



SWI Prolog

Example Animals

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At the zoo, there are many animals of different sizes.

- ▶ Horses are bigger than donkeys.
- ▶ Donkeys are bigger than dogs.
- ▶ Elephants are bigger than horses.
- ▶ Donkeys are bigger than monkeys.

- Horses are bigger than donkeys.
- Donkeys are bigger than dogs.
- Elephants are bigger than horses.
- Donkeys are bigger than monkeys.

% facts

bigger (horse, donkey).
bigger (donkey, dog).
bigger (elephant, horse).
bigger (donkey, monkey).

But what happens when we ask the other way round: Is a
elephant bigger than a monkey?

?- bigger(elephant, monkey).

False

```
is_bigger(X, Y) :- bigger(X, Y).  
is_bigger(X, Y) :- bigger(X, Z), is_bigger(Z, Y).
```



% Rules

% facts

bigger (horse, donkey).

bigger (donkey, dog).

bigger (elephant, horse).

bigger (donkey, monkey).

% Rules

is_bigger(X, Y) :- bigger(X, Y).

is_bigger(X, Y) :- bigger(X, Z), is_bigger(Z, Y).

?- query 

Is a donkey bigger than a dog? **true**

?- bigger(donkey, dog).

Is a monkey bigger than an elephant? **false**

?- bigger(monkey, elephant).

Is a elephant bigger than a monkey? **false**

?- bigger(elephant, monkey).

?- query
is_bigger



Is a elephant bigger than a donkey?

?- is_bigger(elephant, donkey).

true

Who is bigger than a monkey?

?- is_bigger(X, donkey).

X = horse

X = elephant ;

An elephant is bigger than an animal X, and an animal X is bigger than a donkey. Who is an animal X?

X = horse

?- is_bigger(elephant, X), is_bigger(X, donkey).