Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

| female(mary) |

| parent(mary,M,F) |

| parent(john,M,F) |

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

female(mary)

Call: female(mary)

parent(mary,M,F)

parent(john,M,F)

female(mary).

parent(C,M,F):-
   mother(C,M),
   father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
   parent(mary,M,F),
   parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

female(mary)

parent(mary,M,F)

parent(john,M,F)

Call: female(mary)
Exit: female(mary)

```
female(mary).

parent(C,M,F):-
   mother(C,M),
   father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
   parent(mary,M,F),
   parent(john,M,F).
```

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
┌─────────────────────────────┐
│       female(mary)          │
└─────────────────────────────┘

┌─────────────────────────────┐
│     parent(mary,M,F)        │
│                             │
│                             │
│                             │
│                             │
│                             │
└─────────────────────────────┘

┌─────────────────────────────┐
│     parent(john,M,F)        │
│                             │
│                             │
│                             │
│                             │
└─────────────────────────────┘
```

Call: female(mary)
Exit: female(mary)
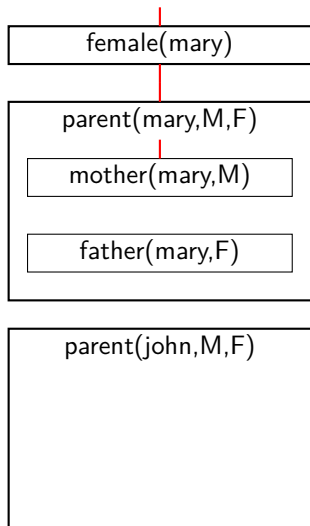Call: parent(mary,M,F)

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
female(mary)

parent(mary,M,F)

  mother(mary,M)

  father(mary,F)


parent(john,M,F)
```

Call: female(mary)
Exit: female(mary)
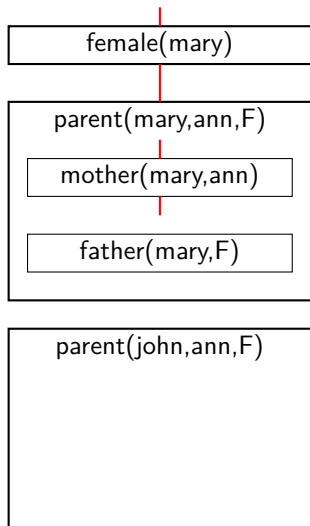Call: parent(mary,M,F)
Call: mother(mary,M)

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
┌────────────────────────────┐
│       female(mary)         │
└────────────────────────────┘

┌────────────────────────────┐
│    parent(mary,ann,F)      │
│   ┌────────────────────┐   │
│   │  mother(mary,ann)  │   │
│   └────────────────────┘   │
│   ┌────────────────────┐   │
│   │   father(mary,F)   │   │
│   └────────────────────┘   │
└────────────────────────────┘

┌────────────────────────────┐
│    parent(john,ann,F)      │
│                            │
│                            │
│                            │
│                            │
└────────────────────────────┘
```

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)

M = ann
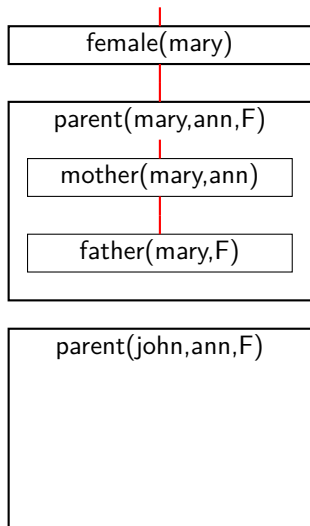
```
female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
   parent(mary,M,F),
   parent(john,M,F).
```

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

female(mary)

parent(mary,ann,F)

mother(mary,ann)

father(mary,F)

parent(john,ann,F)

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
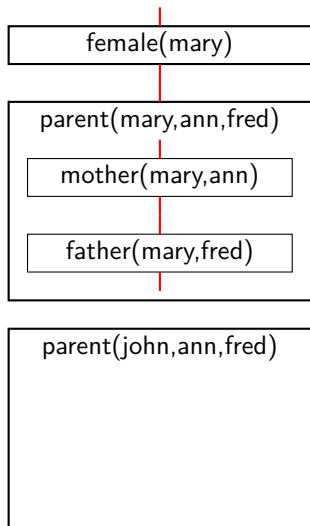Call: father(mary,F)

M = ann

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
female(mary)

  parent(mary,ann,fred)

     mother(mary,ann)

     father(mary,fred)


  parent(john,ann,fred)
```

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
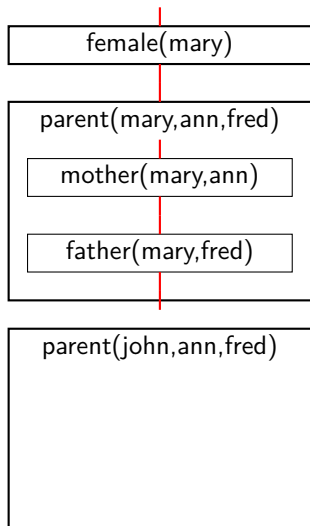Exit: father(mary,fred)

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).

