

TRƯỜNG ĐẠI HỌC KHOA HỌC TỰ NHIÊN
KHOA CÔNG NGHỆ THÔNG TIN



BÁO CÁO ĐỒ PROJECT 2: LOGIC

Bộ môn: Cơ sở trí tuệ nhân tạo

Giảng viên lý thuyết: Bùi Tiến Lên

Giảng viên thực hành: Nguyễn Ngọc Đức

Nhóm thực hiện:

20127302: Đinh Anh Quốc

20127318: Phan Trí Tài

20127441: Võ Minh Anh

Hồ Chí Minh, ngày 24 tháng 04 năm 2022

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1. Thông tin thành viên

<i>Họ và tên</i>	<i>MSSV</i>
Đình Anh Quốc	20127302
Phan Trí Tài	20127318
Võ Minh Anh	20127441

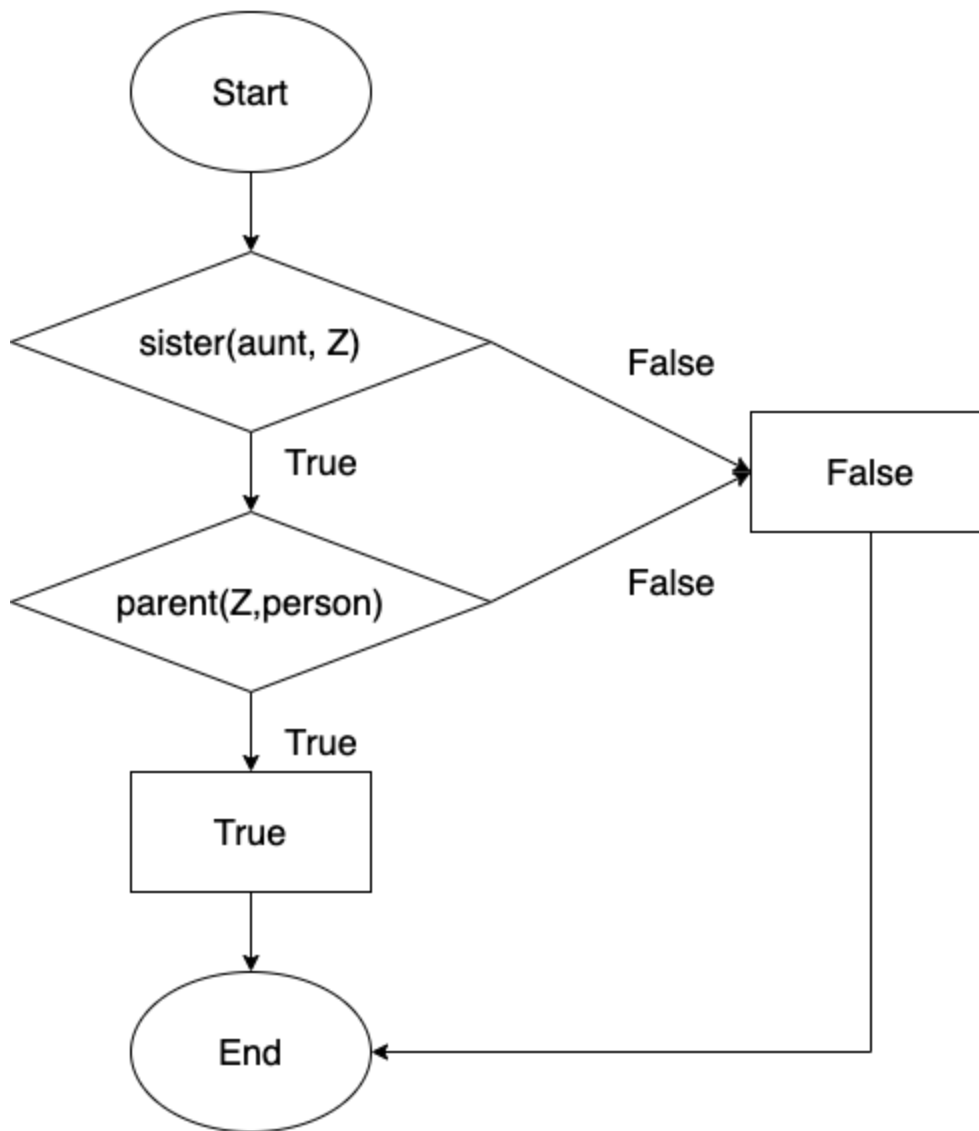
2. Tiến độ hoàn thành và bảng phân công

<i>Người thực hiện</i>	<i>Phần trăm công việc</i>
Đình Anh Quốc	100%
Phan Trí Tài	100%
Võ Minh Anh	100%

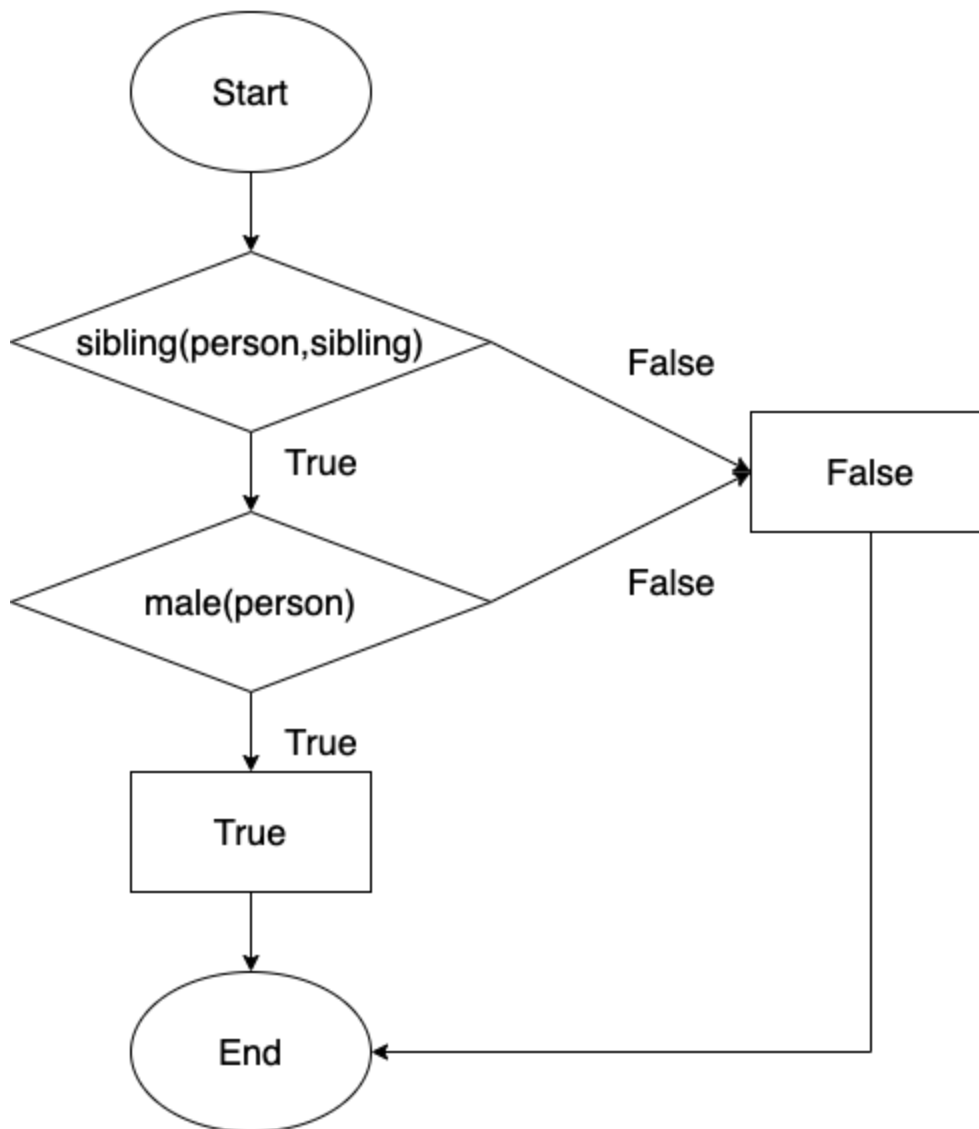
<i>Mức độ hoàn thành</i>
100%

3. Biểu đồ hiển thị chương trình

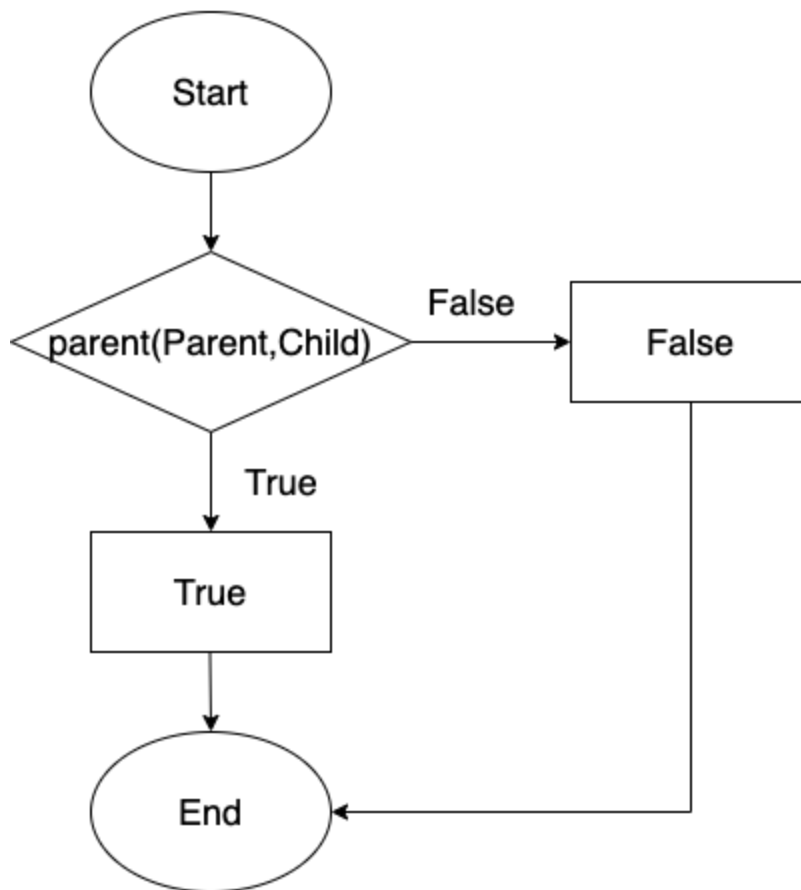
aunt(aunt, person)



