Experiment Number: 7

Problem Statement:

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CLASS: IT-A BATCH: B2

DATE OF PERFORMANCE:

PROGARM:

1. Knowledge base 1

```
woman(mia).
woman(jody).
woman(yolanda).
playsAirGuitar(jody).
party.
```

Output:-

1 ?- tattoed(jody).

ERROR: Unknown procedure: tattoed/1 (DWIM could not correct goal)

2 ?- party.

true.

3 ?- rockConnect

.

ERROR: Unknown procedure: rockConnect/0 (DWIM could not correct goal)

4 ?- woman(X).

X = mia ;

X = jody ;

X = yolanda.

5 ?- playsAirGuitar(X).

X = jody.

2. Knowledge base 2

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

Output:-
1 ?- happy(X).
X = yolanda.

2 ?- listens2music(X).
X = mia ;
X = yolanda.

3 ?- playsAirGuitar(yolanda).
true.

4 ?- playsAirGuitar(X).
X = mia ;
X = yolanda.

3. Knowledge base 3

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

Output:
1 ?- happy(X).
X = vincent.

2 ?- playsAirGuitar(vincent).
false.

3 ?- playsAirGuitar(butch).
true.

4 ?- playsAirGuitar(X).
X = butch.

4. Knowledge base 4

```
woman(mia).
woman(jody).
woman(yolanda).
loves(vincent, mia).
loves(marsellus, mia).
loves(pumpkin, honey_bunny).
loves(honey_bunny, pumpkin).
```

Output:-
1 ?- woman(X).
X = mia ;
X = jody ;
X = yolanda.

2 ?- loves(marsellus,X), woman(X).
X = mia.

3 ?- loves(pumpkin,X), woman(X).
false.

5. Knowledge base 5

```
loves(vincent,mia).
loves(marsellus,mia).
loves(pumpkin, honey_bunny).
loves(honey_bunny, pumpkin).
jealous(X,Y):- loves(X,Z), loves(Y,Z).
```

Output:-
1 ?- jealous(marsellus,W).
W = vincent ;
W = marsellus.

2 ?- woman(X).
ERROR: Unknown procedure: woman/1 (DWIM could not correct goal)
3 ?- loves(X, mia).
X = vincent ;

X = marsellus.

6. Knowledge base

```
symptom(charlie,fever).
symptom(charlie,rash).
symptom(charlie,head_ache).
symptom(charlie,runny_nose).
symptom(arpit,fever).
symptom(arpit,chills).
symptom(arpit,body_ache).
symptom(arpit,rash).
hypothesis(Patient,measles):-
symptom(Patient,fever),symptom(Patient,cough),
                        symptom(Patient,conjuctivites),symptom(Patient
,runny_nose),
                        symptom(Patient,rash).
hypothesis(Patient,german_measles):-symptom(Patient,fever),
                                    symptom(Patient,head_ache),
                                    symptom(Patient,runny_nose),
                                    symptom(Patient,rash).
hypothesis(Patient,flu):-symptom(Patient,fever),
                                    symptom(Patient,head_ache),
                                    symptom(Patient,body_ache),
                                    symptom(Patient,conjuctivites),
                                    symptom(Patient,chills),
                                    symptom(Patient,sore_throat),
                                    symptom(Patient,runny_nose),
                                    symptom(Patient,cough).
hypothesis(Patient,chicken_pox) :- symptom(Patient,fever),
                                    symptom(Patient,chills),
                                    symptom(Patient,body_ache),
                                    symptom(Patient,rash).
```

Output:-

1 ?- hypothesis(arpit, X).

X = chicken_pox.

2 ?- hypothesis(charlie, X).

X = german_measles ;

false.

7. Kowledge base 7

```
symptom(john, fever).
symptom(john, cough).
symptom(john, shortness_of_breath).
symptom(lisa, headache).
symptom(lisa, nausea).
symptom(lisa, dizziness).
symptom(lisa, fatigue).
symptom(peter, fever).
symptom(peter, body_ache).
symptom(peter, fatigue).
symptom(peter, sore_throat).
symptom(peter, runny_nose).

hypothesis(Patient, covid_19) :-
    symptom(Patient, fever),
    symptom(Patient, cough),
    symptom(Patient, shortness_of_breath).

hypothesis(Patient, migraine) :-
    symptom(Patient, headache),
    symptom(Patient, nausea),
    symptom(Patient, dizziness).

hypothesis(Patient, flu) :-
    symptom(Patient, fever),
    symptom(Patient, body_ache),
    symptom(Patient, fatigue),
    symptom(Patient, sore_throat),
    symptom(Patient, runny_nose).

hypothesis(Patient, common_cold) :-
    symptom(Patient, runny_nose),
    symptom(Patient, sore_throat),
    symptom(Patient, cough).

hypothesis(Patient, unknown) :-
    writeln('Unable to diagnose. More information is needed.').
```

Output:-

1 ?- hypothesis(john, Disease).

Disease = covid_19 ;

Unable to diagnose. More information is needed.

Disease = unknown.

2 ?- hypothesis(lisa, Disease).
Disease = migraine ;
Unable to diagnose. More information is needed.
Disease = unknown.

3 ?- hypothesis(peter, Disease).
Disease = flu ;
Unable to diagnose. More information is needed.
Disease = unknown.