

REG NO.220701055

EX.NO :7

DATE: 15.11.24

INTRODUCTION TO PROLOG

AIM

To learn PROLOG terminologies and write basic programs.

TERMINOLOGIES

1. Atomic Terms: -

Atomic terms are usually strings made up of lower- and uppercase letters, digits, and the underscore, starting with a lowercase letter.

Ex:

dog
ab_c_321

2. Variables: -

Variables are strings of letters, digits, and the underscore, starting with a capital letter or an underscore.

Ex:

Dog
Apple_420

3. Compound Terms: -

Compound terms are made up of a PROLOG atom and a number of arguments (PROLOG terms, i.e., atoms, numbers, variables, or other compound terms) enclosed in parentheses and separated by commas.

Ex:

is_bigger(elephant,X)

f(g(X,_),7)

4. Facts: -

A fact is a predicate followed by a dot.

Ex:

bigger_animal(whale).
life_is_beautiful.

5. Rules: -

A rule consists of a head (a predicate) and a body (a sequence of predicates separated by commas).

Ex:

is_smaller(X,Y):-is_bigger(Y,X).
aunt(Aunt,Child):-sister(Aunt,Parent),parent(Parent,Child).

SOURCE CODE:

KB1:

woman(mia).
woman(jody).

woman(yolanda).
 playsAirGuitar(jody
).
 party.
 Query 1: ?-woman(mia).
 Query 2: ?-playsAirGuitar(mia).
 Query 3: ?-party.
 Query 4: ?-concert.
OUTPUT: -

The screenshot shows the SWISH Prolog IDE. The left pane contains the following Prolog code:

```

1 woman(mia).
2 woman(jody).
3 woman(yolanda).
4 playsAirGuitar(jody).
5 party.
6

```

The right pane shows the output of the queries:

```

?- woman(mia).
true
?- playsAirGuitar(mia).
false
?- party.
true
?- concert.
procedure 'concert' does not exist
?-
228701055

```

KB2:
 happy(yolanda).
 listens2music(mia).
 Listens2music(yolanda):-happy(yolanda). playsAirGuitar(mia):-
 listens2music(mia). playsAirGuitar(Yolanda):-listens2music(yolanda).

OUTPUT: -

The screenshot shows the SWISH Prolog IDE. The left pane contains the following Prolog code:

```

1 happy(yolanda).
2 listens2music(mia).
3 listens2music(yolanda):-happy(yolanda).
4 playsAirGuitar(mia):-listens2music(mia).
5 playsAirGuitar(yolanda):-listens2music(yolanda).
6
7

```

The right pane shows the output of the queries:

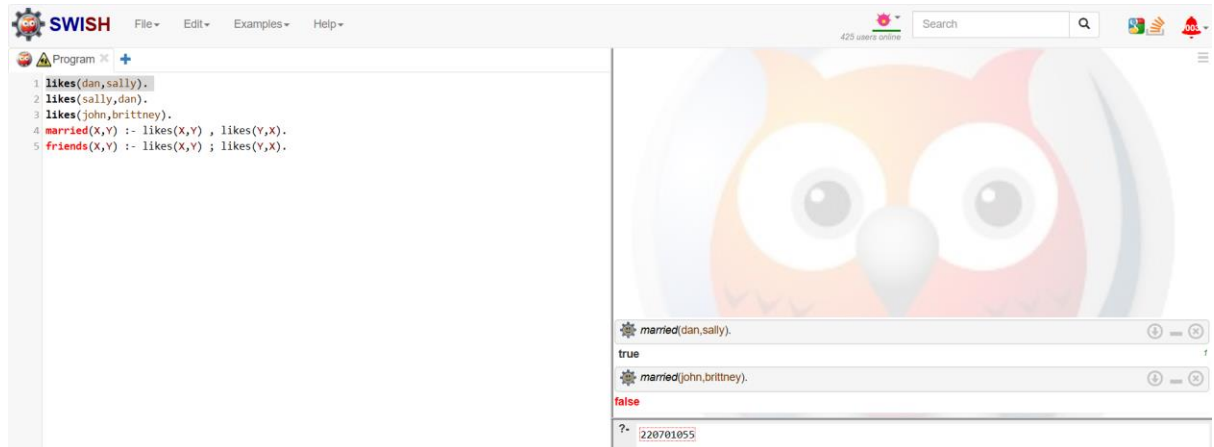
```

?- playsAirGuitar(mia).
true
?- playsAirGuitar(yolanda).
true
?-
228701055

```

KB3: likes(dan,sally).
 likes(sally,dan).
 likes(john,brittney).
 married(X,Y) :- likes(X,Y) ,
 likes(Y,X). friends(X,Y) :-
 likes(X,Y) ; likes(Y,X).

