



INSTITUTO POLITÉCNICO NACIONAL

ESCUELA SUPERIOR DE CÓMPUTO

CARRERA:

INGENIERÍA EN SISTEMAS COMPUTACIONALES

Materia:

Paradigmas de programación

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Alumno:

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3CV1

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Codigo

```
/* Facts */
male(jack).
male(oliver).
male(ali).
male(james).
male(simon).
male(harry).
female(helen).
female(sophie).
female(jess).
female(lily).

parent_of(jack,jess).
parent_of(jack,lily).
parent_of(helen, jess).
parent_of(helen, lily).
parent_of(oliver,james).
parent_of(sophie, james).
parent_of(jess, simon).
parent_of(ali, simon).
parent_of(lily, harry).
parent_of(james, harry).

/* Rules */
father_of(X,Y):- male(X),
    parent_of(X,Y).

mother_of(X,Y):- female(X),
    parent_of(X,Y).

grandfather_of(X,Y):- male(X),
    parent_of(X,Z),
    parent_of(Z,Y).

grandmother_of(X,Y):- female(X),
    parent_of(X,Z),
    parent_of(Z,Y).

sister_of(X,Y):- %(X,Y or Y,X)%
    female(X),
    father_of(F, Y), father_of(F,X),X \= Y.

sister_of(X,Y):- female(X),
    mother_of(M, Y), mother_of(M,X),X \= Y.

aunt_of(X,Y):- female(X),
    parent_of(Z,Y), sister_of(Z,X),!.

brother_of(X,Y):- %(X,Y or Y,X)%
    male(X),
    father_of(F, Y), father_of(F,X),X \= Y.

brother_of(X,Y):- male(X),
    mother_of(M, Y), mother_of(M,X),X \= Y.
```

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uncle_of(X,Y):-
    parent_of(Z,Y), brother_of(Z,X).
ancestor_of(X,Y):- parent_of(X,Y).
ancestor_of(X,Y):- parent_of(X,Z),
    ancestor_of(Z,Y).

/* Rules */
sibling_of(X,Y):- %X e Y comparten al menos un padre o madre%
    parent_of(P, X), parent_of(P, Y), X \= Y.

cousin_of(X,Y):- %X e Y son primos si sus padres son hermanos%
    parent_of(PX, X), parent_of(PY, Y),
    sibling_of(PX, PY), X \= Y.

nephew_of(X,Y):- %X es sobrino de Y si Y es tío/a de X%
    parent_of(P, X), sibling_of(P, Y), male(X).

```

Prueba de Validez

Sibling_of

```

sibling_of(X,Y):- %X e Y comparten al menos un padre o madre%
    parent_of(P, X), parent_of(P, Y), X \= Y.

```

```

?- sibling_of(jack,jess)
true

```

```

?- sibling_of(jess,simon)
false

```

Cousin_of

```

cousin_of(X,Y):- %X e Y son primos si sus padres son hermanos%
    parent_of(PX, X), parent_of(PY, Y),
    sibling_of(PX, PY), X \= Y

```

```

?- cousin_of(jack,lily)
true

```

```

?- cousin_of(james,lily)
false

```

Nephew_of

```

nephew_of(X,Y):- %X es sobrino de Y si Y es tío/a de X%
    parent_of(P, X), sibling_of(P, Y), male(X).

```

```

?- cousin_of(harry,lily)
true

```

```

?- cousin_of(harry,jess)
false

```