Programming languages - U10

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Genealogy database

```
grandfather(X, Z) :- parent(X, Y), parent(Y, Z), male(X)
grandmother(X, Z) :- parent(X, Y), parent(Y, Z), female(X)

grandparent(X, Y) :- grandmother(X, Y)
grandparent(X, Y) :- grandfather(X, Y)

grandson(X, Y) :- grandparent(Y, X), male(X)
granddaughter(X, Y) :- grandparent(Y, X), female(X)

grandchild(X, Y) :- grandparent(Y, X)

(
alternatively:
grandchild(X, Y) :- granddaughter(X, Y)
grandchild(X, Y) :- grandson(X, Y)
)
```

Example

```
female(Edith)
male(Jürg)
male(Jan)

parent(Edith, Jürg)
parent(Jürg, Jan)

?- grandson(Jan, Edith)
yes
?- grandmother(Edith, Jan)
yes
?- granddaughter(Jan, Edith)
no
```

Weekly schedule

```
day(monday)
day(tuesday)
day(wednesday)
day(thursday)
day(friday)

subject(english)
subject(programming)
subject(ai)
subject(hacking)
subject(networking)
subject(pl)

daysubject(monday, english)
daysubject(tuesday, programming)
daysubject(tuesday, ai)
daysubject(wednesday, hacking)
daysubject(thursday, networking)
daysubject(friday, pl)

subjectdifficulty(english, simple)
subjectdifficulty(programming, medium)
subjectdifficulty(ai, hard)
subjectdifficulty(hacking, hard)
subjectdifficulty(networking, medium)
subjectdifficulty(pl, easiest)

daysubjectdifficulty(X, Y, Z) :- daysubject(X, Y), subjectdifficulty(Y, Z)

?- daysubjectdifficulty(thursday, networking, medium)
yes
?- daysubjectdifficulty(tuesday, ai, hard)
yes
?- daysubjectdifficulty(tuesday, programming, medium)
yes
?- daysubjectdifficulty(tuesday, ai, medium)
no
?- daysubjectdifficulty(wednesday, ai, hard)
no
```