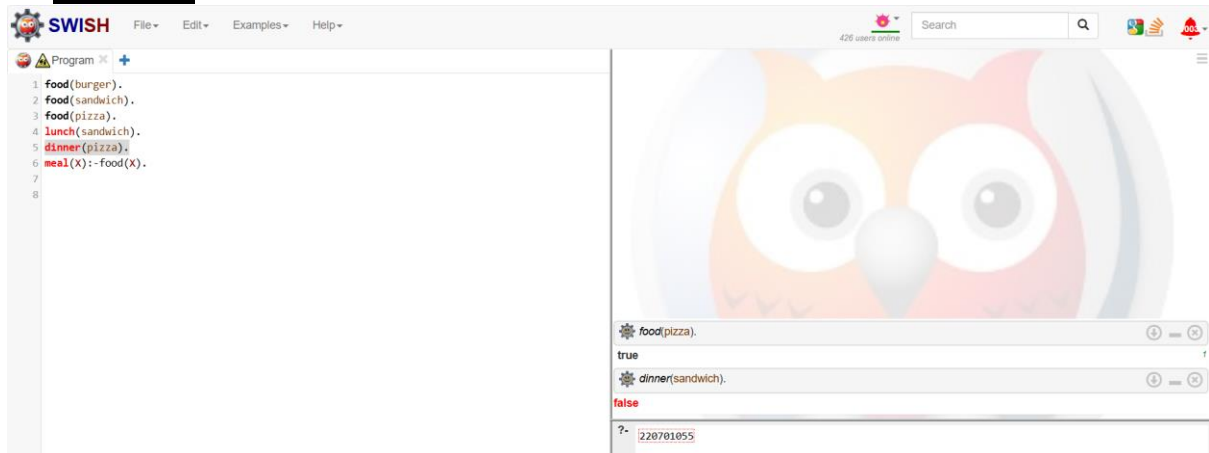
OUTPUT: -



KB4:

food(burger
).
 food(sandw
 ich).
 food(pizza)
 .
 lunch(sand
 wich).
 dinner(pizz
 a).
 meal(X):-
 food(X).

OUTPUT:

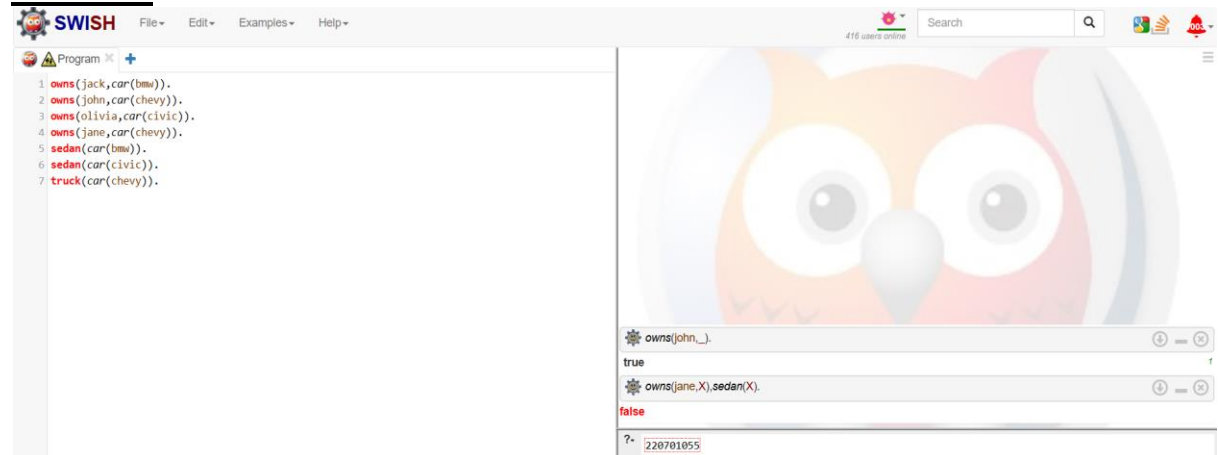


KB5:

owns(jack,car(bmw)).
 owns(john,car(chevy)).
 owns(olivia,car(civic)).
 owns(jane,car(chevy)).
 sedan(car(bmw)).

```
sedan(car(civic)).  
truck(car(chevy)).
```

OUTPUT:



RESULT: Thus the prolog statements are executed successfully.