

PRACTICAL – 3

EXAMPLE 1 :

```
calc.pl test.pl +
File Edit View

calc :- X is 100 + 200, write('100 + 200 is '), write(X), nl,
        Y is 400 - 150, write('400 - 150 is '), write(Y), nl,
        Z is 10 * 300, write('10 * 300 is '), write(Z), nl,
        A is 100 / 30, write('100 / 30 is '), write(A), nl,
        B is 100 // 30, write('100 // 30 is '), write(B), nl,
        C is 100 ** 2, write('100 ** 2 is '), write(C), nl,
        D is 100 mod 30, write('100 mod 30 is '), write(D), nl.
```

QUERY :

```
SWI-Prolog (AMD64, Multi-threaded, version 9.3.12)
File Edit Settings Run Debug Help
Welcome to SWI-Prolog (threaded, 64 bits, version 9.3.12)
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For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?-
% c:/AI LAB PRACTICAL/calc.pl compiled 0.00 sec, 1 clauses
?- calc.
100 + 200 is 300
400 - 150 is 250
10 * 300 is 3000
100 / 30 is 3.3333333333333335
100 // 30 is 3
100 ** 2 is 10000
100 mod 30 is 10
true.
```

```

SWI-Prolog (AMD64, Multi-threaded, version 9.3.12)
File Edit Settings Run Debug Help
?- A is 30, B is 3, C is A + B + A * B + sin(A).
A = 30,
B = 3,
C = 122.01196837590714.

?- 1 + 2 =:= 2 + 1.
true.

?- 1 + 2 = 2 + 1.
false.

?- 1 + A = B + 2.
A = 2,
B = 1.

?- 5 < 10.
true.

?- 5 > 10.
false.

```

EXAMPLE 2 (Count to 10 program) :

```

count.pl
File Edit View

count_to_10(10) :- write(10),nl.
count_to_10(X) :-
    write(X), nl,
    Y is X + 1,
    count_to_10(Y).

```

QUERY :

```

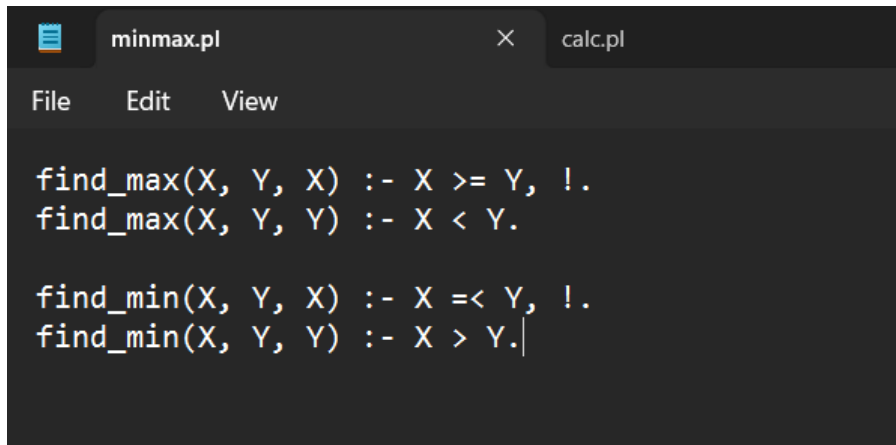
SWI-Prolog (AMD64, Multi-threaded, version 9.3.12)
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?-
% c:/AI LAB PRACTICAL/count.pl compiled 0.00 sec, 2 clauses
?- count_to_10(3).
3
4
5
6
7
8
9
10
true|

```

EXAMPLE 3 (Minimum and Maximum) :

