Prolog Conditional

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Related to the !, is the Prolog conditional test:

(Test -> ThenC , ElseC)

where each of Test, ThenC, ElseC can be a general Prolog query.

Conditional Example

student_fees(S, F):-

    student(S),

    (eu(S)->F=13500; F=29500).

The Effect of the Prolog Conditional

Ignoring variables, given

H :- ...., (Test -> ThenC ; ElseC), ...

its effect is equivalent to rewriting the clause as:

H:- ..., cond,.....

Where cond is defined as:

cond :- Test, !, ThenC.

cond :- ElseC.

Some Prologs implement it this way.

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student_fees(S, F):-

        student(S), (eu(S)->F=13500; F=29500).

This can be written alternatively as:

student_fees(S, F):-

        student(S), check_fees(S,F).

check_fees(S, F) :-

        eu(S), !, F=13500.

check_fees(S, F) :- F=29500.

Conditional Examples

weekend_plan(D, P):-

(dry_forecast(D),

\+transport_strike(D),

country-park(Park)) ->

P=goto(Park);

(film(F), P=goto(cinema(F))).

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```prolog
dry_forecast(16).                    dry_forecast(23).

country_park(richmond).              transport_strike(23).

country_park(petersham).             film(batman).

                                     film(superman).

weekend_plan(D, P):-
        (dry_forecast(D),
        \+transport_strike(D),
        country-park(Park)) ->
                P=goto(Park);
                (film(F), P=goto(cinema(F))).
```

?- weekend_plan(16, P).

P= goto(richmond) ;

no.

?- weekend_plan(23, P).

P=goto(cinema(batman));

P=goto(cinema(superman));

no.

Compare With

dry_forecast(16).   dry_forecast(23).

country_park(richmond).   transport_strike(23).

country_park(petersham).   film(batman).

film(superman).

alt_weekend_plan(D, P):-

    (dry_forecast(D),

    \+transport_strike(D)) ->

        (country-park(Park), P=goto(Park));

        (film(F), P=goto(cinema(F))).

?- alt_weekend_plan(16, P).

P = goto(richmond);

P = goto(petworth);

no

?- alt_weekend_plan(23, P).

P = goto(cinema(batman));

P = goto(cinema(superman));

no

Yet another definition of max

alt_max(X,Y, Z) :- Y>X -> Z=Y; Z=X.

?- alt_max(1, 2, X).

X=2

?- alt_max(1, 2, 1).

no