,[H|_]).

my_member(H,[_|T]) :- my_member(H,T).

even(X) :- X1 is X mod 2, X1 = 0.

even_member([]).

even_member([H|T]) :- even(H),
even_member(T).

double_list([],[]).

double_list([H|T],[H1|T1]) :- H1 is H*2,
double_list(T,T1).

even_of([],[]).

even_of([H|T],[H|T1]) :- even(H),
even_of(T,T1).

even_of([_|T],T1) :- even_of(T,T1).

reverse_a_list([],[]).

reverse_a_list([H|T],Ans) :-
reverse_a_list(T,T1), append(T1,[H],Ans).

toh(1,A,B,_ ) :- write(A),write('-
>'),write(B),nl.

toh(N,A,B,C) :- N1 is N-
1,toh(N1,A,C,B),toh(1,A,B,C),toh(N1,C,B,A).

```