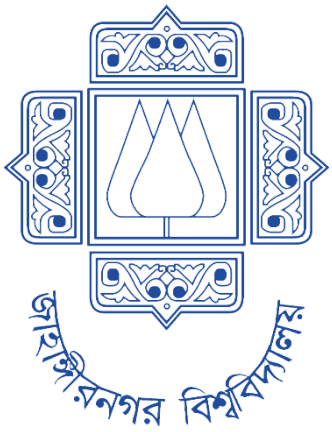
Institute of Information Technology (IIT)

Jahangirnagar University



Lab Report: 01

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Lab Report # Day 01

Example 1:

Problem Name: Knowledge Base -1

Clause:

woman(mia).
woman(jodi).
woman(yolanda).
playsAirGuitar(jodi).
party.

Queries:

1.woman(mia).

2.playsAirGuitar(jody).

3.playsAirGuitar(mia).

4.tattoed(jody).

5.party.

6.rockConcert.

Result:

```
?-
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI lab 1.pl compiled 0.00 sec, 5 clauses
?- woman(mia).
true.

?- playsAirGuitar(jody).
false.

?- playsAirGuitar(mia)
|    .
false.

?- tattoed(jody).
ERROR: Unknown procedure: tattoed/1 (DWIM could not correct goal)
?-
|    party.
true.

?- rockConcert.
ERROR: Unknown procedure: rockConcert/0 (DWIM could not correct goal)
?-
```

Example 2:

Problem Name:Knowledge Base -2.

Clause:

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

Queries:

1.playsAirGuitar(mia).

2.playsAirGuitar(yolanda).

Result:

```
Warning:    Previously defined at c:/users/hp/onedrive/desktop/ai lab/ai lab 1.p
% c:/Users/HP/OneDrive/Desktop/AI LAB/Ai lab2.pl compiled 0.00 sec, 5 clauses
?- playsAirGuitar(mia).
true.

?- playsAirGuitar(yolanda).
true.

?-
```

Example 3:

Problem Name:Knowledge Base -3

Clause:

happy(vincent).
listens2music(butch).
playsAirGuitar(vincent):- listens2music(vincent), happy(vincent).
playsAirGuitar(butch):- happy(butch).
playsAirGuitar(butch):- listens2music(butch).

Queries:

1.playsAirGuitar(vincent).

2.playsAirGuitar(butch).

Result:

```
warning:    Previously defined at c:/users/hp/onedrive/desktop/ai lab/ai lab 1.p
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI lab3.pl compiled 0.00 sec, 4 clauses
?- playsAirGuitar(vincent).
false.

?- playsAirGuitar(butch).
true
```

Example 4:

Problem Name :Knowledge Base-4

Clause:

woman(mia).
woman(jody).
woman(yolanda).

loves(vincent, mia).
loves(marsellus, mia).
loves(pumpkin, honey_bunny).
loves(honey_bunny, pumpkin).

Queries:

1.woman(X).

2.loves(marsellus,X), woman(X).

3.loves(pumpkin,X), woman(X).

Result:

```
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI lab4.pl compiled 0.00 sec, 0 clauses
[write]
oman(X).true .

?- woman(X).
X = mia ;
X = jodi ;
X = yolanda.

?- loves(marsellus,X), woman(X).
ERROR: Unknown procedure: loves/2 (DWIM could not correct goal)
?- loves(marsellus,X).
ERROR: Unknown procedure: loves/2 (DWIM could not correct goal)
?- loves(pumpkin,X), woman(X).
ERROR: Unknown procedure: loves/2 (DWIM could not correct goal)
?-
```

Example 5:

Problem Name:Knowledge Base -5

Clause:

```
loves(vincent,mia).
loves(marsellus,mia).
loves(pumpkin, honey_bunny).
loves(honey_bunny, pumpkin).

jealous(X,Y):- loves(X,Z), loves(Y,Z).
```

Queries:

1.jealous(marsellus,W).

Result:

```
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI lab 5.pl compiled 0.00 sec, 5 clauses
?- jealous(marsellus,W).
W = vincent ;
W = marsellus.

?-
```

Example 6:

Problem Name:User input.