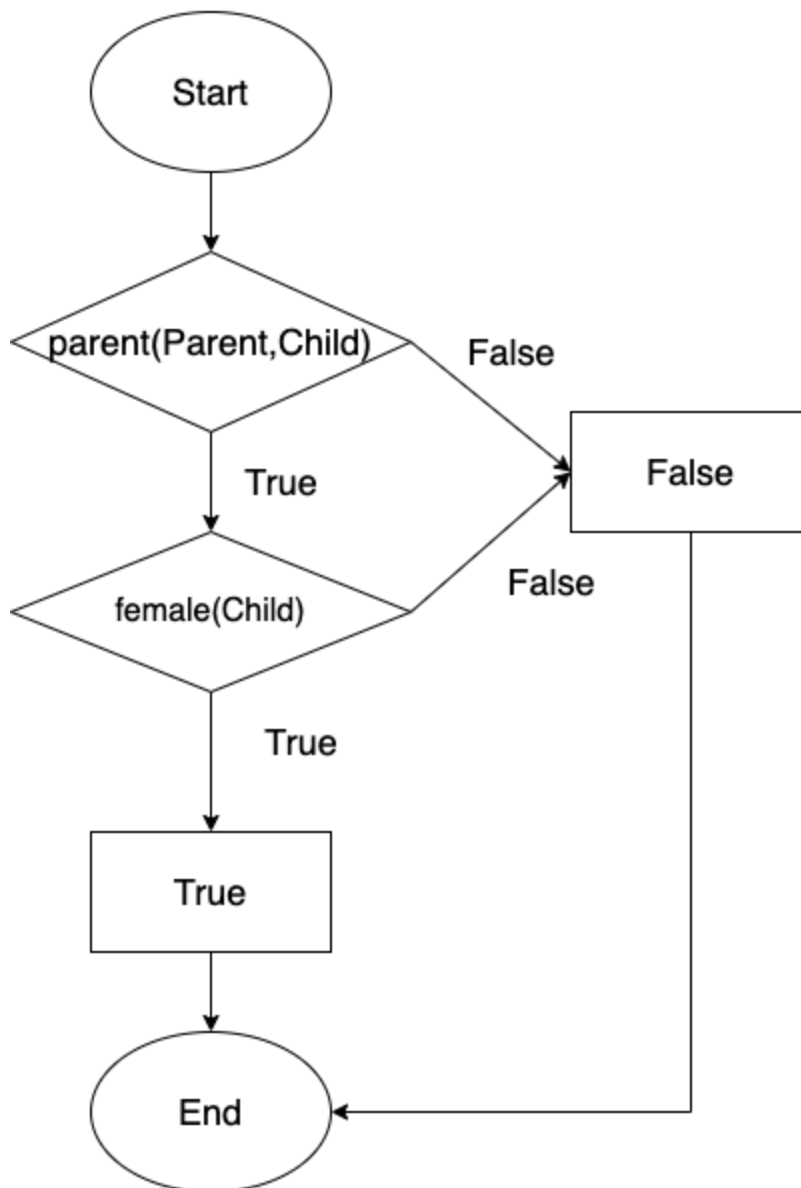
brother(person,sibling)



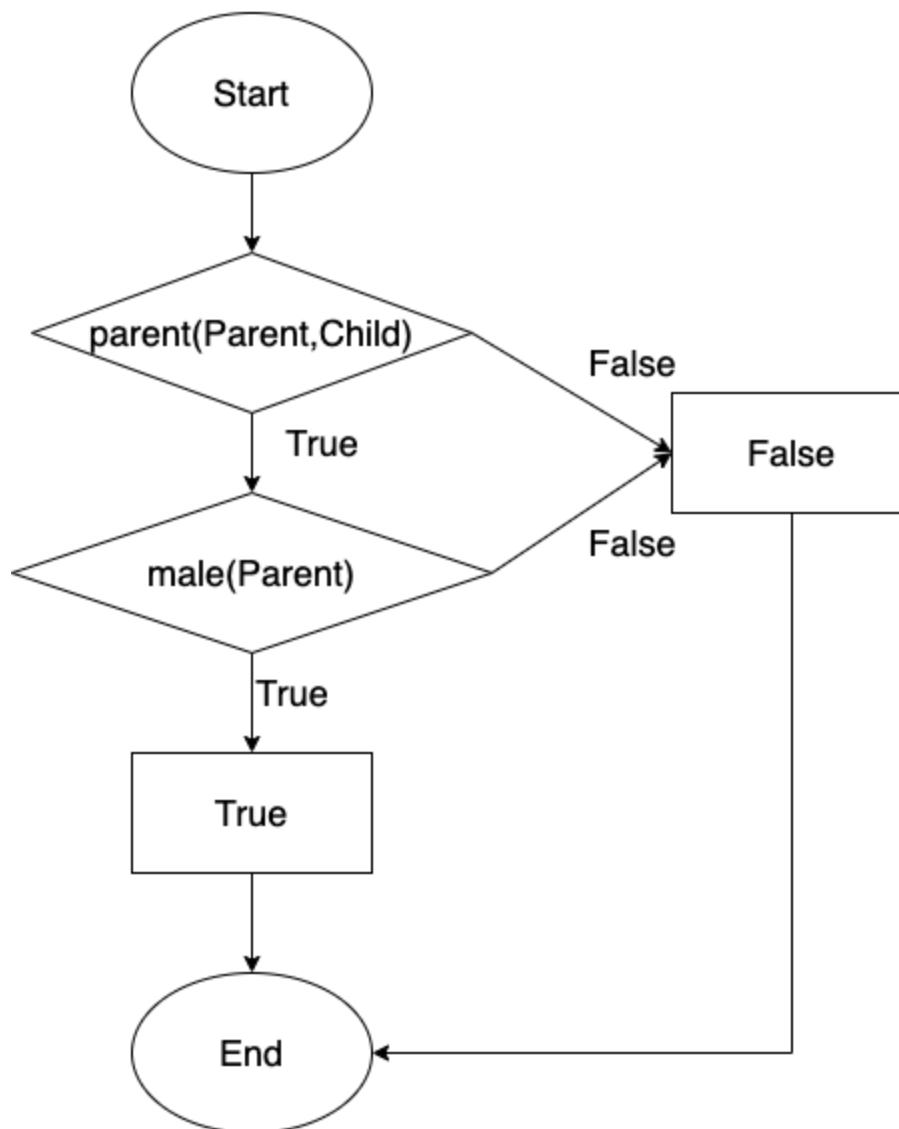
child(Child,Parent)



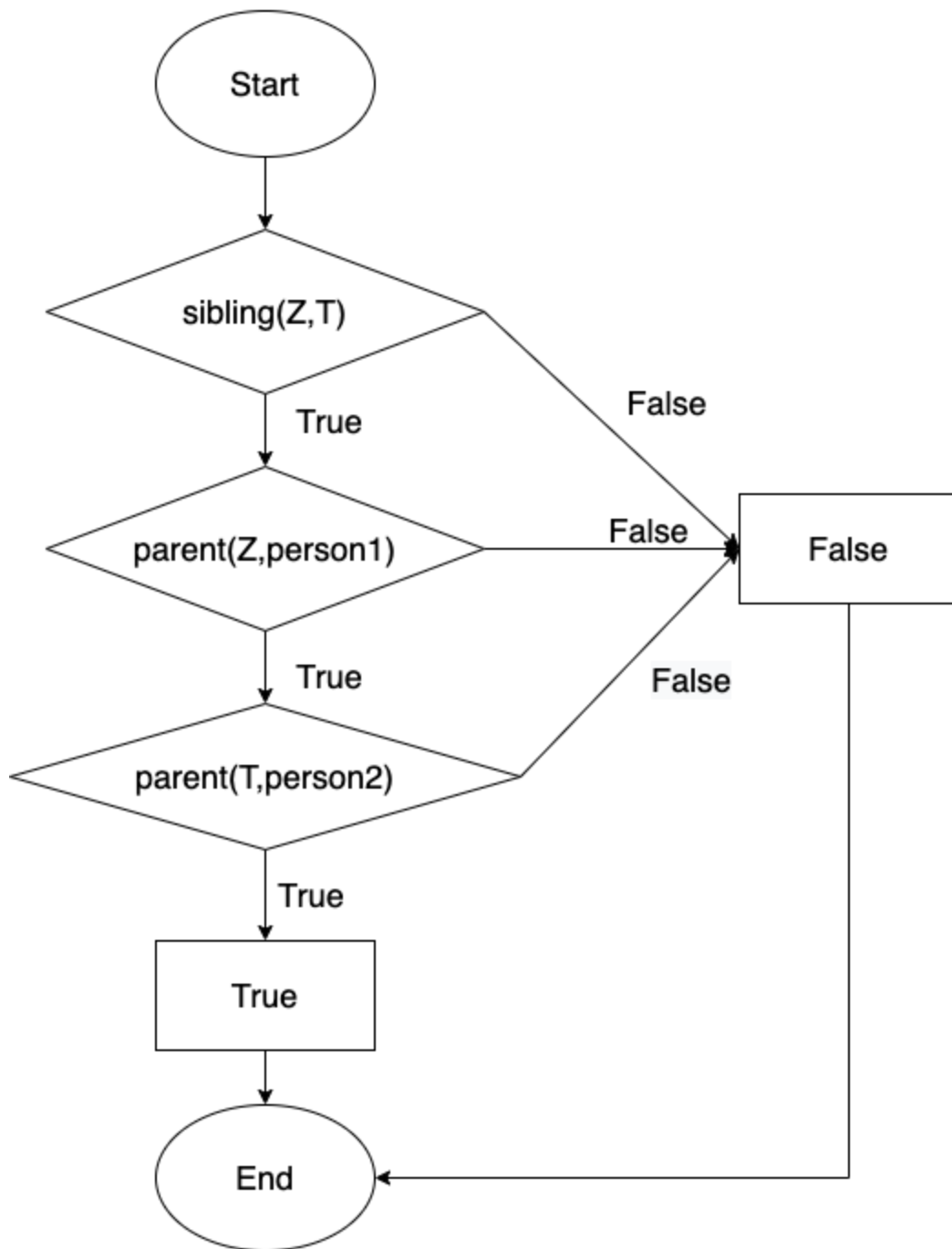
daughter(Child,Parent)



