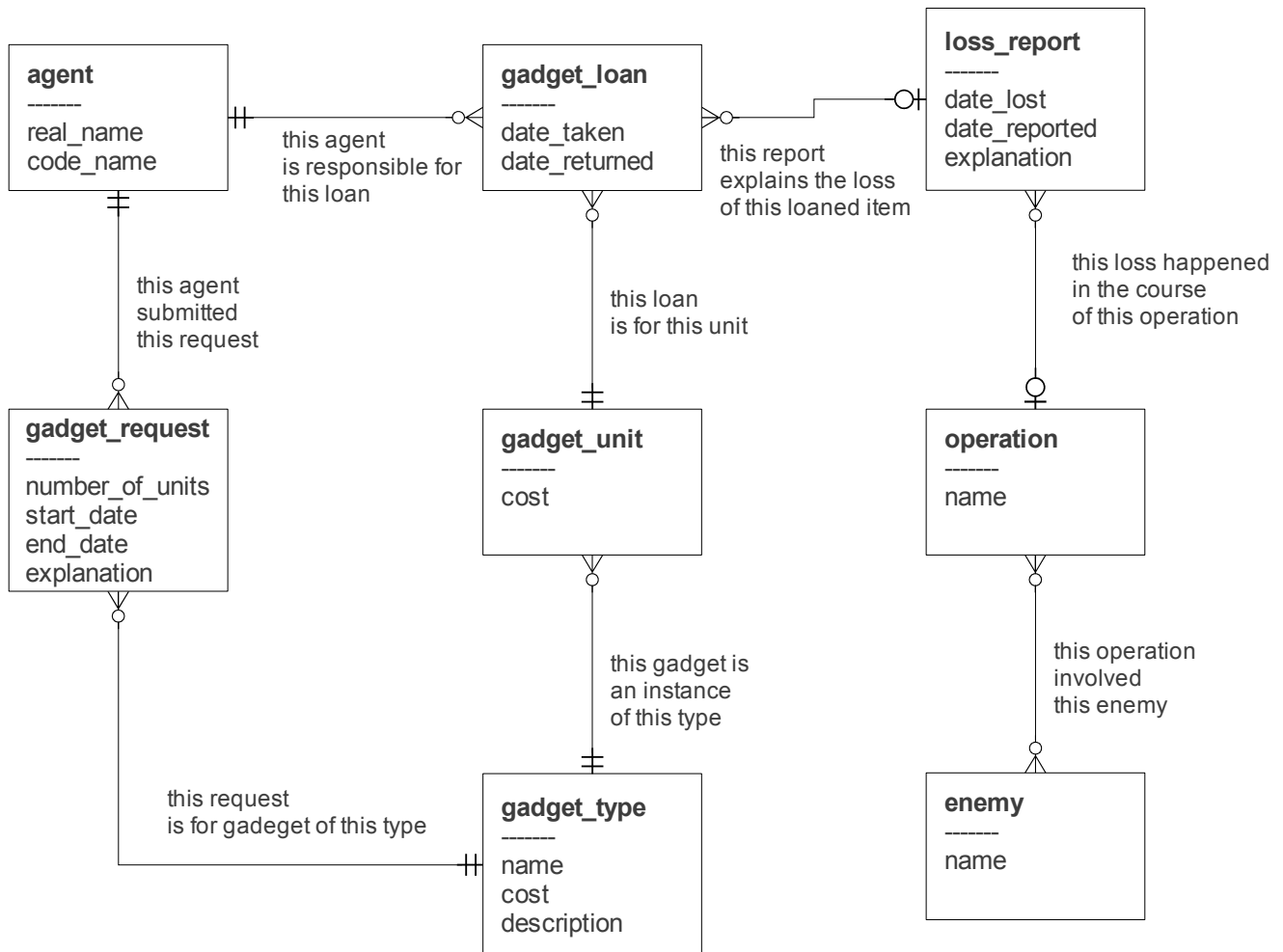


# INF1343, Winter 2012, Answers to Week 4 Exercises

## Part 1

Here is one possible diagram.



Notes:

- Since we may give multiple units of essentially the same gadget, it is essential that we distinguish between units and types that they instantiate. The agent gets specific units of some gadget type and it is specific units that get lost and must be accounted for. On the other hand, when an agent files a request, they are asking for a type.
- Since agents have gadgets in their possession for a while and then return them, we can represent this as a loan. Note that the same unit can be loaned multiple times.
- The loss report is best linked with a loan rather than the gadget itself. This way we would know who had the unit in their possession when it was lost.

- I am allowing one loss report to cover multiple loans. This way the agent won't have to submit multiple reports when different gadgets are lost at the same time. If we required a separate report for each gadget, though, then we could consider merging `loss_report` and `gadget_loan`. (In other words, we would treat a loss as just a special case of a loan.)
- The loan is related to a loss report optionally, since some units have not been lost. Loss report is related to an operation optionally since a gadget might be lost outside an operation. On the other hand, a loan *must* be linked with an agent and a unit, a unit *must* be linked with a type, and a request *must* be linked with a unit and a type.

## **Part 2**

The implementation and insertion would depend on your diagram. If you didn't manage to do part 1 on your own, please do part 2 again now using the diagram above as a guide.