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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).

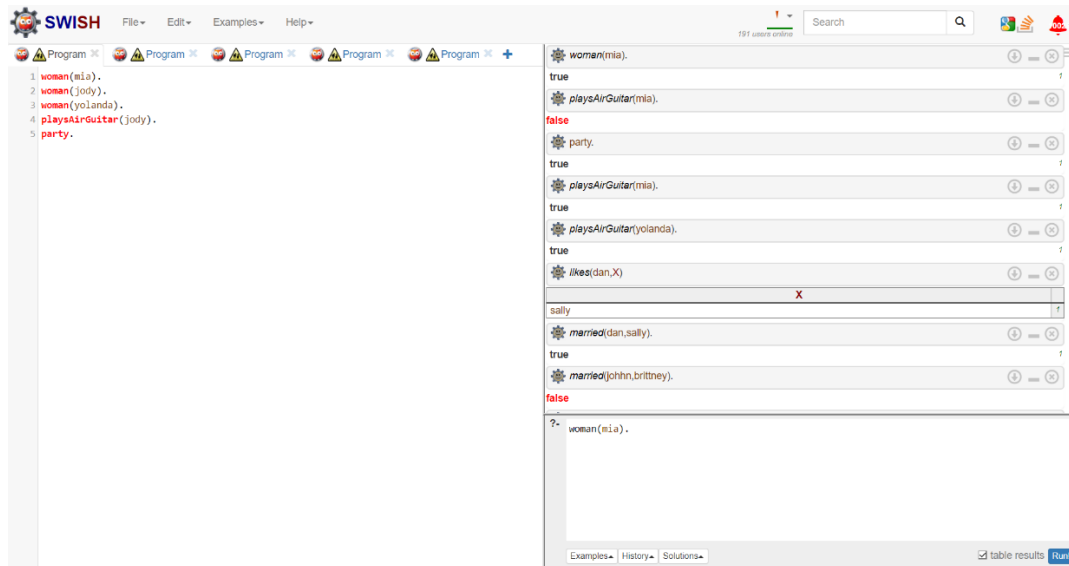
woman(jody).

woman(yolanda).

playsAirGuitar(jody). party.

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

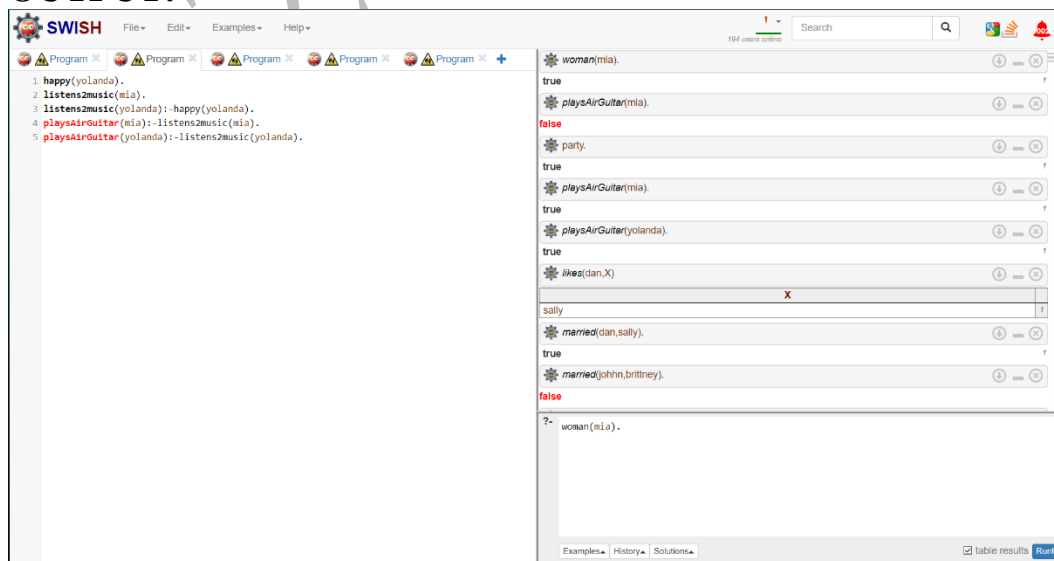
OUTPUT:



KB2:

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

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:

The screenshot shows the SWISH Prolog IDE interface. On the left, a list of Prolog facts is entered:

```
1 owns(jack,car(bmw)).
2 owns(john,car(chevy)).
3 owns(olivia,car(civic)).
4 owns(jane,car(chevy)).
5 sedan(car(bmw)).
6 sedan(car(civic)).
7 truck(car(chevy)).
```

On the right, the execution results for the query `sandwich` are displayed. The results are as follows:

Query	Result
<code>dinner(sandwich)</code>	false
<code>owns(john,X)</code>	X
<code>car(chevy)</code>	f
<code>owns(john,_)</code>	true
<code>owns(Who,car(chevy))</code>	Who
<code>john</code>	f
<code>owns(jane,X),sedan(X)</code>	false
<code>owns(jane,X),truck(X)</code>	X
<code>car(chevy)</code>	f

At the bottom of the results pane, there is a text input field labeled "Your query goes here ..." and buttons for "Examples", "History", "Solutions", "table results", and "Run".

RESULT:

Thus, the basic prolog programs have been implemented successfully.