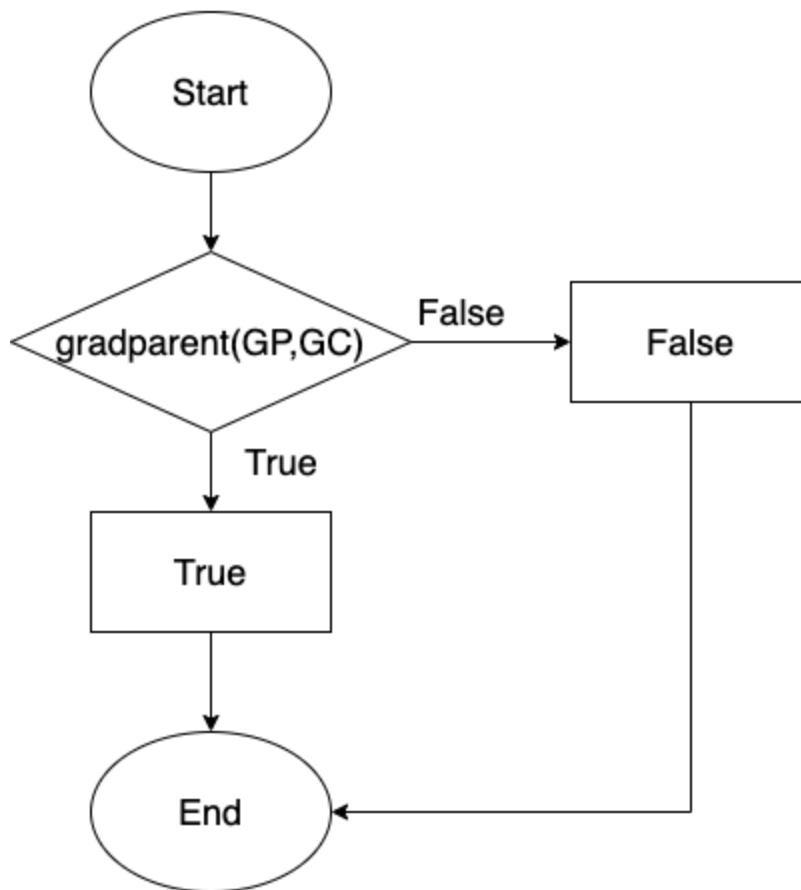
father(Parent,Child)



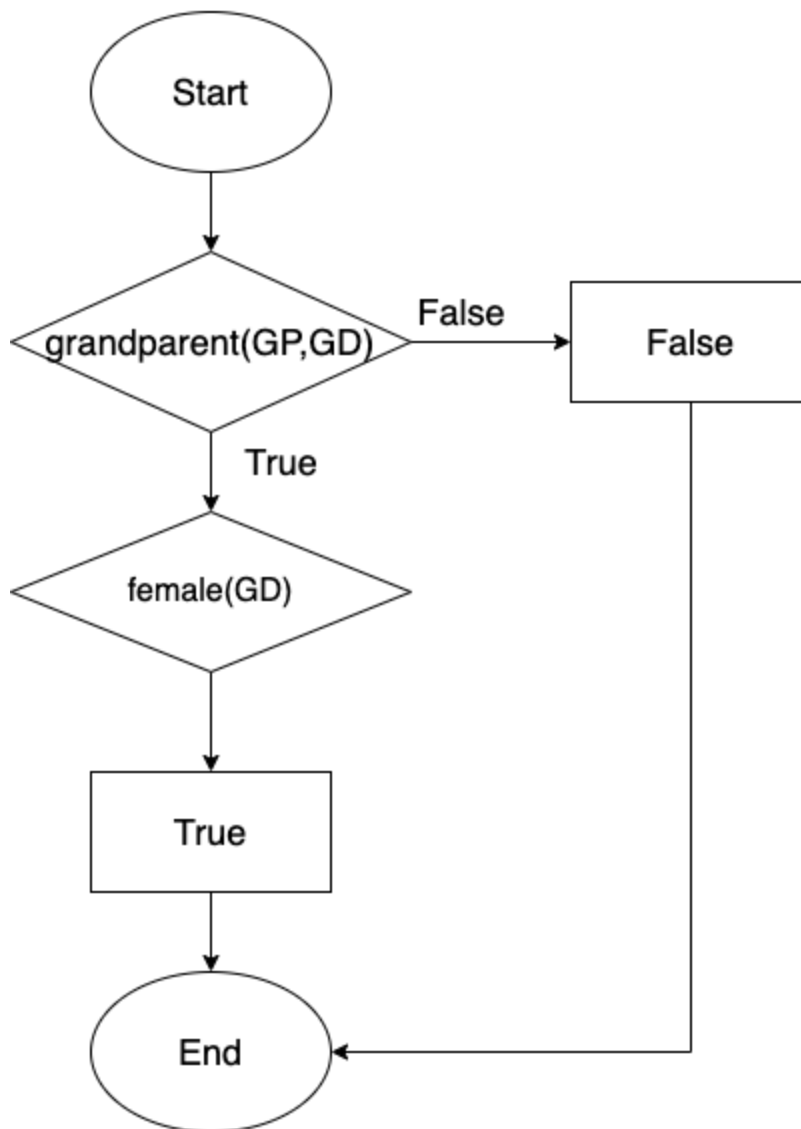
firstCousin(person1, person2)



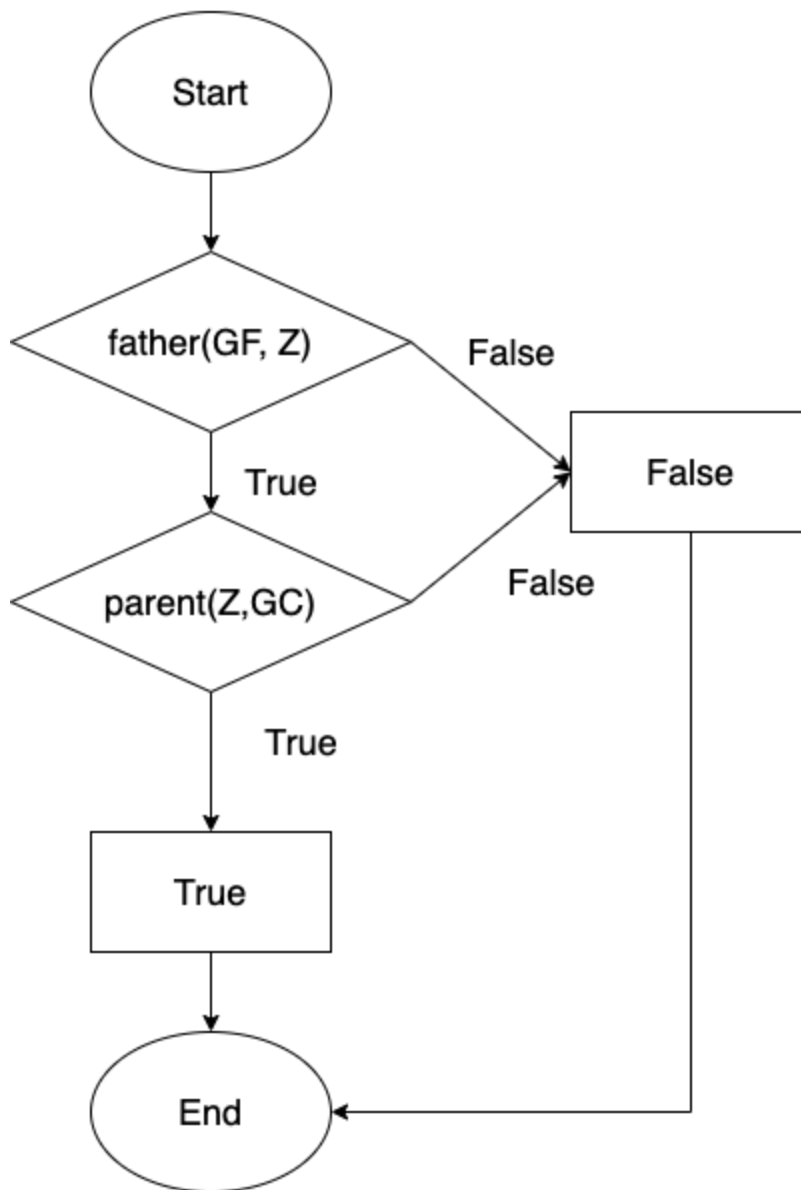
grandchild(GC,GP)



