



A.Y. 2022-2023

Subject: Artificial Intelligence

SAP ID: 60004220253 – Devansh Mehta

Experiment No. 08

Aim: To implement Family Tree in Prolog.

Code:

Knowledge Base:

female(uvi).
female(ushi).
female(ran).
female(sia).
female(kavi).
female(tina).

male(jay).
male(raj).
male(vijay).
male(ram).
male(sam).
male(kavi).

parent(ran, uvi).
parent(ran, ushi).
parent(jay, uvi).
parent(jay, ushi).
parent(raj, sia).
parent(raj, kavi).
parent(vijay, ram).
parent(vijay, tina).

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

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

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

grandmother(X, Y) :- female(X), grandparent(X, Y).

grandfather(X, Y) :- male(X), grandparent(X, Y).

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



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

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

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

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

Output:

```
parent(Parent, Child).
Child = uvi,
Parent = ran
Child = ushi,
Parent = ran
Child = uvi,
Parent = jay
Child = ushi,
Parent = jay
Child = sia,
Parent = raj
Child = kavi,
Parent = raj
Child = ram,
Parent = vijay
Child = tina,
Parent = vijay

?- parent(Parent, Child).
```

```
mother(Mother, Child).
Child = uvi,
Mother = ran
Child = ushi,
Mother = ran
false
```

```
?- mother(Mother, Child).
```

```
sibling(Sibling, ushi).
Sibling = uvi
Sibling = uvi
false
```

```
?- sibling(Sibling, ushi).
```