University of Cyprus

Department of Computer Science

EPL434 - Logic Programming and Artificial Intelligence

Arithmetic in Prolog

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Arithmetic Example	**Prolog Notation**
6+2=8	8 is 6+2.
6*2=12	12 is 6*2.
6-2=4	4 is 6-2.
6-8=-2	-2 is 6-8.
6/2=3	3 is 6/2.
7/2=3	3 is 7/2.
mod(7,2)=1 (remainder of 7/2)	1 is mod(7,2).

Example 1

add_3_and_double(X,Y) :- Y is (X+3)*2.

?- add_3_and_double(1,X).

X = 8

?- add_3_and_double(2,X).

X = 10

Example 2

?- X is 3+2*4.

X = 11

Comparing integers in Prolog

Arithmetic Example	Prolog Notation
$x < y$	X < Y.
$x \leq y$	X =< Y.
$x = y$	X =:= Y.
$x \neq y$	X \= Y.
$x \geq y$	X >= Y.
$x > y$	X > y.

Examples

```
2 < 4.
yes
2 =< 4.
yes
4 =< 4.
yes
4=:=4.
yes
4=\=5.
yes
4=\=4.
no
4 >= 4.
yes
4 > 2.
yes
4=4.
yes
2+2 = 4.
no
2+2 =:= 4.
yes
```