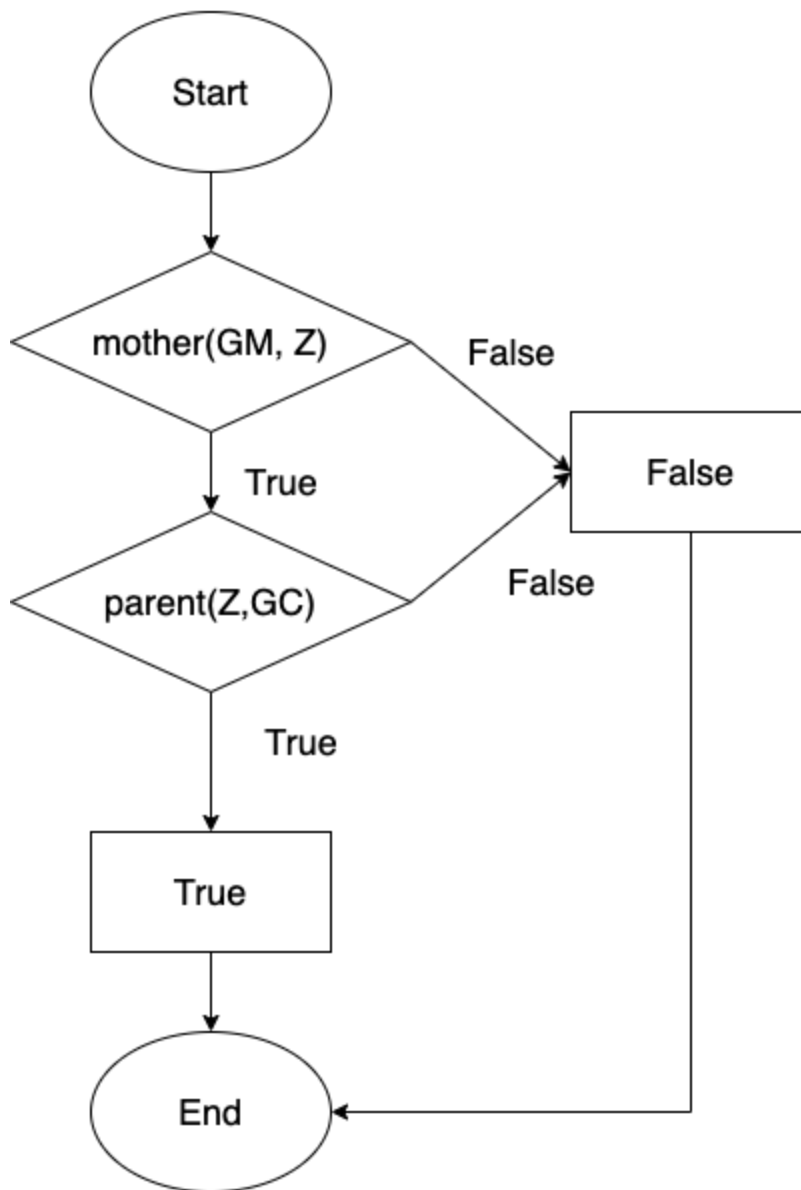
granddaughter(GD,GP)



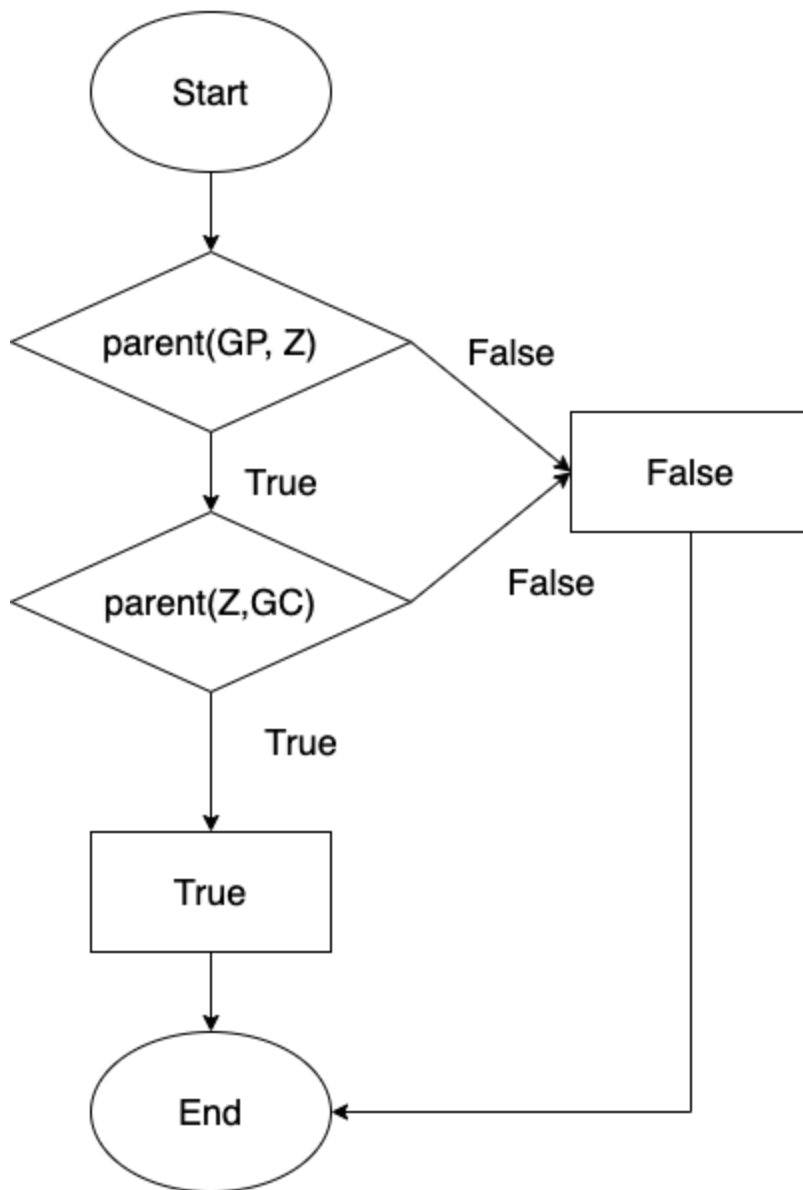
grandfather(GF,GC)



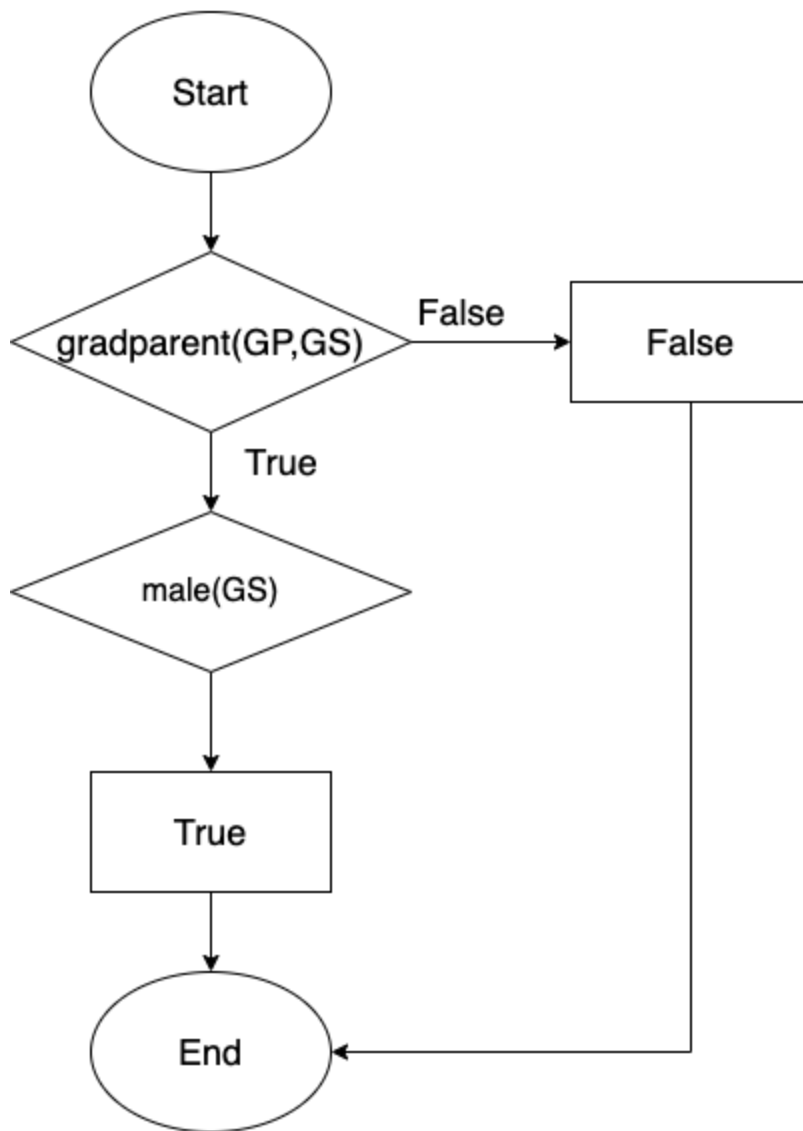
grandmother(GM,GC)



