**Prolog**

**Tabish, CSE-09/16**

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**Introduction:**

PROLOG is a programming language centred around a small set of basic mechanisms, including pattern matching, tree-based data structuring and automatic backtracking. This Small set constitutes a surprisingly powerful and flexible programming framework. PROLOG is especially well suited for problems that involve objects-in particular, structured objects-and relations between them.

Programming in PROLOG is accomplished by creating a database of facts and rules about objects, their properties, and their relationships to other objects. Queries then can be posed about the objects and valid conclusions will be determined and returned by the program Responses to user queries are determined through a form of inference control known as resolution.

**Fundamentals**:

*Atoms*: lower & uppercase letters, digits and underscores or in a single quote.

*Operators*:

X is 3+4. (addition)

6+4 = 3+7. ( unification)

4+1 =:=3+2 (equal to)

6+4 \= 3+7. ( inequality)

2+1 < 3+2

Try / // \*\* \* >= =/=(identical)

*Facts*: Some facts about family relationships could be written

**Code:**

male(gmmir).

male(tabish).

female(rifat).

female(mehvish).

father(gmmir,tabish).

father(gmmir,mehvish).

mother(rifat,mehvish).

mother(rifat,tabish).

son(X,rifat) :- male(X),mother(rifat,X).

son(X,gmmir) :- male(X),father(gmmir,X).

daughter(X,rifat) :- female(X),mother(rifat,X).

daughter(X,gmmir) :- female(X),father(gmmir,X).

sibling(X,Y) :- father(Z,X),father(Z,Y),X\=Y.

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

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