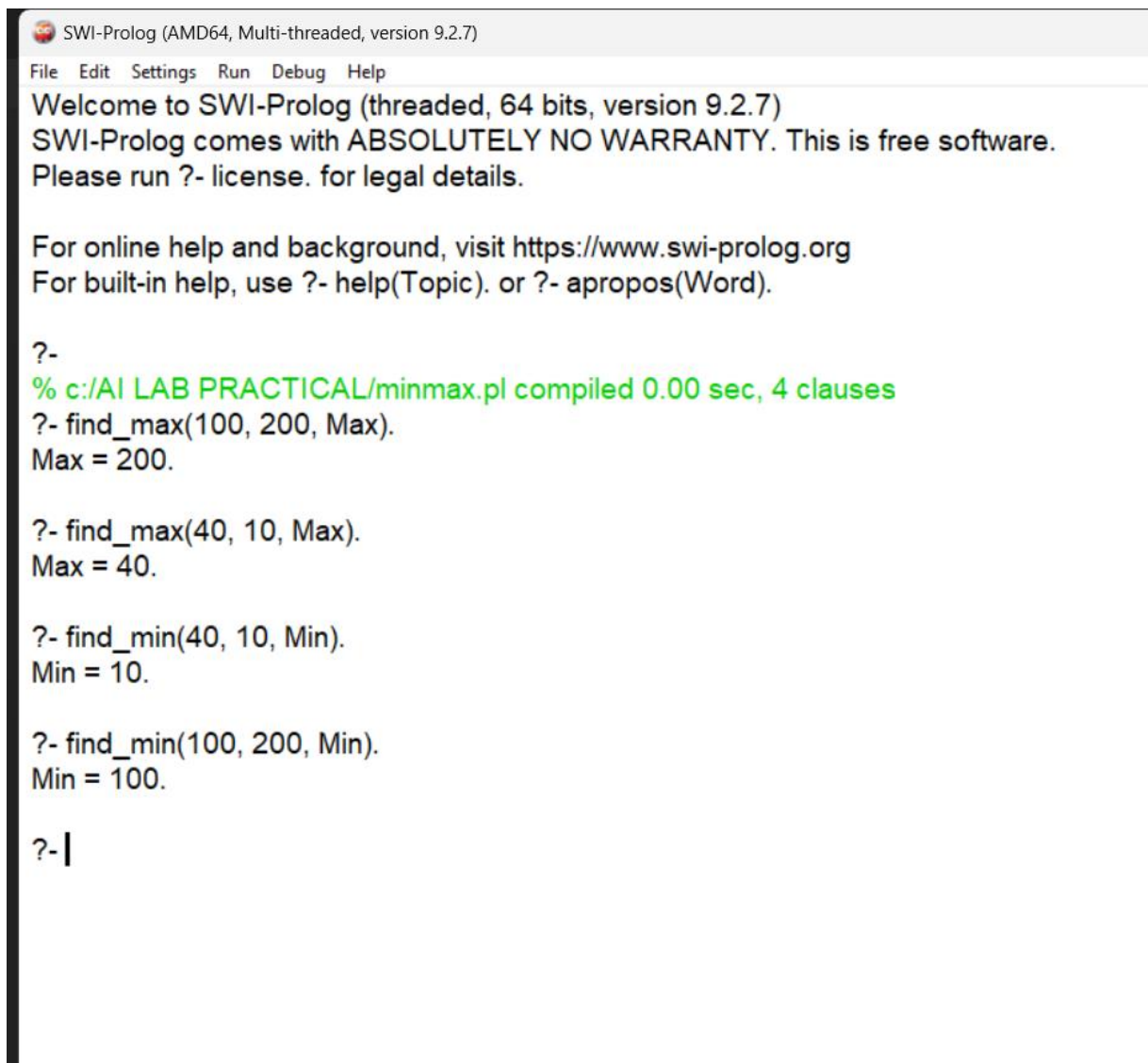


```
minmax.pl  calc.pl
File Edit View

find_max(X, Y, X) :- X >= Y, !.
find_max(X, Y, Y) :- X < Y.

find_min(X, Y, X) :- X <= Y, !.
find_min(X, Y, Y) :- X > Y.
```

QUERY :



```
SWI-Prolog (AMD64, Multi-threaded, version 9.2.7)
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?-
% c:/AI LAB PRACTICAL/minmax.pl compiled 0.00 sec, 4 clauses
?- find_max(100, 200, Max).
Max = 200.

?- find_max(40, 10, Max).
Max = 40.

?- find_min(40, 10, Min).
Min = 10.

?- find_min(100, 200, Min).
Min = 100.

?- |
```