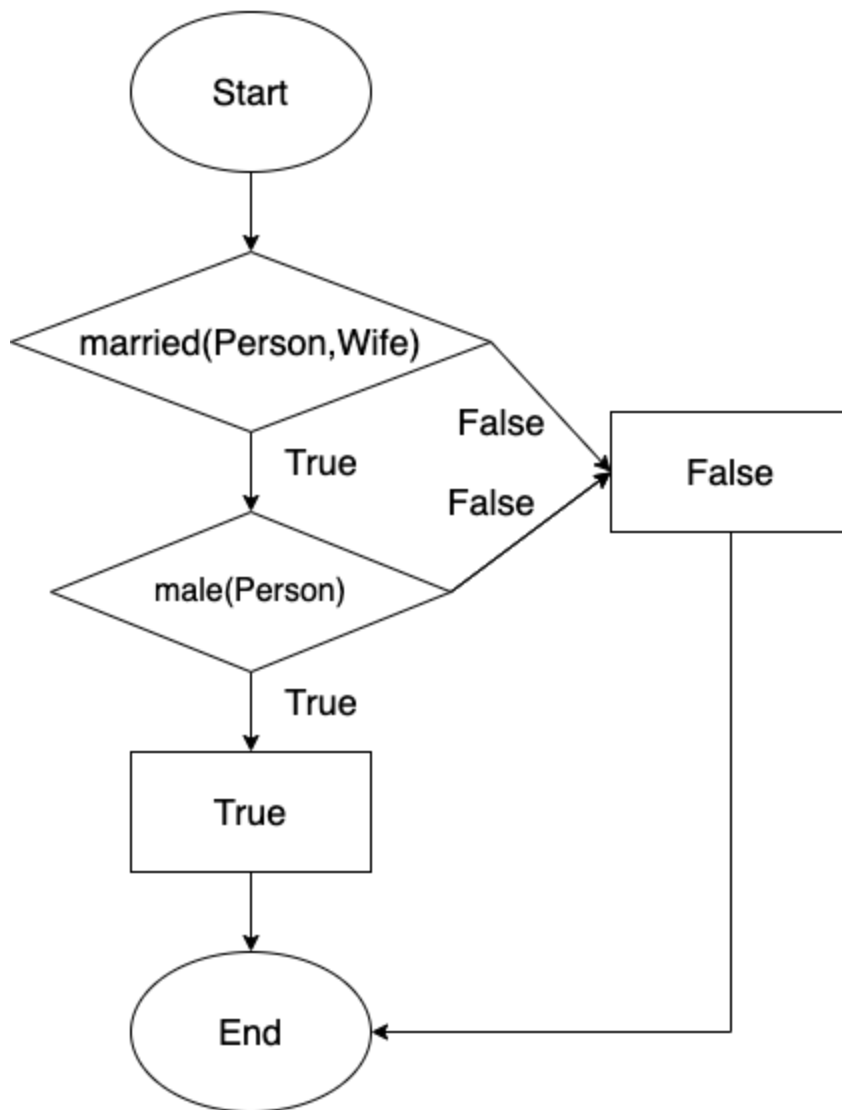
grandparent(GP,GC)



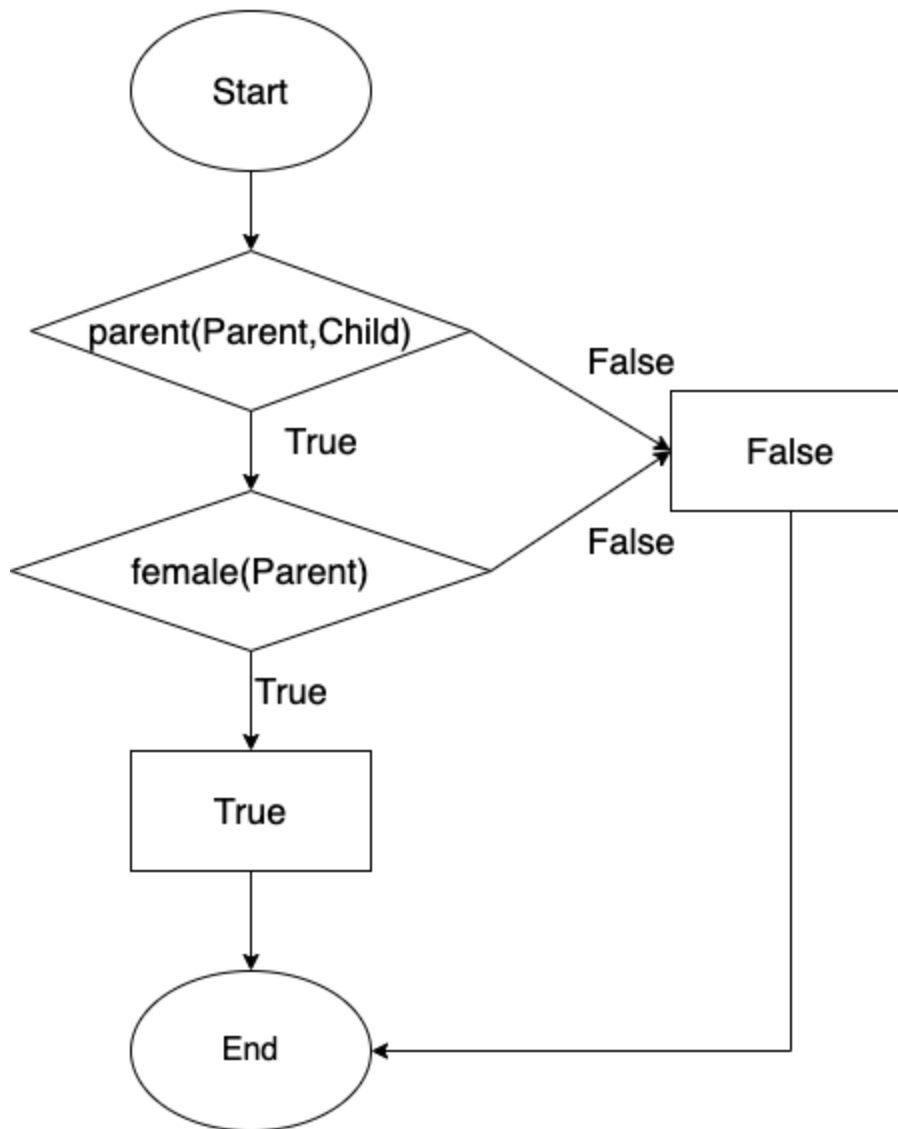
grandson(GS,GP)



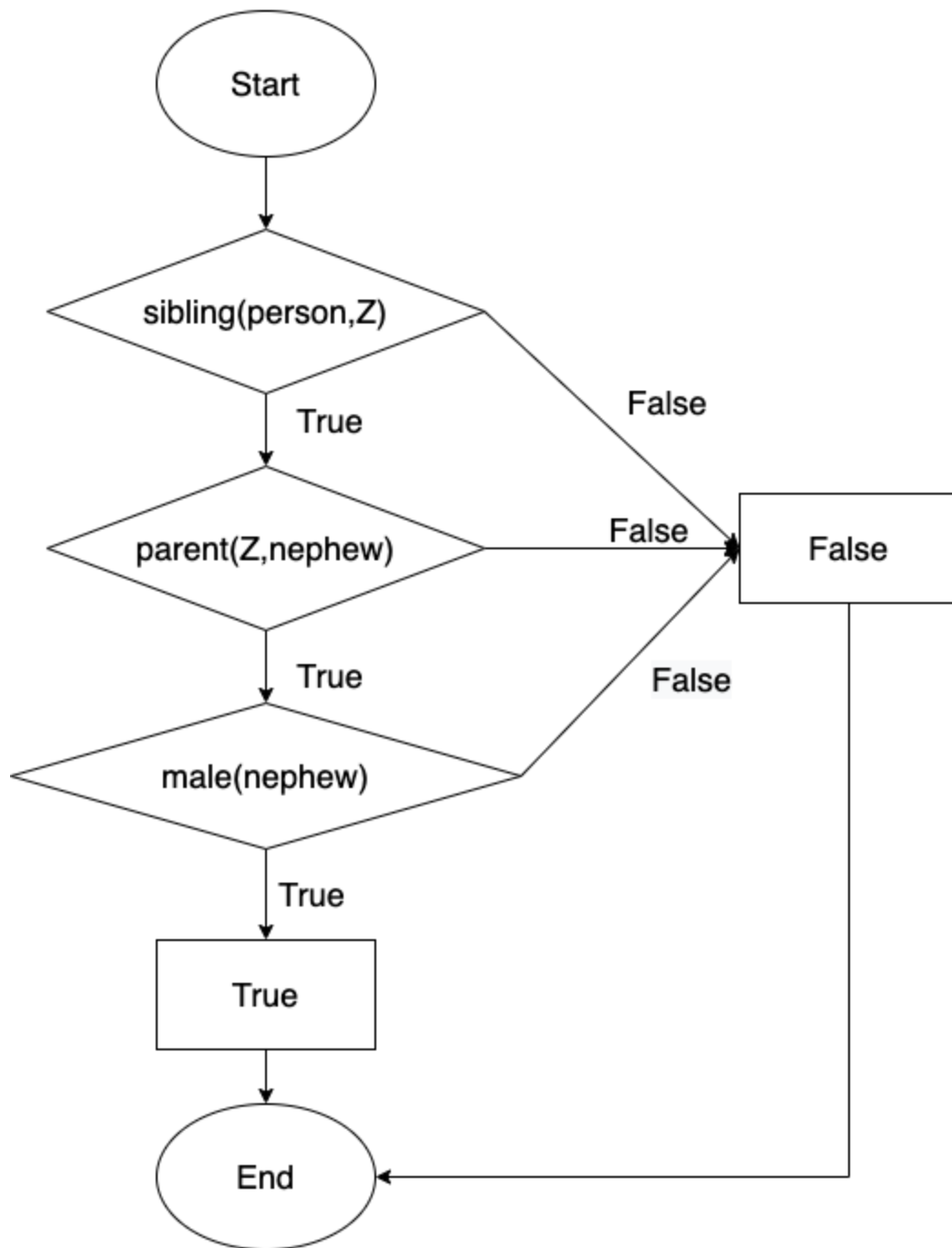
Husband(Person,Wife)



