

Lab-1

Source Code:

boy (jon),  
 boy (ned),  
 boy (rickon),  
 boy (richard),  
 boy (benjen),  
 boy (madking),  
 boy (rheagar).

girl (catlyn),  
 girl (sansa),  
 girl (arya),  
 girl (lyanna),  
 girl (dany).

father (ned, arya),  
 father (ned, rickon),  
 father (ned, bran),  
 father (ned, sansa),  
 father (richard, ned),  
 father (richard, benjen),  
 father (richard, lyanna),  
 father (madking, rheagar),  
 father (madking, dany),  
 father (rheagar, jon).

mother (catlyn, arya),  
 mother (catlyn, rickon),  
 mother (catlyn, bran),  
 mother (catlyn, sansa),  
 mother (lyanna, jon).

parent (X, Y) :- father (X, Y) ; mother (X, Y) .

grandparent (X, Y) :- parent (X, Z), parent (Z, Y) .

sibling (X, Y) :- parent (Z, X), parent (Z, Y) .

uncle (X,Y) :- sibling (X,Z), father (Z,Y), boy (X).

aunt (X,Y) :- ~~mother~~ sibling (X,Z), father (Z,Y), girl (X).

husband (X,Y) :- parent (X,Z), parent (Y,Z), boy (X), girl (Y).

brother (X,Y) :- sibling (X,Y), boy (X).

sister (X,Y) :- sibling (X,Y), girl (X).

### Discussion:

In this lab, we learned about PROLOG and how to create FOPL using PROLOG and compile the written program. We also check the truth value for various relations.

### Conclusion:

Hence, in this lab, we learnt about creating propositional logic in PROLOG.