Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

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# ARTIFICIAL INTELLIGENCE

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## EXPERIMENT – 6

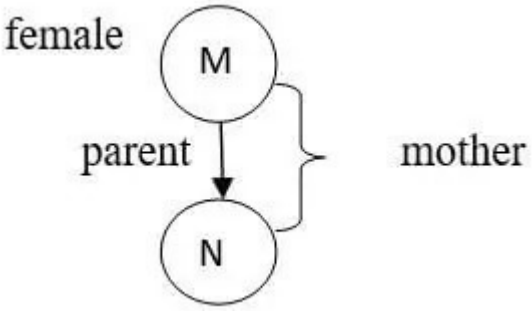
**Aim:** Implement Family tree using Prolog.

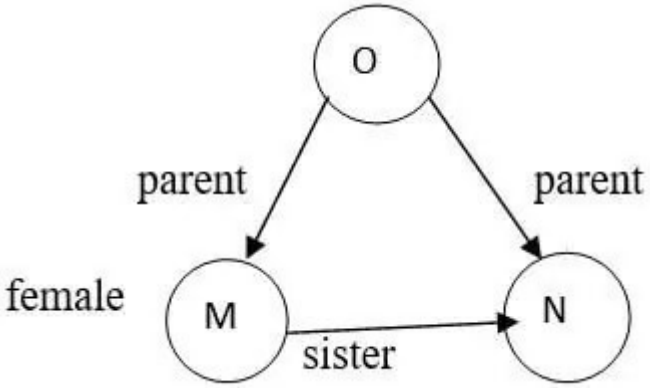
**Theory:**

Prolog is a language built around the Logical Paradigm: a declarative approach to problem solving.
There are only three basic constructs in Prolog: facts, rules, and queries.
A collection of facts and rules is called a knowledge base (or a database) and Prolog programming is all about writing knowledge bases. That is, Prolog programs simply are knowledge bases, collections of facts and rules which describe some collection of relationships that we find interesting.

## Family Tree-

The program in prolog specifies the relationship between objects and the properties of objects; the family trees tell us how to construct a database of families. The database also contains facts and rules; let us consider the example “Sumit has a car.” We can declare the original relationship between two objects where one object is Sumit. Another object is a car; if we say, “does Sumit own a car?'' There are many types of relationships; some of them are ruled by using rules in the program, we can find the relationship between objects used, and it is not defined as a fact. Tree diagrams are very good in representations. The information is clearly mentioned, and due to that, users can understand easily, our programs in prolog are the sets of clauses.




**Program:**

```
female(pammi). female(lizza). female(patty).
female(anny). male(jimmy). male(bobby).
male(tomy). male(pitter). parent(pammi,bobby).
parent(tomy,bobby). parent(tomy,lizza).
parent(bobby,anny). parent(bobby,patty).
parent(patty,jimmy). parent(bobby,pitter).
parent(pitter,jimmy). mother(X,Y):-
parent(X,Y),female(X). father(X,Y):-
parent(X,Y),male(X). grandparent(X,Y):-
parent(X,Z),parent(Z,Y). grandmother(X,Z):-
mother(X,Y),parent(Y,Z). grandfather(X,Z):-
father(X,Y),parent(Y,Z). haschild(X):-
parent(X,_). sister(X,Y):-
parent(Z,X),parent(Z,Y),female(X),X\==Y.
brother(X,Y):-
parent(Z,X),parent(Z,Y),male(X),X\==Y.
```

**Output:**


**Conclusion:** Hence, we learned about Prolog language and implement Family tree in same