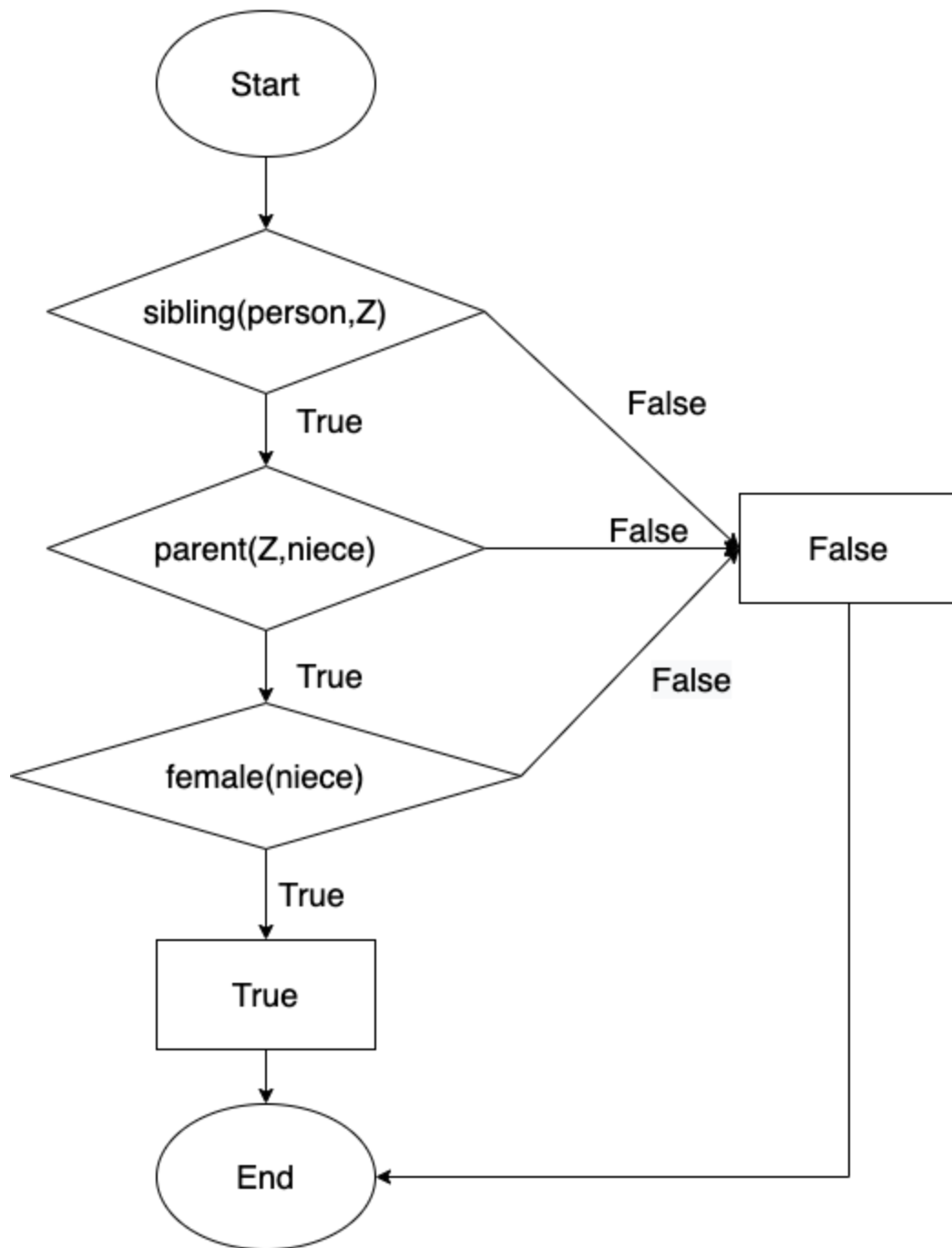
mother(Parent,Child)



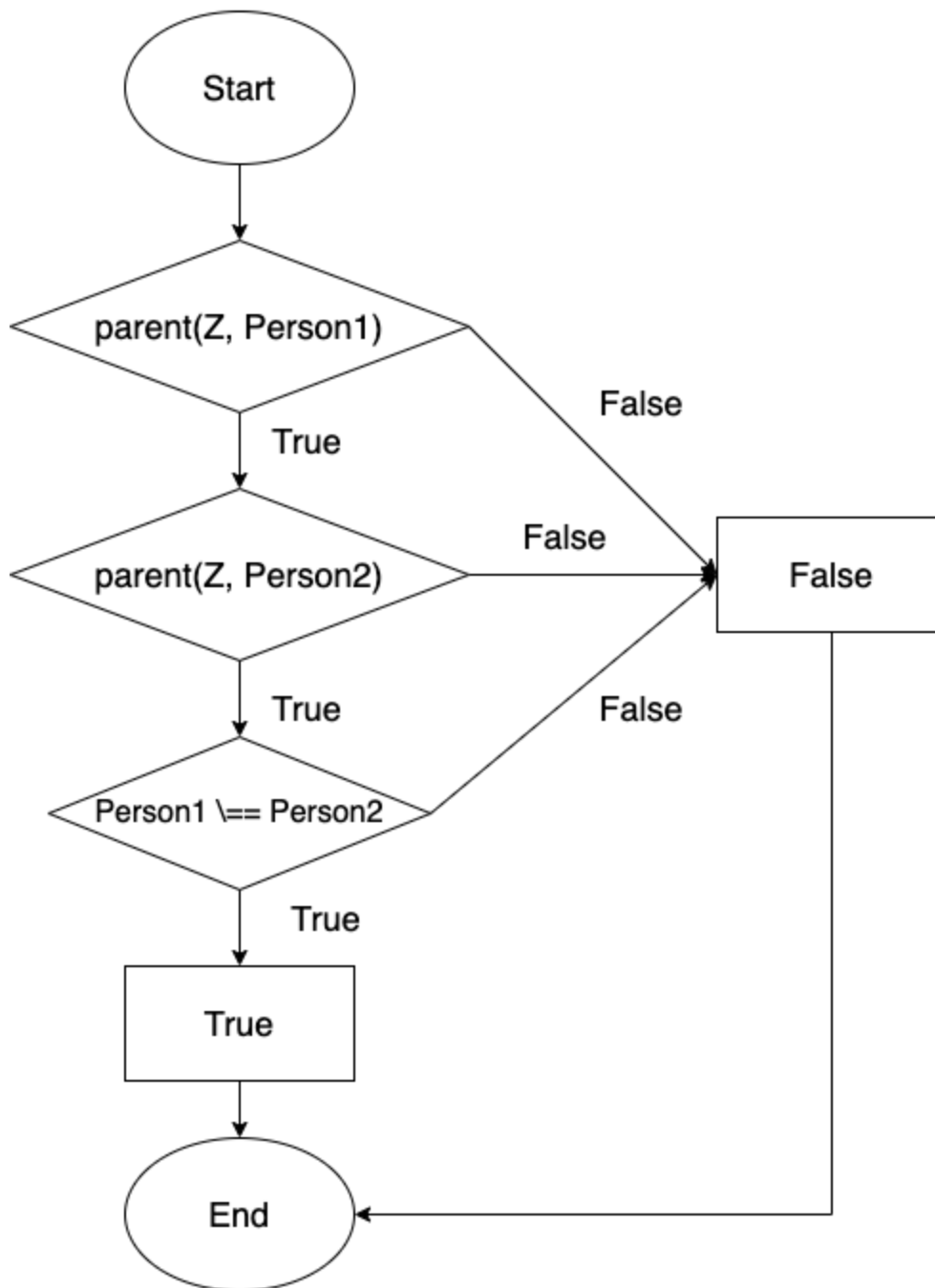
nephew(nephew, person)



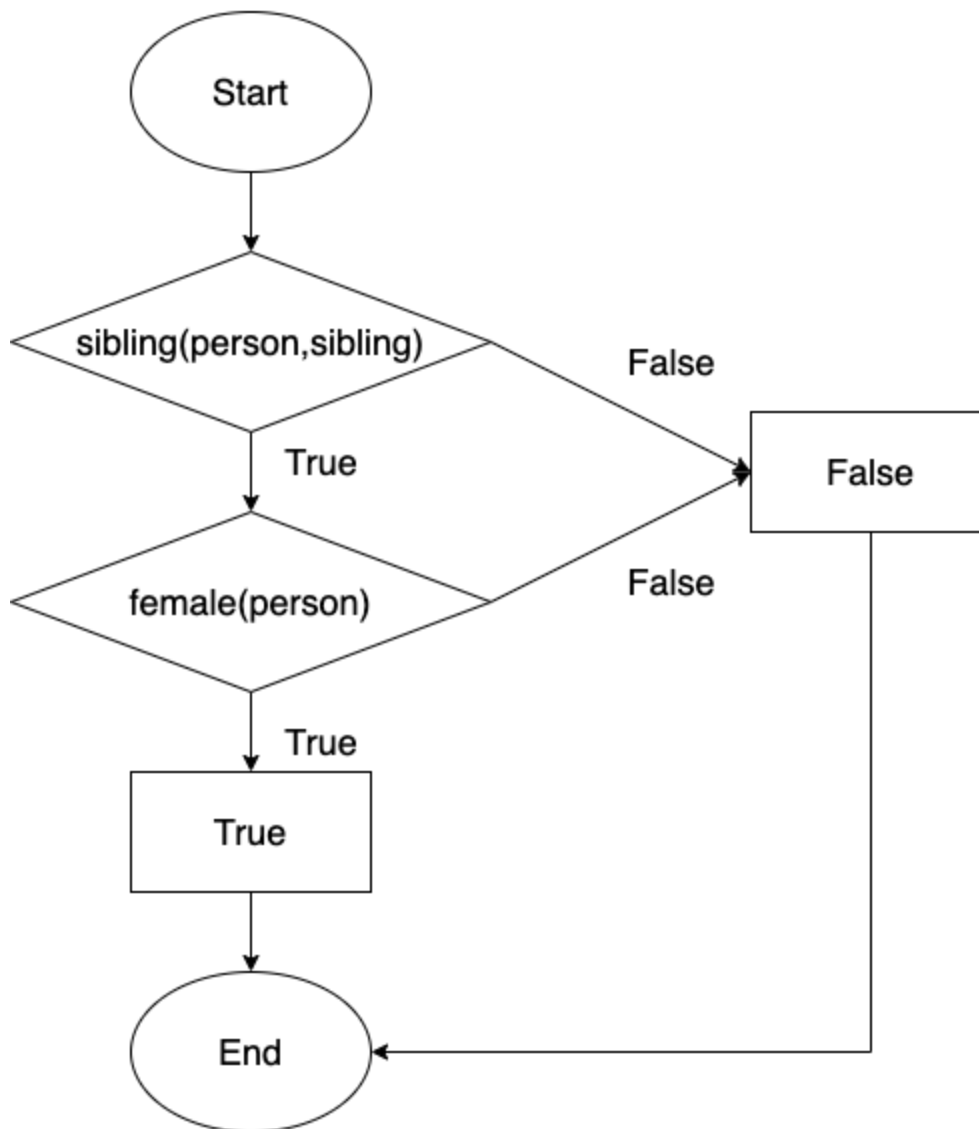
niece(niece, person)



