

# Artificial Intelligence

🚦 **Practical-3: Write a PROLOG program for Family Relation.**

➤ **Code in Prolog:**

```
male(arjun).
male(bakulbhai).
male(natubhai).
female(bharvi).
female(arunaben).
female(kundanben).
child(arjun,bakulbhai).
child(arjun,arunaben).
child(bharvi,bakulbhai).
child(bharvi,arunaben).
child(bakulbhai,natubhai).
child(bakulbhai,kundanben).
brother(X,Y):-
    male(X),
    child(X,Z),
    child(Y,Z),
    X\=Y.
sister(X,Y):-
    female(X),
    child(X,Z),
    child(Y,Z),
    X\=Y.
father(X,Y):-
```

```
male(X),  
child(Y,X).  
mother(X,Y):-  
    female(X),  
    child(Y,X).  
grandfather(X,Y):-  
    male(X),  
    child(Y,Z),  
    child(Z,X).  
grandmother(X,Y):-  
    female(X),  
    child(Y,Z),  
    child(Z,X).  
ancestor(X,Y):-  
    male(X),  
    child(Y,Z),  
    child(Z,X);  
    female(X),  
    child(Y,Z),  
    child(Z,X).
```

## Output:

```

SWI-Prolog -- c:/Users/Arjun Vankani/Desktop/CE SEM 7/ASS/AI/Lab3/Family.pl
File Edit Settings Run Debug Help
Welcome to SWI-Prolog (threaded, 64 bits, version 8.2.4)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

For online help and background, visit https://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?-
% c:/Users/Arjun Vankani/Desktop/CE SEM 7/ASS/AI/Lab3/Family.pl compiled 0.00 sec, 0 clauses
?- father(X,arjun).
X = bakulbhai ,

?- mother(X,bharvi).
X = arunaben ,

?- brother(X,bharvi).
X = arjun ,

?- sister(X,arjun).
X = bharvi ,

?- grandfather(arjun,X)
|
.
false.

?- grandfather(X,arjun).
X = natubhai ,

?- grandmother(X,bharvi).
X = kundanben ,

?- ancestor(X,Y)
|
.
X = natubhai,
Y = arjun ,

?- child(X,Y).
X = arjun,
Y = bakulbhai ,

?- female(X).
X = bharvi ,

?- mother(arunaben,bharvi)
|
.
true.

?- mother(X,Y).
X = arunaben,
Y = arjun ,

?-

```