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The image displays two screenshots of the SWISH Prolog IDE interface. The top screenshot shows a Prolog program with five clauses: two for `find_max` and two for `find_min`. The right-hand pane shows the execution of `find_max(100,65,Max)`, resulting in `Max = 100`. The bottom screenshot shows a Prolog program with two clauses: `series` and `parallel`. The right-hand pane shows the execution of `series(10,12,R3)`, resulting in `R3 = 22`. Both screenshots feature a large owl illustration in the background of the right-hand pane.

**Top Screenshot:**

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prolog\_tutorials Program +

```
1 find_max(X, Y, X) :- X >= Y, !.  
2 find_max(X, Y, Y) :- X < Y.  
3  
4 find_min(X, Y, X) :- X <= Y, !.  
5 find_min(X, Y, Y) :- X > Y.
```

find\_max(100,65,Max)  
**Max = 100**

?- find\_max(100,65,Max)

Examples History Solutions table results Run!

**Bottom Screenshot:**

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prolog\_tutorials Program +

```
1 series(R1,R2,Re) :- Re is R1 + R2.  
2 parallel(R1,R2,Re) :- Re is ((R1 * R2) / (R1 + R2)).
```

series(10,12,R3)  
**R3 = 22**

?- series(10,12,R3)

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prolog\_tutorials Program +

```
1 dog(rottweiler).
2 cat(munchkin).
3 animal(A) :- cat(A).
```

animal(munchkin)

true

?- animal(munchkin)

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prolog\_tutorials Program +

```
1 female(pam).
2 female(liz).
3 female(pat).
4 female(ann).
5 male(jim).
6 male(bob).
7 male(tom).
8 male(peter).
9 parent(pam,bob).
10 parent(tom,bob).
11 parent(tom,liz).
12 parent(bob,ann).
13 parent(bob,pat).
14 parent(pat,jim).
15 parent(bob,peter).
16 parent(peter,jim).
17 mother(X,Y):- parent(X,Y),female(X).
18 father(X,Y):- parent(X,Y),male(X).
19 haschild(X):- parent(X,_).
20 sister(X,Y):- parent(Z,X),parent(Z,Y),female(X),X\==Y.
21 brother(X,Y):-parent(Z,X),parent(Z,Y),male(X),X\==Y.
```


mother(X,bob)

X = pam

Next 10 100 1,000 Stop

?- mother(X,bob)


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 **SWISH**

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prolog\_tutorials Program

```
1 female(pat).
2 female(ann).
3
4 male(jim).
5 male(bob).
6 male(tom).
7 male(peter).
8
9 parent(pam,bob).
10 parent(tom,bob).
11 parent(tom,liz).
12 parent(bob,ann).
13
14 parent(bob,pat).
15 parent(pat,jim).
16 parent(bob,peter).
17 parent(peter,jim).
18
19 mother(X,Y):- parent(X,Y),female(X).
20 father(X,Y):-parent(X,Y),male(X).
21 sister(X,Y):-parent(Z,X),parent(Z,Y),female(X),X\==Y.
22 brother(X,Y):-parent(Z,X),parent(Z,Y),male(X),X\==Y.
23 grandparent(X,Y):-parent(X,Z),parent(Z,Y).
24 grandmother(X,Z):-mother(X,Y),parent(Y,Z).
25 grandfather(X,Z):-father(X,Y),parent(Y,Z).
26 wife(X,Y):-parent(X,Z),parent(Y,Z),female(X),male(Y).
27 uncle(X,Z):-brother(X,V),parent(V,Z).
```



grandfather(X,jim)

X = bob

Next 10 100 1,000 Stop

?- grandfather(X,jim)

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☐ table results

Run!

 **SWISH**

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prolog\_tutorials Program

```
1 likes(ram,sita).
2 likes(bill,cindy).
3 girl(sema).
4 red(rose).
5 own(john,gold).
```



likes(bill,cindy)

true

?- likes(bill,cindy)

Examples History Solutions

☐ table results

Run!

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prolog\_tutorials Program +

```
1 can_cook(priya).
2 can_cook(jaya).
3 can_cook(tiyasha).
4 likes(priya,jaya):- can_cook(jaya).
5 likes(priya,tiyasha):- can_cook(tiyasha).
```

can\_cook(X)

X = priya  
X = jaya  
X = tiyasha

?- can\_cook(X)

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prolog\_tutorials Program +

```
1 fib(0, 1) :-
2 !.
3 fib(N, F) :-
4     fib(1, N, 1, 1, F).
5
6 fib(N, N, _, F, F) :-
7 !.
8 fib(N0, N, F0, F1, F) :-
9     N1 is N0 + 1,
10    F2 is F0 + F1,
11    fib(N1, N, F1, F2, F).
```


time(fib(5, Fib)).

8 inferences, 0.000 CPU in 0.000 seconds (89% CPU, 449110 Lips)

Fib = 8




?- time(fib(5, Fib)).

Examples History Solutions table results Run!

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prolog\_tutorials Program

```
1 likes(fred,beer).
2 likes(fred,cheap_cigars).
3 likes(fred,monday_night_football).
4
5 likes(sue,jogging).
6 likes(sue,yogurt).
7 likes(sue,bicycling).
8 likes(sue,amy_goodman).
9
10 likes(mary,jogging).
11 likes(mary,yogurt).
12 likes(mary,bicycling).
13 likes(mary,rush_limbaugh).
14
15 health_freak(X) :-
16     likes(X,yogurt),
17     likes(X,jogging).
18
19 left_wing(X) :-
20     likes(X,amy_goodman).
21
22 right_wing(X) :-
23     likes(X,rush_limbaugh).
24
25 low_life(X) :-
26     likes(X,cheap_cigars).
```

 low\_life(fred)

true

 health\_freak(mary)


true

?- health\_freak(mary)

Examples History Solutions




☐ table results

Run

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   634

prolog\_tutorials Program

```
1 sing_a_song(ananya).
2 listens_to_music(rohit).
3 listens_to_music(ananya):- sing_a_song(ananya).
4 happy(ananya):- sing_a_song(ananya).
5 happy(rohit):- listens_to_music(rohit).
6 plays_guitar(rohit):-listens_to_music(rohit).
```

 happy(Y)

Y = ananya


Y = rohit

?- happy(Y)

Examples History Solutions




☐ table results

Run

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prolog\_tutorials Program

```
1 sing_a_song(ananya).
2 listens_to_music(rohit).
3 listens_to_music(ananya):- sing_a_song(ananya).
4 happy(ananya):- sing_a_song(ananya).
5 happy(rohit):- listens_to_music(rohit).
6 plays_guitar(rohit):-listens_to_music(rohit).
```



happy(Y)

Y = ananya  
Y = rohit

?- happy(Y), sing\_a\_song(Y)

Example History Solutions

☐ table results

Run