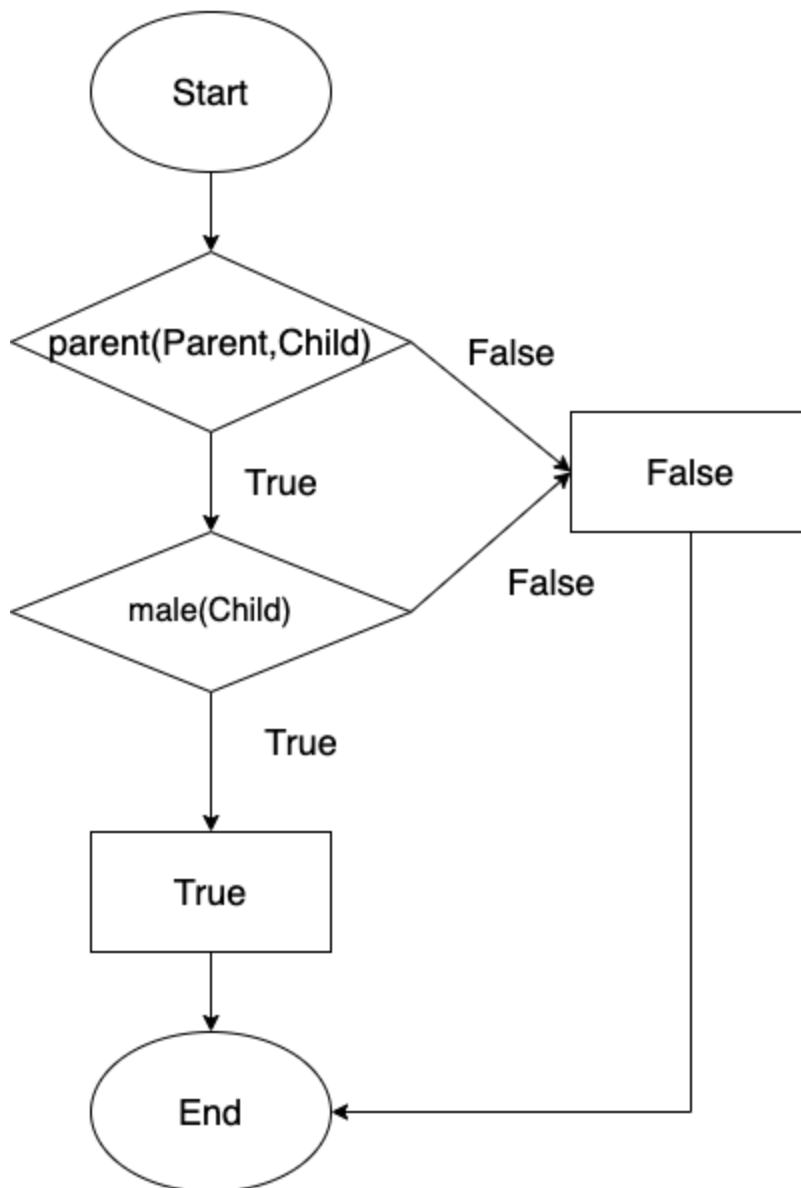
sibling(Person1, Person2)



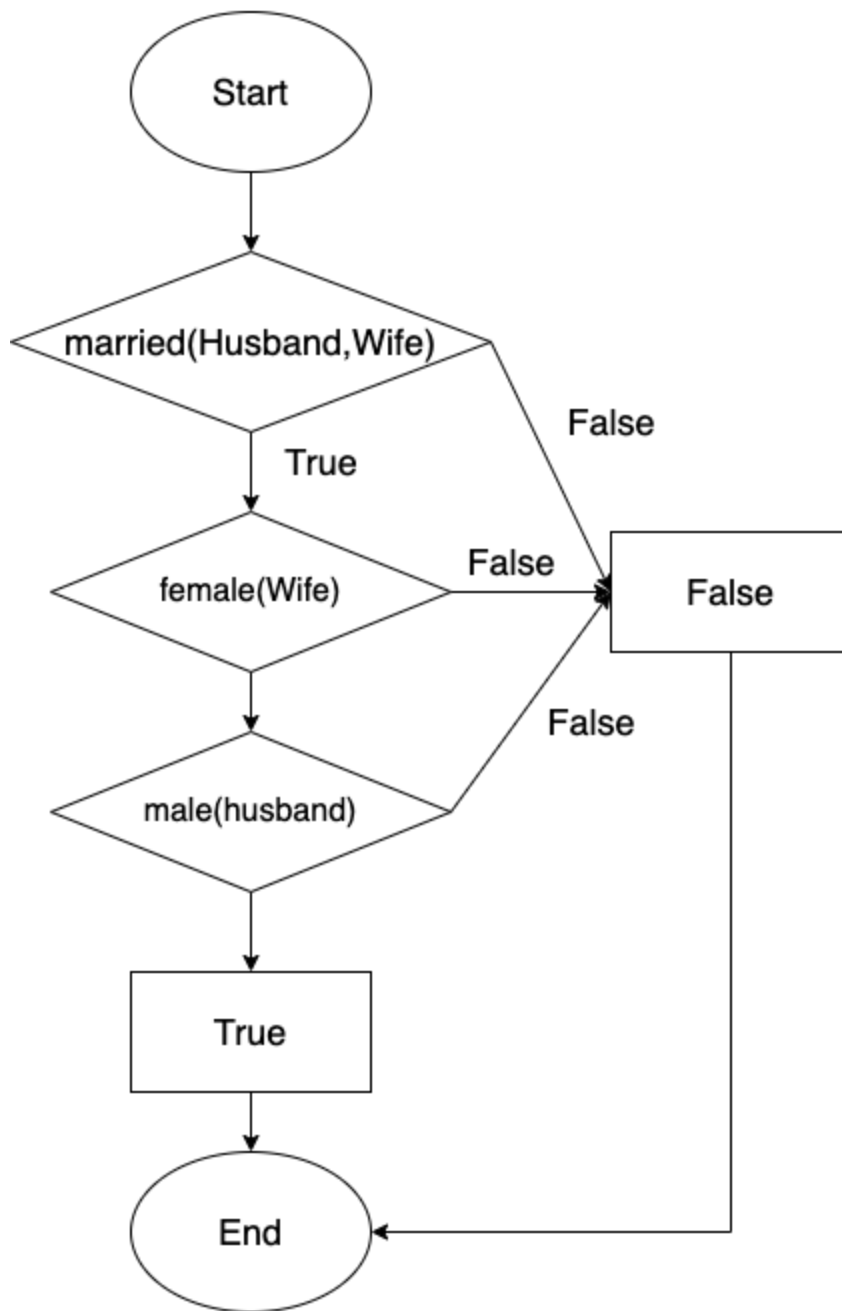
sister(person,sibling)



