**Name :Sahil Kishor Shirodkar       TY-CS-D     BATCH 2      ROLL NO :06**

**Assignment 5 :** **Create a family tree using prolog**

**CODE:-**

male(anna).

male(chandu).

male(ganesh).

male(pinto).

male(ajey).

male(pradeep).

male(vijay).

male(kishor).

male(sankalp).

male(shubham).

male(sahil).

male(nilesh).

male(sai).

female(lata).

female(surekha).

female(asha).

female(aditi).

female(bai).

female(shweta).

female(jyoti).

female(karishma).

female(shrishti).

female(nidhi).

female(mrunali).

female(rutu).

female(surbhi).

parent(anna,chandu).

parent(anna,asha).

parent(lata,chandu).

parent(lata,ganesh).

parent(surekha,pinto).

parent(surekha,bai).

parent(surekha,nilesh).

parent(chandu,pinto).

parent(chandu,bai).

parent(chandu,nilesh).

parent(bai,sai).

parent(ajey,sai).

parent(ganesh,pradeep).

parent(ganesh,jyoti).

parent(ganesh,karishma).

parent(asha,pradeep).

parent(asha,jyoti).

parent(asha,karishma).

parent(shweta,shrishti).

parent(shweta,sankalp).

parent(pradeep,shrishti).

parent(pradeep,sankalp).

parent(jyoti,nidhi).

parent(jyoti,shubham).

parent(vijay,nidhi).

parent(vijay,shubham).

parent(karishma,sahil).

parent(karishma,mrunali).

parent(kishor,sahil).

parent(kishor,mrunali).

parent(nilesh,surbhi).

parent(rutu,surbhi).

wife(lata,anna).

wife(surekha,chandu).

wife(asha,ganesh).

wife(aditi,pinto).

wife(bai,ajey).

wife(shweta,pradeep).

wife(jyoti,vijay).

wife(karishma,kishor).

wife(rutu,nilesh).

mother(X,Y):-female(X),parent(X,Y).

father(X,Y):-male(X),parent(X,Y).

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

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

grandfather(X,Y):-male(X),parent(X,Z),parent(Z,Y).

grandmother(X,Y):-female(X),parent(X,Z),parent(Z,Y).

secondgrandfather(X,Y):-male(X),sibling(X,Z),grandparent(Z,Y);male(X),wife(A,X),sibling(B,A),grandparent(B,Y).

secondgrandmother(X,Y):-female(X),sibling(X,Z),grandparent(Z,Y);female(X),wife(X,A),sibling(A,B),grandparent(B,Y).

maternal\_aunt(X,Y):-female(X),sibling(X,A),mother(A,Y);female(X),wife(X,A),sibling(A,B),parent(B,Y).

maternal\_uncle(X,Y):-male(X),sibling(X,A),mother(A,Y);male(X),wife(A,X),sibling(A,B),parent(B,Y).

cousin(X,Y):-parent(A,Y),sibling(A,B),parent(B,X).

secondcousin(X,Y):-parent(A,Y),cousin(A,B),parent(B,X).

second\_maternal\_uncle(X,Y):-male(X),mother(A,Y),cousin(A,X);male(X),parent(A,Y),cousin(A,B),wife(B,X).

second\_maternal\_aunt(X,Y):-female(X),mother(A,Y),cousin(A,X);female(X),parent(A,Y),cousin(A,B),wife(X,B).

paternal\_aunt(X,Y):-female(X),father(A,Y),sibling(X,A);female(X),father(A,Y),sibling(B,A),wife(X,B).

paternal\_uncle(X,Y):-male(X),father(A,Y),sibling(A,X);male(X),father(A,Y),sibling(B,A),wife(B,X).

second\_paternal\_aunt(X,Y):-female(X),father(A,Y),cousin(A,X);female(X),father(A,Y),cousin(A,B),wife(X,B).

second\_paternal\_uncle(X,Y):-male(X),father(A,Y),cousin(A,X);male(X),father(A,Y),cousin(A,B),wife(B,X).

daughter\_in\_law(X,Y):-female(X),parent(Y,A),wife(X,A).

son\_in\_law(X,Y):-male(X),parent(Y,A),wife(A,X).

uncle\_in\_law(X,Y):-male(X),female(Y),wife(Y,A),paternal\_uncle(X,A),male(X);male(X),female(Y),wife(Y,A),maternal\_uncle(X,A);male(X),male(Y),wife(A,Y),paternal\_uncle(X,A);male(X),male(Y),wife(A,Y),maternal\_uncle(X,A).

aunt\_in\_law(X,Y):-uncle\_in\_law(A,Y),wife(X,A).

sister\_in\_law(X,Y):-female(X),wife(X,A),sibling(A,Y);female(X),wife(X,A),cousin(A,Y);wife(X,A),sibling(A,B),wife(B,Y).

brother\_in\_law(X,Y):-male(X),wife(A,X),sibling(A,Y);male(X),wife(A,X),cousin(A,Y).

greatgrandparent(X,Y):-grandparent(A,Y),parent(X,A).

husbands\_cousins\_wife(X,Y):-female(X),wife(X,A),cousin(A,B),wife(Y,B).

wifes\_sister\_in\_law(X,Y):-female(X),wife(A,Y),sister\_in\_law(X,A).