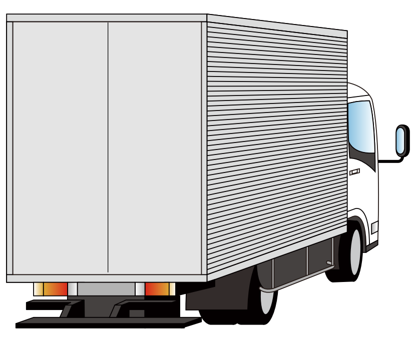
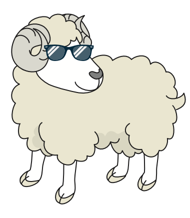
Maybe a good model for the real world

If I've got a truck of sheep, then the truck is an opaque **container.** It *has* things.

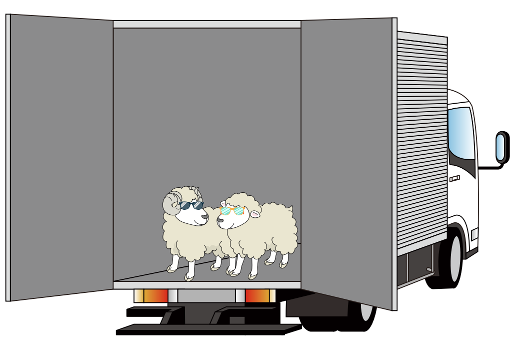


A sheep is an atomic object, I'm not concerned with its internal contents.



Code: Sheep

I can put zero or more sheep in the truck. So the truck can be modelled as a type ***Vector a***, in this case ***Vector Sheep.***



[Sheep,Sheep]

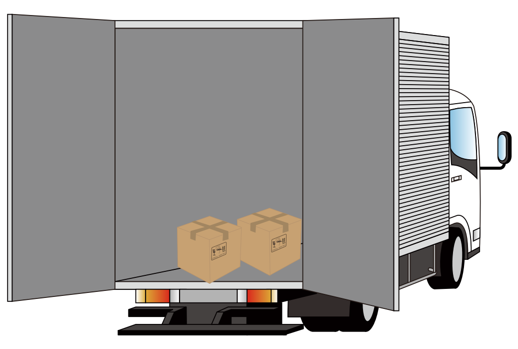
A box is an opaque container and has either nothing in it or one thing in it. So the box can be modelled as a type **Maybe a**.

In this case, it's a **Maybe Sheep**. It can either be empty or have a sheep in it.

Nothing

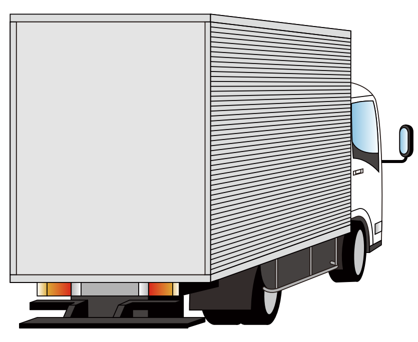
Just Sheep

If I put those boxes in a truck, then I have a **Vector (Maybe Sheep).** It's not certain that I have one or two sheep, only that I have two boxes. I'd have to open the boxes to know whether I really have sheep in there or not.

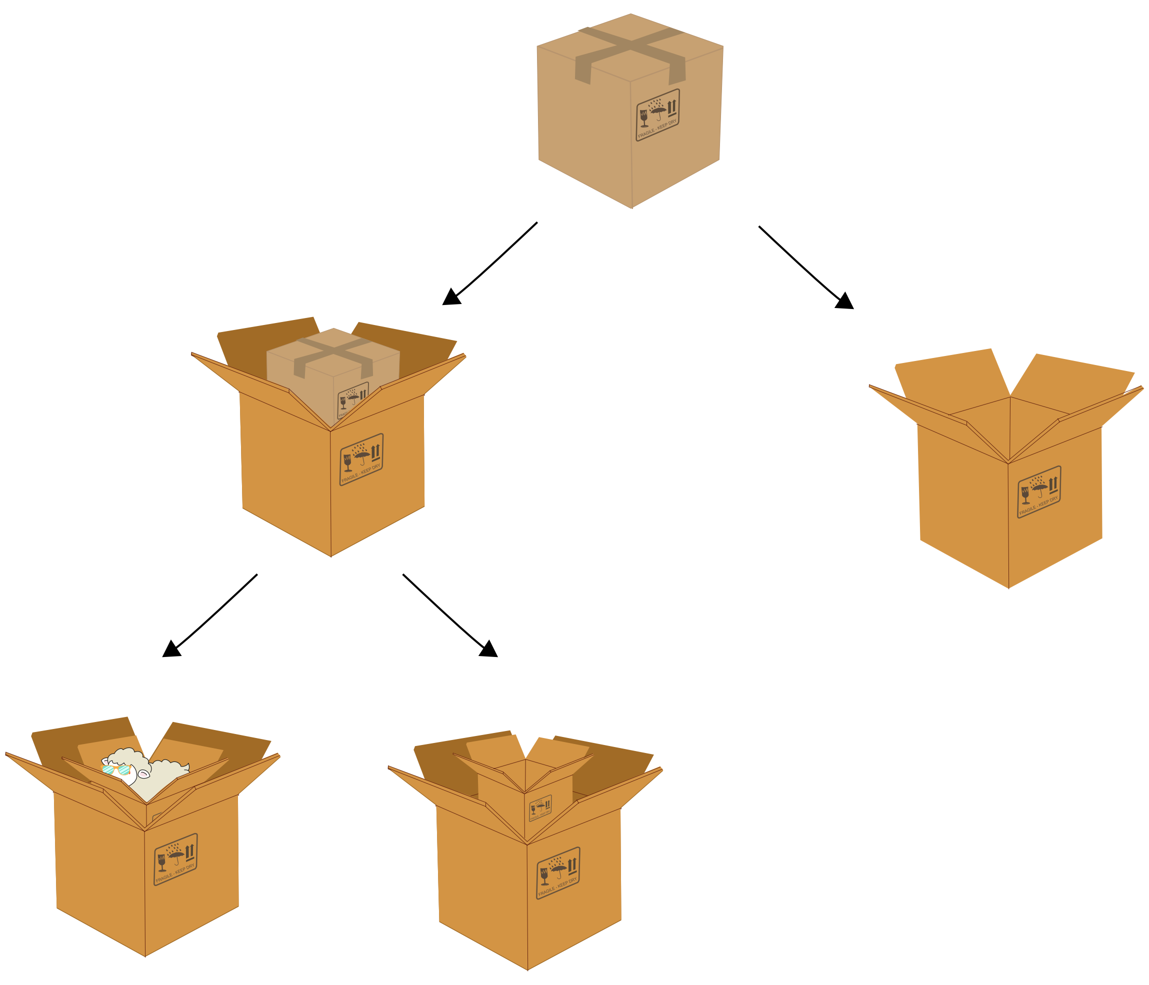


[box1, box2]

Likewise, I have to open the truck to see how many boxes I have in there.



It's possible to have a box inside a box. We have to open up the outer box to see whether there's anything in it, and then we can look inside the inner box if there is one.



This is an important property: to get back out what you have put inside.