

Assignment Project Exam Help
Prolog Conditional

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Prolog Conditional

Related to the !, is the Prolog conditional test:

(Test -> ThenC ; ElseC)

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

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Conditional Example

student_fees(S, F):-

student(S),

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

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The Effect of the Prolog Conditional

Ignoring variables, given

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

its effect is equivalent to rewriting the clause
as:

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H:-, cond,....

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Where cond is defined as:

cond :- Test, !, ThenC.

cond :- ElseC.

Some Prologs implement it this way.

student_fees(S, F):-

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

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This can be written alternatively as:

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student_fees(S, F):-

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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)

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\+transport_strike(D),

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country-park(Park)) ->

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P=goto(Park);

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

dry_forecast(16). dry_forecast(23).
 country_park(richmond). transport_strike(23).
 country_park(petworth). film(batman).
 film(superman).

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weekend_plan(D, P):-

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```

(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.

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?- weekend_plan(23, P).

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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(petworth).` `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))).`

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?- alt_weekend_plan(16, P).

P = goto(richmond);

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P = goto(petworth);

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no

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?- 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.
```

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```
?- alt_max(1, 2, X).
```

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```
X=2
```

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```
?- alt_max(1, 2, 1).
```

```
no
```