M = ann
F = fred

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
┌─────────────────────────────┐
│        female(mary)         │
└─────────────────────────────┘

┌─────────────────────────────┐
│   parent(mary,ann,fred)     │
│  ┌───────────────────────┐  │
│  │    mother(mary,ann)   │  │
│  └───────────────────────┘  │
│  ┌───────────────────────┐  │
│  │    father(mary,fred)  │  │
│  └───────────────────────┘  │
└─────────────────────────────┘

┌─────────────────────────────┐
│   parent(john,ann,fred)     │
│                             │
│                             │
│                             │
│                             │
│                             │
└─────────────────────────────┘
```

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
Exit: father(mary,fred)
Exit: parent(mary,ann,fred)

$M = ann$
$F = fred$

female(mary).

parent(C,M,F):-
   mother(C,M),
   father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
   parent(mary,M,F),
   parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
Exit: father(mary,fred)
Exit: parent(mary,ann,fred)
Call: parent(john,ann,fred)
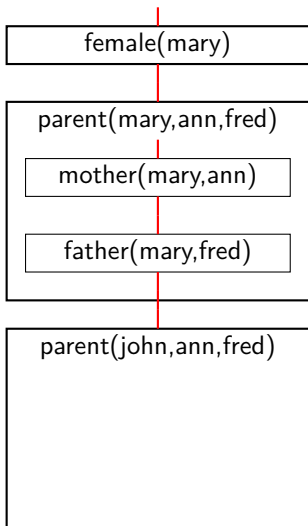
female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).

M = ann
F = fred

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
┌─────────────────────────────┐
│        female(mary)          │
└─────────────────────────────┘

┌─────────────────────────────┐
│    parent(mary,ann,fred)     │
│  ┌────────────────────────┐  │
│  │    mother(mary,ann)     │  │
│  └────────────────────────┘  │
│  ┌────────────────────────┐  │
│  │    father(mary,fred)    │  │
│  └────────────────────────┘  │
└─────────────────────────────┘

┌─────────────────────────────┐
│    parent(john,ann,fred)     │
│  ┌────────────────────────┐  │
│  │    mother(john,ann)     │  │
│  └────────────────────────┘  │
│  ┌────────────────────────┐  │
│  │    father(john,fred)    │  │
│  └────────────────────────┘  │
└─────────────────────────────┘
```
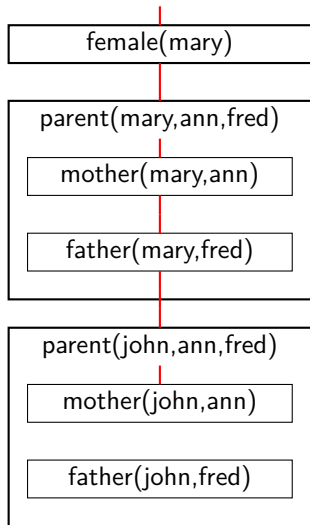
Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
Exit: father(mary,fred)
Exit: parent(mary,ann,fred)
Call: parent(john,ann,fred)
Call: mother(john,ann)

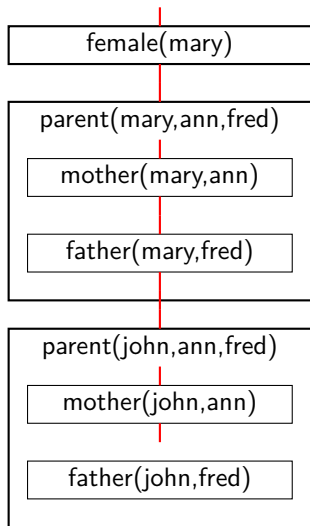$M =$ ann
$F =$ fred

female(mary).

parent(C,M,F):-
   mother(C,M),
   father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
   parent(mary,M,F),
   parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
┌────────────────────────────┐
│      female(mary)          │
└────────────────────────────┘

┌────────────────────────────┐
│   parent(mary,ann,fred)    │
│  ┌──────────────────────┐  │
│  │   mother(mary,ann)   │  │
│  └──────────────────────┘  │
│  ┌──────────────────────┐  │
│  │   father(mary,fred)  │  │
│  └──────────────────────┘  │
└────────────────────────────┘