EXAMPLE 4 :

```
test.pl count_down.pl
File Edit View

% If-Then-Else statement

gt(X, Y) :- X >= Y, write('X is greater or equal').
gt(X, Y) :- X < Y, write('X is smaller').

% If-Elif-Else statement

gte(X, Y) :- X > Y, write('X is greater').
gte(X, Y) :- X == Y, write('X and Y are same').
gte(X, Y) :- X < Y, write('X is smaller').
```

QUERY :

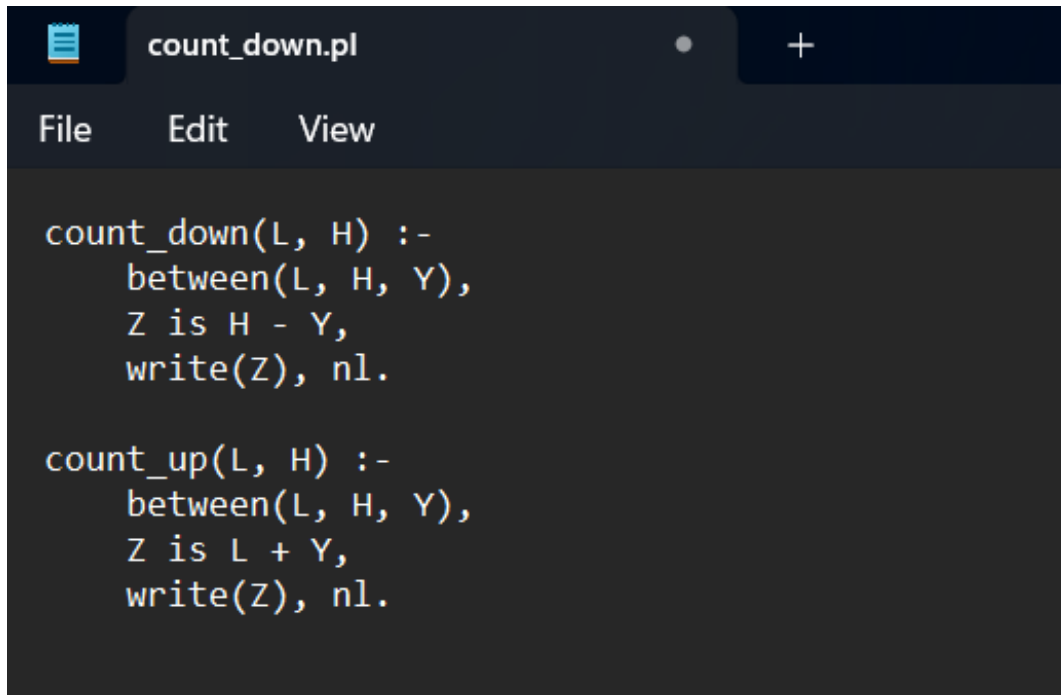
```
SWI-Prolog (AMD64, Multi-threaded, version 9.2.7)
File Edit Settings Run Debug Help
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?-
% c:/AI LAB PRACTICAL/test.pl compiled 0.00 sec, 5 clauses
?- [test].

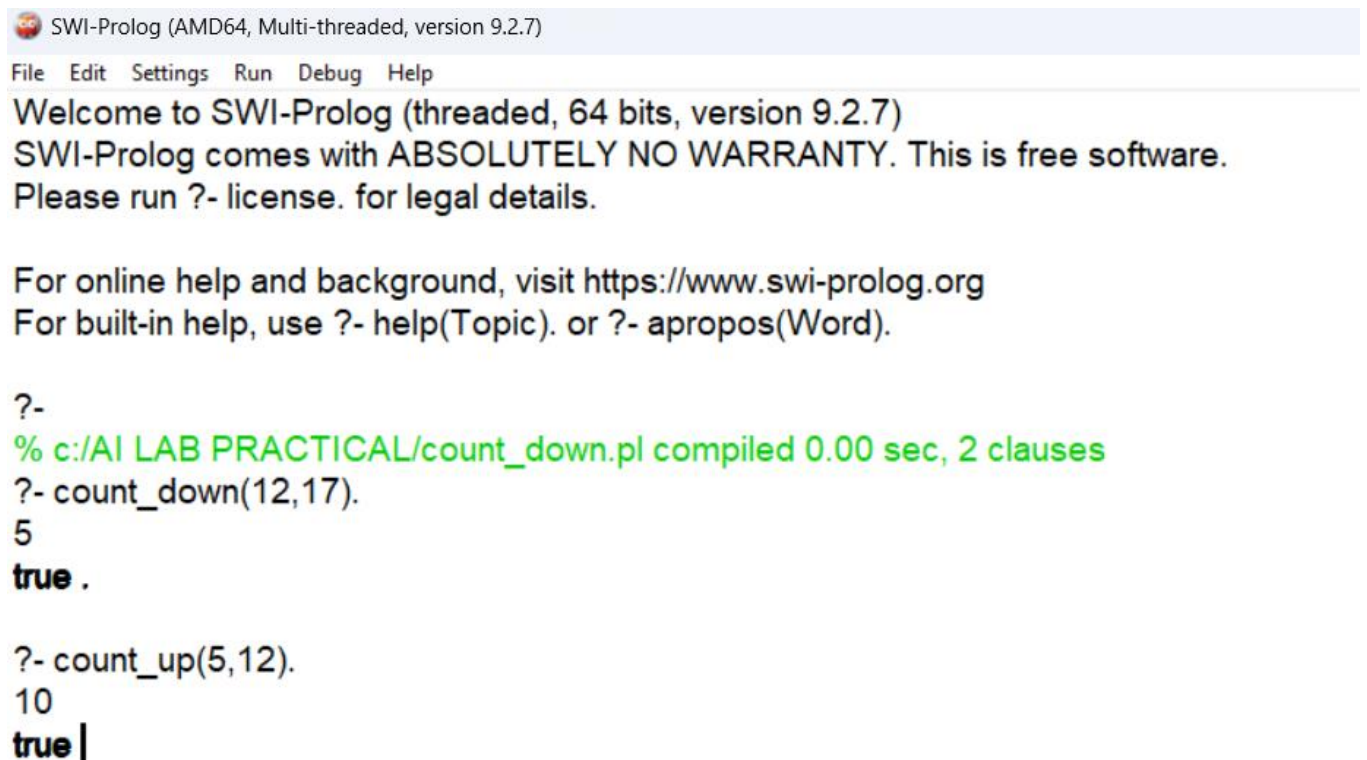
ERROR: source_sink 'test' does not exist
ERROR: In:
ERROR: [26] throw(error(existence_error(source_sink,test),_180))
ERROR: [21] '$resolve_source_path'(test_212,'<garbage_collected>') at c:/program files/swipl/boot/init.pl:2507
ERROR: [20] '$load_file_e'(test,user,[expand(false),...]) at c:/program files/swipl/boot/init.pl:2476
ERROR: [19] '$load_file'(test,user,'<garbage_collected>') at c:/program files/swipl/boot/init.pl:2443
ERROR: [11] toplevel_call('<garbage_collected>') at c:/program files/swipl/boot/toplevel.pl:1317
ERROR:
ERROR: Note: some frames are missing due to last-call optimization.
ERROR: Re-run your program in debug mode (-: debug.) to get more detail.
?- |
```

EXAMPLE 5 (Count down and count up Program) :



```
count_down(L, H) :-  
    between(L, H, Y),  
    Z is H - Y,  
    write(Z), nl.  
  
count_up(L, H) :-  
    between(L, H, Y),  
    Z is L + Y,  
    write(Z), nl.
```

QUERY :



```
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?-  
% c:/AI LAB PRACTICAL/count_down.pl compiled 0.00 sec, 2 clauses  
?- count_down(12,17).  
5  
true .  
  
?- count_up(5,12).  
10  
true |
```