Clause:

```
start:-
write('enter your first num'),nl,
read(X),nl,
write('enter your second num'),nl,
read(Y),nl,

write('here is your number'),nl,
write(X),nl,
write(Y).
```

Result:

```
?-
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI lab6.pl compiled 0.00 sec, 1 clauses
?- start.
enter your first num
|: 4.

enter your second num
|: 6.

here is your number
4
6
true.

?-
```

Example 7:

Problem Name:Sum of two number.

Clause:

```
go:-
write('enter your first num'),nl,
read(X),nl,

write('enter your second num'),nl,
read(Y),nl,
sum(X,Y).
sum(X,Y):-S is X+Y,
write('sum is '),nl,
write(S).
```

Output:

```
?-
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI Lab7.pl compiled 0.00 sec, 2 clauses
?- go.
enter your first num
|: 5.

enter your second num
|: 6.

sum is
11
true.

?-
```

Example 8:

Problem Name :String operation.

Clause:

```
%Predicate to take input as a string

take_input_string(input):-
write('Enter a string: '),
read_line_to_codes(user_input,Codes),
string_codes(Input,Codes).

%Predicate to process the input string and display output

process_string(String):-
        %Add your processing logic here.
        Example:convert the string to uppercase
        string_upper(String,Output),
        write('Output '),write(Output).

%Main predicate to execute the programm

main:-
        take_input_string(Input),
        process_string(Input).
```

Output:

```
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI lab8.pl compiled 0.00 sec, 2 clauses
?- main.
Enter a string: eyenine.
```

Example 9:

Problem Name : Average of 3 number

Clause:

```
%find the average of 3 numbers from users.

average:-
write('Enter 1st num:'),nl,
```

```
read(X),nl,

write('Enter 2nd num:'),nl,
read(Y),nl,

write('Enter 3rd num:'),nl,
read(Z),nl,

avg(X,Y,Z).
avg(X,Y,Z):-S is (X+Y+Z)/3,
write(S).
```

Output:

```
% c:/Users/HP/OneDrive/Desktop/AI LAB/Ai Lab 9.pl compiled 0.00 sec, 2 clauses
?- average.
Enter 1st num:
|: 5.

Enter 2nd num:
|: 6.

Enter 3rd num:
|: 7.

6
true.

?-
```

Example 10:

Problem Name:Task-1:How would you formulate the following queries from the following figure?

Clause:

```
male(jamil).
male(sohel).
male(rafi).
male(rumi).
male(raj).
male(orko).
male(jarif).
male(ovi).

female(runa).
female(riya).
```

```
female(najia).
female(ridima).
female(sufi).
female(saki).


parent(jamil,runa).
parent(jamil,sohel).

parent(runa,rafi).
parent(runa,rumi).
parent(runa,riya).

parent(sohel,najia).
parent(sohel,ridima).

parent(rafi,raj).

parent(rumi,sufi).

parent(najia,saki).
parent(najia,orko).

parent(sufi,jarif).

parent(orko,ovi).

siblings(X,Y):-parent(A,X),parent(A,Y),X\=Y.
brother
```

Queriy:

1. •is runa is male?
2. •is sohel is male?
3. •is jarif is male?
4. •is sufi is female?
5. •is ridima is female?
6. •is jamil is parents?

7. •is sufi is parents?
8. •is saki is parents?
9. •is rumi is parents?
10. •find out runa’s children name.
11. •find out jamil’s children name.
12. •find out rafi’s sibling’s name.
13. •find out najia’s sibling’s name.
14. •find out who is riya’s mother.
15. •find out who is orko’s mother.

Output:

```
% c:/Users/HP/OneDrive/Desktop/AI LAB/AI LAB !.pl compiled 0.00 sec, 28 clauses
?- male(runa).
false.

?- male(sohel).
true.

?- male(jarif).
true.

?- male(sufi).
false.

?- female(ridima).
true.

?- parent(jamil,X).
X = runa ;
X = sohel.

?- parent(sufi,X).
X = jarif.

?- parent(saki,X).
false.

?- parent(rumi,X).
X = sufi.

?- parent(runa,X).
X = rafi ;
X = rumi ;
X = riya.

?- parent(jamil,X).
X = runa ;
X = sohel.

?- siblings(rafi,X).
X = rumi ;
X = riya.

?- siblings(najia,X).
X = ridima.

?- parent(X,riya),female(X).
X = runa.

?- parent(X,orko),female(X).
X = najia.

?-
```