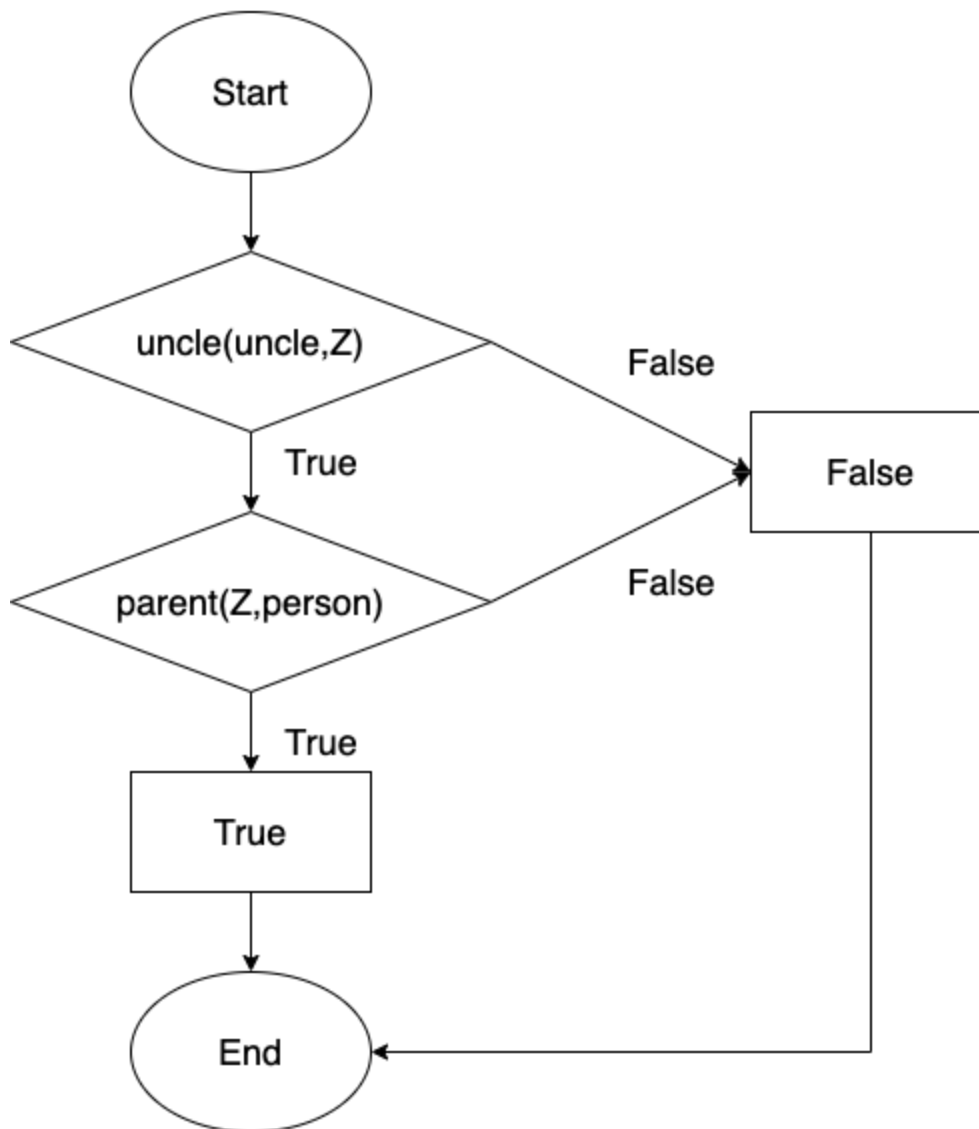
son(Child,Parent)



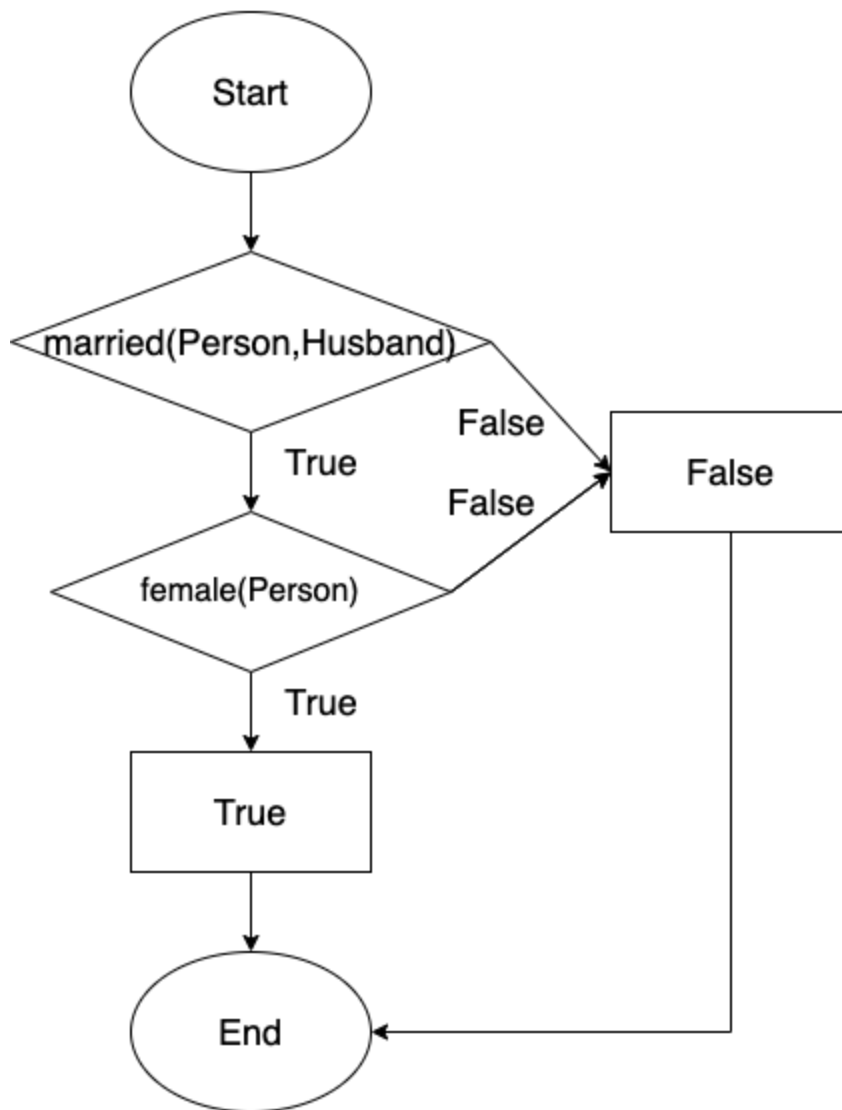
spouse(Husband,Wife)



uncle(uncle, person)



Wife(Person,Husband)



4. Cấu trúc dữ liệu sử dụng trong chương trình

- Cây gia phả

- First-Order Logic (FOL)

5. Chương trình “British Royal Family”

a) Hướng dẫn chạy chương trình

- Mở song song SWI-Prolog và file source.pl
- Nhập ?- working_directory(CWD,'C:/AI').

```
?- working_directory(CWD, 'C:/AI').
CWD = 'c:/users/admin/documents/prolog/'.
```

- Nhập ?- [source]

```
?- [source].
true.
```

- Tùy vào người dung muốn đặt câu hỏi nào thì nhập theo một số lệnh dưới đây:

VD: parent(Parent,Child), male(Person), female(Person), married(Person, Person), divorced(Person, Person), ...

b) 20 ví dụ khác nhau để truy vấn các mối quan hệ trong British Royal Family

- Who are the parents of Peter Phillips? ?- parent(X,peter_Phillips).

```
?- parent(X,peter_Phillips).
X = mark_Phillips ;
X = anne.
```

- Who is the father of Edward? ?- father(X,edward).

```
?- father(X,edward).
X = philip ;
false.
```

- Who is the mother of James? ?- mother(X,james).

```
?- mother(X,james).
X = sophie_Rhys_Jones.
```

- Who is the child of Meghan Markle? ?- child(X,meghan_Markle).

```
?- child(X,meghan_Markle).
X = archie_Harrison.
```

- Who is the son of Charles? ?- son(X,charles).

```
?- son(X,charles).
X = william ;
X = harry.
```

- Who is the daughter of Andrew? ?- daughter(X,andrew).

```
?- daughter(X,andrew).
X = eugenie ;
X = beatrice.
```

- Who is the grandparent of James? ?- grandparent(X,james).

```
?- grandparent(X,james)
|
X = philip ;
X = queen_Elizabeth_II ;
false.
```

- Who is the grandmother of James? ?- grandmother(X,james).

```
?- grandmother(X,james).
X = queen_Elizabeth_II ;
false.
```

- Who is the grandfather of Mike Tindall? ?- grandfather(X,mike_Tindall).

```
?- grandfather(X,mike_Tindall).
false.
```

- Who is the child of Philip? ?- grandchild(X,philip).

```
?- grandchild(X,philip).
X = william ;
X = harry ;
X = eugenie ;
X = beatrice ;
X = peter_Phillips ;
X = zara_Tindall ;
X = louis_indsor ;
X = james.
```

- Who is the grandson of Diana? ?- grandson(X,diana).

```
?- grandson(X,diana).
X = george ;
X = louis ;
X = archie_Harrison.
```

- Who is the granddaughter of Queen Elizabeth II?
?-granddaughter(X,queen_Elizabeth_II).

```
?- granddaughter(X,queen_Elizabeth_II).
X = eugenie ;
X = beatrice ;
X = zara_Tindall ;
false.
```

- Who is the spouse of Kate Middleton? ?- spouse(X,kate_Middleton).

```
?- spouse(X,kate_Middleton).
X = william.
```

- Who is the husband of Autumn Phillips? ?- husband(X,autumn_Phillips).

```
?- husband(X,autumn_Phillips).
X = peter_Phillips.
```

- Who is the male of British Royal Family? ?- male(X).

```
?- male(X).
X = philip ;
X = pharles ;
X = william ;
X = harry ;
X = louis ;
X = george ;
X = archie_Harrison ;
X = andrew ;
X = edward ;
X = mark_Phillips ;
X = timothy_Laurence ;
X = peter_Phillips ;
X = mike_Tindall ;
X = james.
```

- Who is the female of British Royal Family? ?- female(X).

```
?- female(X).
X = queen_Elizabeth_II ;
X = diana ;
X = camilia_Parker_Bowles ;
X = kate_Middleton ;
X = megan_Markle ;
X = anne ;
X = charlotte ;
X = autumn_Phillips ;
X = zara_Tindall ;
X = sarah_Ferguson ;
X = eugenie ;
X = beatrice ;
X = sophie_Rhys_Jones ;
X = louis_Windsor.
```

- Who is married with Sarah Ferguson? ?- married(X,sarah_Ferguson).

```
?- married(X,sarah_Ferguson).
X = andrew.
```

- Who is divorced Diana? ?- divorced(X,diana).

?- divorced(X,diana).
 X = charles.
- Who is the husband of Zara Tindall? ?- husband(X,zara_Tindall).

?- husband(X,zara_Tindall).
 X = mike_Tindall.
- Who is the wife of William? ?- wife(X,william).

?- wife(X, william).
 X = kate_Middleton.

6. Nguồn tham khảo

- <https://www.youtube.com/watch?v=QzK9inYNOMQ>
- https://drive.google.com/drive/folders/17nV7s2yOy5bUtulx_gsU4h0YdzeMuwpd