

5.5 Input and Output

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Input and output are (desired) side effects needed in practical prog. languages.

Up to now:

input : arguments for pred. symbols
output : answer subst.

But Prolog also has built-in predicates for "proper" input and output.

Pred: write/1

Proof of $\text{write}(t)$ succeeds, as a side-effect, the term t is written to the current output stream. (Default output stream: screen).

?- X is $2+3$, write(X).

5 ← printed on screen

$X=5$ ← resulting answer subst.

$\text{mult}(X, Y) :- \text{Result is } X * Y, \text{write}(X * Y)$
 $\text{write}(' = '), \text{write}(\text{Result}).$

?- $\text{mult}(3, 4).$

$3 * 4 = 12$

Result = 12

Side-Effects of Predicates are not undone when backtracking in the SLD tree:

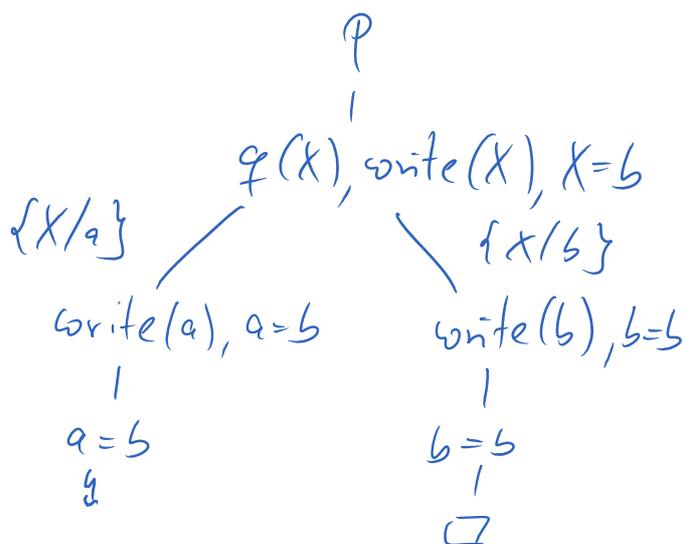
$q(a).$

$q(b).$

$p :- q(X), \text{write}(X), X=b.$

$?- p.$

$a\ b$



There is also a predicate `nl/0` for "new line".

$?- \text{write}(a), \text{nl}, \text{write}(b), \text{nl}, \text{write}(c).$

a

b

c

Pre-defined predicate `read/1` for input.

`read(t)` reads a term s from the

current input stream (default: keyboard)

end of

the term
is
marked
with. and then tries to unify t and s .
If this does not succeed, then
read(t) fails.

Ex: IO program computing squares.

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One can also do input/output with files.

For this, one has to change the input/output stream.

setIn / 1 ← changes the input resp.

setOut / 1 output stream

setIn / 0 ← sets input/output stream

setOut / 0 back

When reading reaches the end of a file, then
read(X) results in the answer subst.

$X = \text{end_of_file}$.

Ex: input file could contain

3. -4.

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