┌────────────────────────────┐
│   parent(john,ann,fred)    │
│  ┌──────────────────────┐  │
│  │   mother(john,ann)   │  │
│  └──────────────────────┘  │
│  ┌──────────────────────┐  │
│  │   father(john,fred)  │  │
│  └──────────────────────┘  │
└────────────────────────────┘
```

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
Exit: father(mary,fred)
Exit: parent(mary,ann,fred)
Call: parent(john,ann,fred)
Call: mother(john,ann)
Exit: mother(john,ann)

M = ann
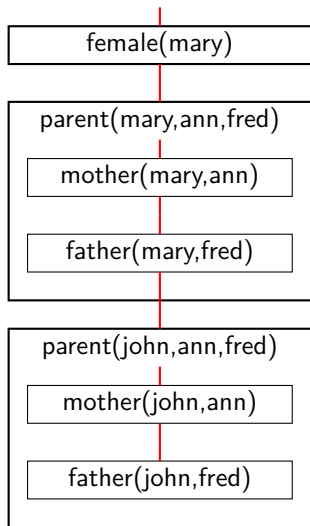F = fred

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung


```
female(mary)

parent(mary,ann,fred)
    mother(mary,ann)
    father(mary,fred)

parent(john,ann,fred)
    mother(john,ann)
    father(john,fred)
```

```
Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
Exit: father(mary,fred)
Exit: parent(mary,ann,fred)
Call: parent(john,ann,fred)
Call: mother(john,ann)
Exit: mother(john,ann)
Call: father(john,fred)
```

```
M = ann
F = fred
```
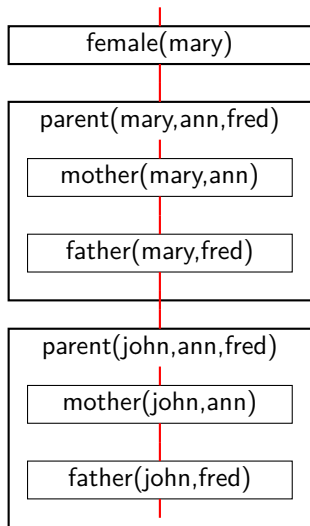
```
female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).
```

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
┌─────────────────────────────┐
│       female(mary)          │
└─────────────────────────────┘

┌─────────────────────────────┐
│    parent(mary,ann,fred)    │
│  ┌───────────────────────┐  │
│  │    mother(mary,ann)   │  │
│  └───────────────────────┘  │
│  ┌───────────────────────┐  │
│  │    father(mary,fred)  │  │
│  └───────────────────────┘  │
└─────────────────────────────┘

┌─────────────────────────────┐
│    parent(john,ann,fred)    │
│  ┌───────────────────────┐  │
│  │    mother(john,ann)   │  │
│  └───────────────────────┘  │
│  ┌───────────────────────┐  │
│  │    father(john,fred)  │  │
│  └───────────────────────┘  │
└─────────────────────────────┘
```

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
Exit: father(mary,fred)
Exit: parent(mary,ann,fred)
Call: parent(john,ann,fred)
Call: mother(john,ann)
Exit: mother(john,ann)
Call: father(john,fred)
Exit: father(john,fred)

$M = $ ann
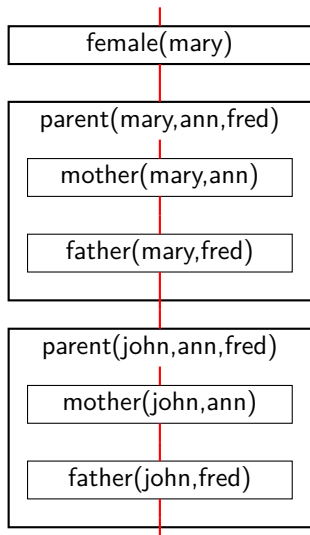$F = $ fred

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
   parent(mary,M,F),
   parent(john,M,F).

Beispiel Clocksin Mellish S.38: Ablauf der Abarbeitung

```
┌─────────────────────────────────┐
│         female(mary)            │
└─────────────────────────────────┘

┌─────────────────────────────────┐
│      parent(mary,ann,fred)      │
│   ┌─────────────────────────┐   │
│   │     mother(mary,ann)    │   │
│   └─────────────────────────┘   │
│   ┌─────────────────────────┐   │
│   │     father(mary,fred)   │   │
│   └─────────────────────────┘   │
└─────────────────────────────────┘

┌─────────────────────────────────┐
│      parent(john,ann,fred)      │
│   ┌─────────────────────────┐   │
│   │     mother(john,ann)    │   │
│   └─────────────────────────┘   │
│   ┌─────────────────────────┐   │
│   │     father(john,fred)   │   │
│   └─────────────────────────┘   │
└─────────────────────────────────┘
```

Call: female(mary)
Exit: female(mary)
Call: parent(mary,M,F)
Call: mother(mary,M)
Exit: mother(mary,ann)
Call: father(mary,F)
Exit: father(mary,fred)
Exit: parent(mary,ann,fred)
Call: parent(john,ann,fred)
Call: mother(john,ann)
Exit: mother(john,ann)
Call: father(john,fred)
Exit: father(john,fred)
Exit: parent(john,ann,fred)

M = ann
F = fred

female(mary).

parent(C,M,F):-
    mother(C,M),
    father(C,F).

mother(john,ann).
mother(mary,ann).

father(mary,fred).
father(john,fred).

?- female(mary),
    parent(mary,M,F),
    parent(john,M,F).