



جامعة المستقبل كلية العلوم

Prolog language

Lec8

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Database manipulation in prolog

Example1:

1- Assert predicate:

- `assert(X)` or `assertz(X)` :Adds a new fact to the database. Term is asserted as the last fact with the same key predicate.

✓ For example;

domains

s=string.

ls=s*.

database

person(s)

predicates

list_preson(ls)

clauses

list_preson(L):-

assert(person ("Ali")),

assert(person ("Zaki")),

assert(person ("Suha")),

findall(X,person(X),L).

goal: list_preson(L).

%L=["Ali","Zaki","Suha"]

- `asserta(X)` :Same as `assert`, but adds a fact X at the beginning of the database.

✓ For example;

domains

s=string.

ls=s*.

database

person(s)

predicates

list_preson(ls)

clauses

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list_preson(L):-

asserta(person ("Ali")),

asserta(person ("Zaki")),

asserta(person ("Suha")),

findall(X,person(X),L).

goal: list_preson(L).

%L=["Suha","Zaki","Ali"]

2- Retract predicate:

- retract(X): Removes a fact X from the database.

✓ For example;

domains

s=string.

ls=s*.

database

person(s)

predicates

list_preson(Is)

clauses

list_preson(L):-

assert(person ("Ali")),

assert(person ("Zaki")),

assert(person ("Suha")),

retract(person ("Zaki")),

findall(X,person(X),L).

goal: list_preson(L).

%L=["Ali","Suha"]

- retractall(X): Removes all facts from the database for which the

head unifies with X.

✓ For example;

domains

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s=string.

Is=s*.

database

person(s)

predicates

list_preson(Is)

clauses

list_preson(L):-

```

assert(person ("Ali")),
assert(person ("Zaki")),
assert(person ("Suha")),
retractall(person (_)),% retractall(_),
findall(X,person(X),L).
goal: list_preson(L).
%L=[]

```

Example 2: Use a database concept to perform the following goal:

Goal: run("He bought 7 oranges their total weight 1.5 kg").

And give the following output:

String= He length= 2

String= bought

length= 6

String= oranges

String= their

String= total

String= weight

length= 7

length= 5

length= 5

length= 6

String= kg length= 2

Solution:

database

db_string(String,integer)

predicates

split_tokens(string)

run(string)

print_string

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clauses

run(S):-retractall(_), split_tokens(S), print_string.

split_tokens(S):

fronttoken(S,W,R), isname(W),!,str_len(W,N), assert(db_string(W,N)),

split_tokens(R).

split_tokens(S):- fronttoken(S,_R),!,split_tokens(R).

split_tokens("").

print_string:-

db_string(S,N),write("String= ",S,"

print_string.

goal

length= ",N),nl,fail.

run("He bought 7 oranges their total weight 1.5 kg").

/*String= He length= 2

String= bought length= 6

String= oranges length= 7

String= their

length= 5

String= total

length= 5

String= weight length= 6

String= kg length= 2

yes

*/