

## Logic Programming - Friendship

Laura has Michael, Bob, and Mary as friend. Michael has Laura, Sarah, and Mary as friend. Bob has only Peter as friend.

Of course, Laura, Mary, and Sarah are woman; Michael, Bob, and Peter are men.

```
friend(laura,michael) .           woman(laura) .
friend(laura,bob) .               woman(mary) .
friend(laura,mary) .              woman(sarah) .
friend(michael,laura) .           man(michael) .
friend(michael,sarah) .           man(bob) .
friend(michael,mary) .            man(peter) .
friend(bob,peter) .
```

a) A lucky man is a man which at least one woman as friend. Who is the LuckyMan?

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luckyMan(X) :- man(X), friend(X,Y), woman(Y) .
```

b) A happy woman only has women as friends. Who is the HappyWoman?

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notHappyWoman(X) :- man(X), friend(X,Y), man(Y) .
happyWoman(X) :- woman(X), not notHappyWoman(X) .
```

c) "A friend of a friend is also my friend." Define it.

```
friend(X,Y) :- friend(X,Z), friend(Z,Y) .
```