CFG: A simple handler for config files and command line options

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Wpref: ~menzies/pl/src/prod/config.pl, January 30, 2003.

Abstract How to handle options.

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1 Overview

CFG lets programmers and users defined a set of options using the syntax

option = setting

For application X, the options can be placed in

- A default setting files called de faults.X.
- A user preference file called config.X.
- Or, on the Prolog command line. When placing options on the command line, they must come *after* a -- mark.

Options in files have be followed by a full stop ". ". Options on the command line have to be followed by a space. CFG loads settings in the order *defaults.X*, *config.X*, then command line. If the samle option is seen more than once during this load, then the *latest* option overrides all the

older ones. That is, command-line options override config.X options which override defaults.X options.

After all the above loads, options can be managed in several ways. For example,

ListOfOptionNames := ListOfOptionValues pairs items in the two lists.

- Option := Value cheks that *option* has *value* and fails otherwise.
- ?X checks that the *option* called X has the value 1. Good for boolean tests.

2 Loading

```
1 := load_files([lib % grab standard stuff
2 ,cfg0 % pre-load actions
3 ,cfg1 % predicates
4 ,cfg2 % start-up commands
5 ],[silent(yes),if(changed)]).
```

3 Pre-load actions

3.1 Operators

How to access an option:

6 :- op(700,xfx, :=).

We also need a "?", but that is predefined, in SWI-Prolog as op(500, fx, ?).

3.2 Flags

Options are stored internally in option/2 facts.

7 :- dynamic option/2. 8 :- discontiguous option/2.

3.3 Hooks

Options are set via a side effect of term_expansion/2.

```
9 term_expansion(A=B,[]) :- set(A=B).
```

4 Main drivers

4.1 Setting options

Blast all previous knowledge of this option and set a new value:

```
10 set(X=Y) :-
11 retractall(option(X,_)),
12 assert(option(X,Y)).
```

4.2 Accessing options

Run down a list of accessors.

13 [] := [] :- !. 14 [H0|T0] := [H|T] :- !, H0 := H, T0 := T.

Primitive accessor.

15 X := Y :- option(X,Z),!, Y=Z.

Complain if option not known.

16 X := _ :- !, barph(missingOption(X)).

Boolean options- check for a "1" value.

17 ?X :- atomic(X), X := 1.

Process the command line options.

18 commandLine :-

```
19 current_prolog_flag(argv, Argv),
20 append(_, [--|Args], Argv), !,
21 concat_atom(Args, ' ', SingleArg),
22 term_to_atom(Term, SingleArg),
23 c2l(Term,List),
24 forall(member(One,List), set(One)).
25 commandLine.
```

5 Start-up Actions

None here but in your application X, you should have a start-up actions to sneak in defaults.X, then config.X file, then process the command line. E.g.

```
:- sneak(
    ['defaults.x' % see §??
    ,'config.x' % see §??
]).
```

```
:- commandLine.
```

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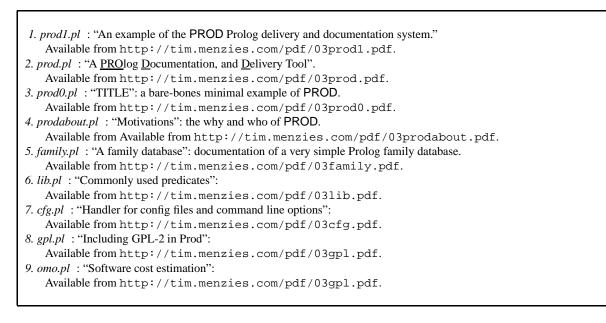


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