Prolog Knowledge Base

Example 1:

Prolog code of family.pl:

male(awad.(

male(otaby.(

male(abdallah.(

male(ahmed.(

male(hamed.(

female(fatema.(

female(nora.(

female(khadega.(

female(hoda.(

female(mona.(

father(awad,abdallah.(

father(otaby,khadega.(

father(abdallah,ahmed.(

father(abdallah,hamed.(

father(abdallah,mona.(

father(abdallah,hoda.(

mother(fatema,abdallah.(

mother(nora,khadega.(

mother(khadega,ahmed.(

mother(khadega,hamed.(

```
mother(khadega,mona.(

mother(khadega,hoda.(

brothers(X,Y-:(

   male(X),male(Y), father(Z,X),father(Z,Y،(

   mother(W,X),mother(W,Y),not(X=Y.(

grandfather(X,Y-:(

   male(X),male(Y),father(X,Z),father(Z,Y),male(Z.(

grandfather(X,Y-:(

   male(X),male(Y),ather(X,Z),mother(Z,Y),female(Z.(

grandfather(X,Y-:(

   male(X),female(Y),father(X,Z),father(Z,Y),male(Z.(

grandfather(X,Y-:(

   male(X),female(Y),father(X,Z),mother(Z,Y),female(Z.(

parents(X,Y):-father(X,Y);mother(X,Y.(
```

consulting and running:

```
-؟brothers(X,Y.(

X = ahmed،

Y = hamed؛

X = hamed،

Y = ahmed؛

false.

-؟grandfather(X,Y.(

X = awad،
```

Y = awad؛

X = awad،

Y = otaby

-؟parents(X,Y.(

X = awad،

Y = abdallah؛

X = otaby،

Y = khadega؛

X = abdallah،

Y = ahmed؛

X = abdallah،

Y = hamed؛

X = abdallah،

Y = mona؛

X = abdallah،

Y = hoda؛

X = fatema،

Y = abdallah؛

X = nora،

Y = khadega؛

X = khadega،

Y = ahmed؛

X = khadega،

Y = hamed؛

X = khadega،

Y = mona؛

X = khadega،

Y = hoda.

Example 2:

Prolog coide of speed.pl:

speed(corolla,140.(

speed(ford,120.(

speed(lexus,130.(

speed(accord,150.(

time(X,T):-speed(X,V),T is 75*60/V.

consulting and running:

-؟speed(ford,X.(

X = 120.

-؟speed(ford,V.(

V = 120.

-؟time(ford,T.(

T = 37.5.

-؟time(X,T.(

X = corolla،

T = 32.1429؛

X = ford،

T = 37.5؛

X = lexus،

T = 34.6154؛

X = accord،

T = 30.

Example 3:

Prolog code of daysofmonth.pl:

daysofmonth(X,Y -:(

X=1, Y=31؛

X=2, Y=28؛

X=3, Y=31؛

X=4, Y=30؛

X=5, Y=31؛

X=6, Y=30؛

X=7, Y=31؛

X=8, Y=31؛

X=9, Y=30؛

X=10, Y=31؛

X=11, Y=30؛

X=12, Y=31.

consulting and running:

-؟daysofmonth(2,Y.(

Y = 28؛

false.

-؟daysofmonth(7,Y.(

Y = 31؛

false.

-؟daysofmonth(X,30.(

X = 4؛

X = 6؛

X = 9؛

X = 11؛

false.

-؟daysofmonth(X,28.(

X = 2؛

false.

-؟daysofmonth(X,31.(

X = 1؛

X = 3؛

X = 5؛

X = 7؛

X = 8؛

X = 10؛

X=12.

Example 4:

Prolog code of time.pl:

```
time:-write('enter car model: '),read(X),nl،
write('enter car speed: '),read(V),nl،
write('enter a distance: '),read(D),nl،
T is D*60/V,write('car '),write(X),write(' time is '),write(T.(
```

colnsulting and running:

```
'] -؟time.pl.['
 %time.pl compiled 0.00 sec, 740 bytes
true.
 -؟time.
enter car model: lexus.
enter car speed: 150.
enter a distance: 75.
car lexus time is 30
true.
 -؟time.
enter car model: lexus.
enter car speed: 180.
enter a distance: 75.
car lexus time is 25
true.
```