IAI : Exp-5(Inlab)

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Code:

```
male(jack).
male(oliver).
male(ali).
male(james).
male(simon).
male(harry).
female(helen).
female(sophie).
female(jess).
female(lily).

parent_of(jack,jess).
parent_of(jack,lily).
parent_of(helen, jess).
parent_of(helen, lily).
parent_of(oliver,james).
parent_of(sophie, james).
parent_of(jess, simon).
parent_of(ali, simon).
parent_of(lily, harry).
parent_of(james, harry).

/* Rules */
father_of(X,Y):- male(X),
   parent_of(X,Y).

mother_of(X,Y):- female(X),
   parent_of(X,Y).

grandfather_of(X,Y):- male(X),
   parent_of(X,Z),
   parent_of(Z,Y).

grandmother_of(X,Y):- female(X),
   parent_of(X,Z),
```

```
    parent_of(Z,Y).

sister_of(X,Y):- %(X,Y or Y,X)%
    female(X),
    father_of(F, Y), father_of(F,X),X \= Y.

sister_of(X,Y):- female(X),
    mother_of(M, Y), mother_of(M,X),X \= Y.

aunt_of(X,Y):- female(X),
    parent_of(Z,Y), sister_of(Z,X),!.

brother_of(X,Y):- %(X,Y or Y,X)%
    male(X),
    father_of(F, Y), father_of(F,X),X \= Y.

brother_of(X,Y):- male(X),
    mother_of(M, Y), mother_of(M,X),X \= Y.

uncle_of(X,Y):-
    parent_of(Z,Y), brother_of(Z,X).

ancestor_of(X,Y):- parent_of(X,Y).
ancestor_of(X,Y):- parent_of(X,Z),
    ancestor_of(Z,Y).
```

Output:

Outcomes:

CO3 : Ability to formally state the problem and develop the appropriate proof for given a logical deduction problem.