

Chapter 16

UML Class Diagrams

Larman, C. “Applying UML and
Patterns”. 3rd Ed.
Ed. Prentice-Hall: 2005.

Fig. 16.1

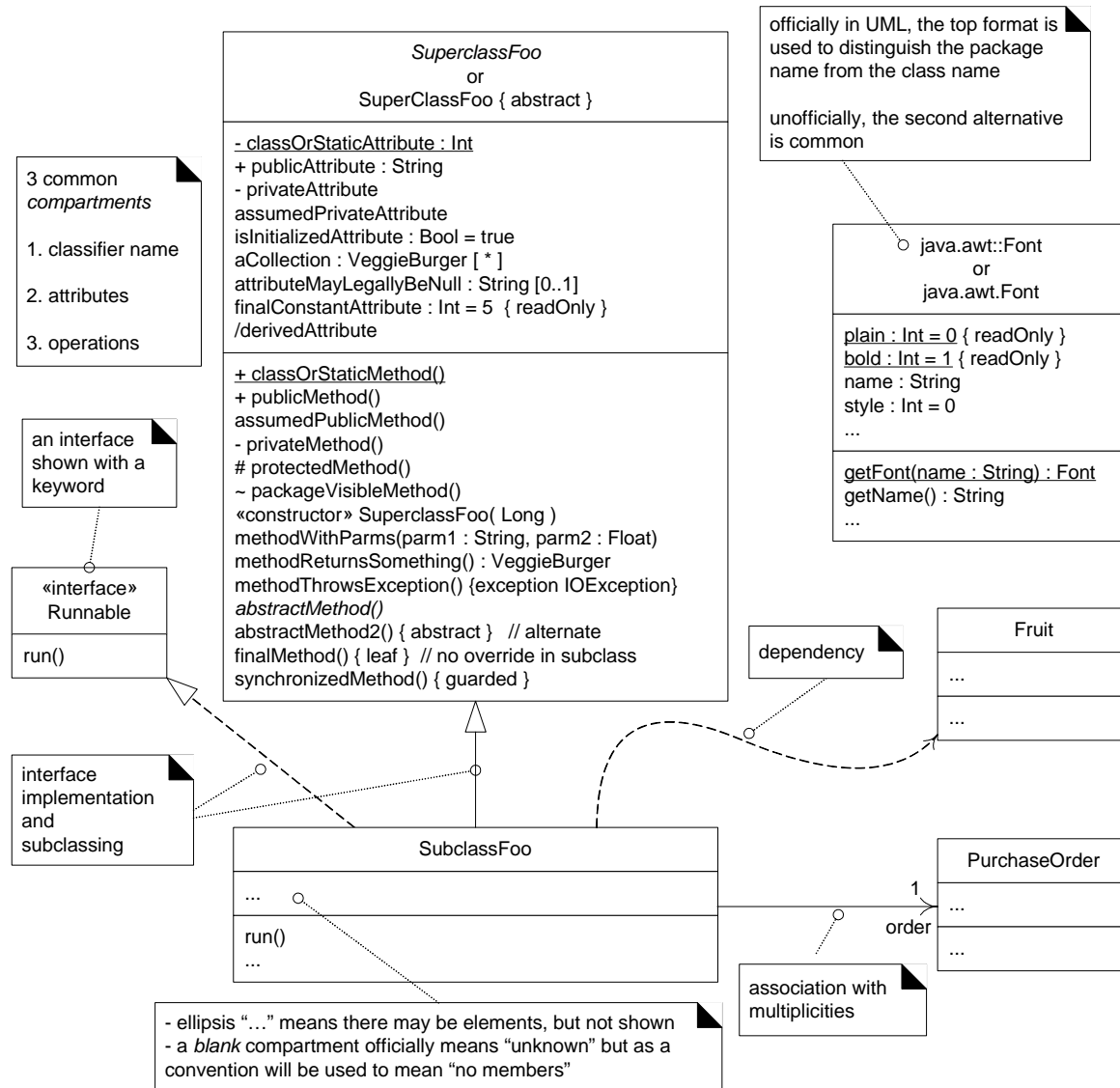


Fig. 16.2

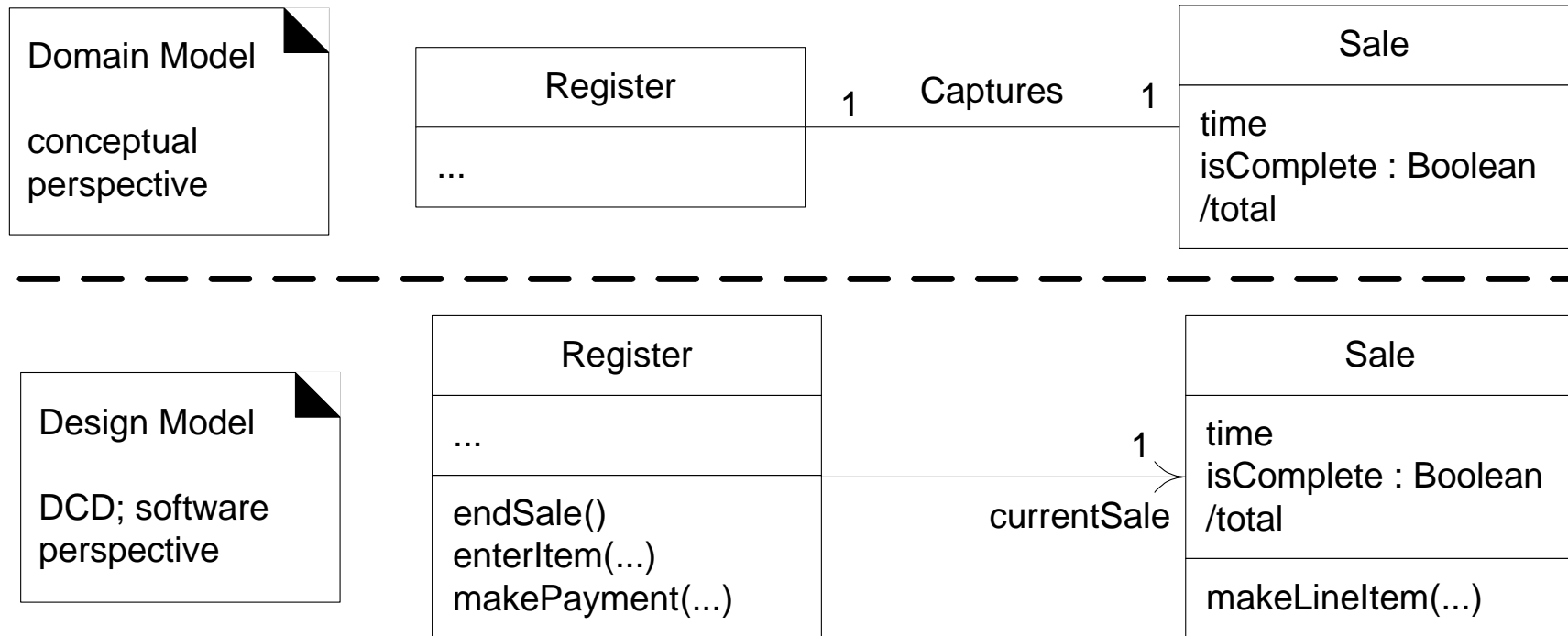


Fig. 16.3

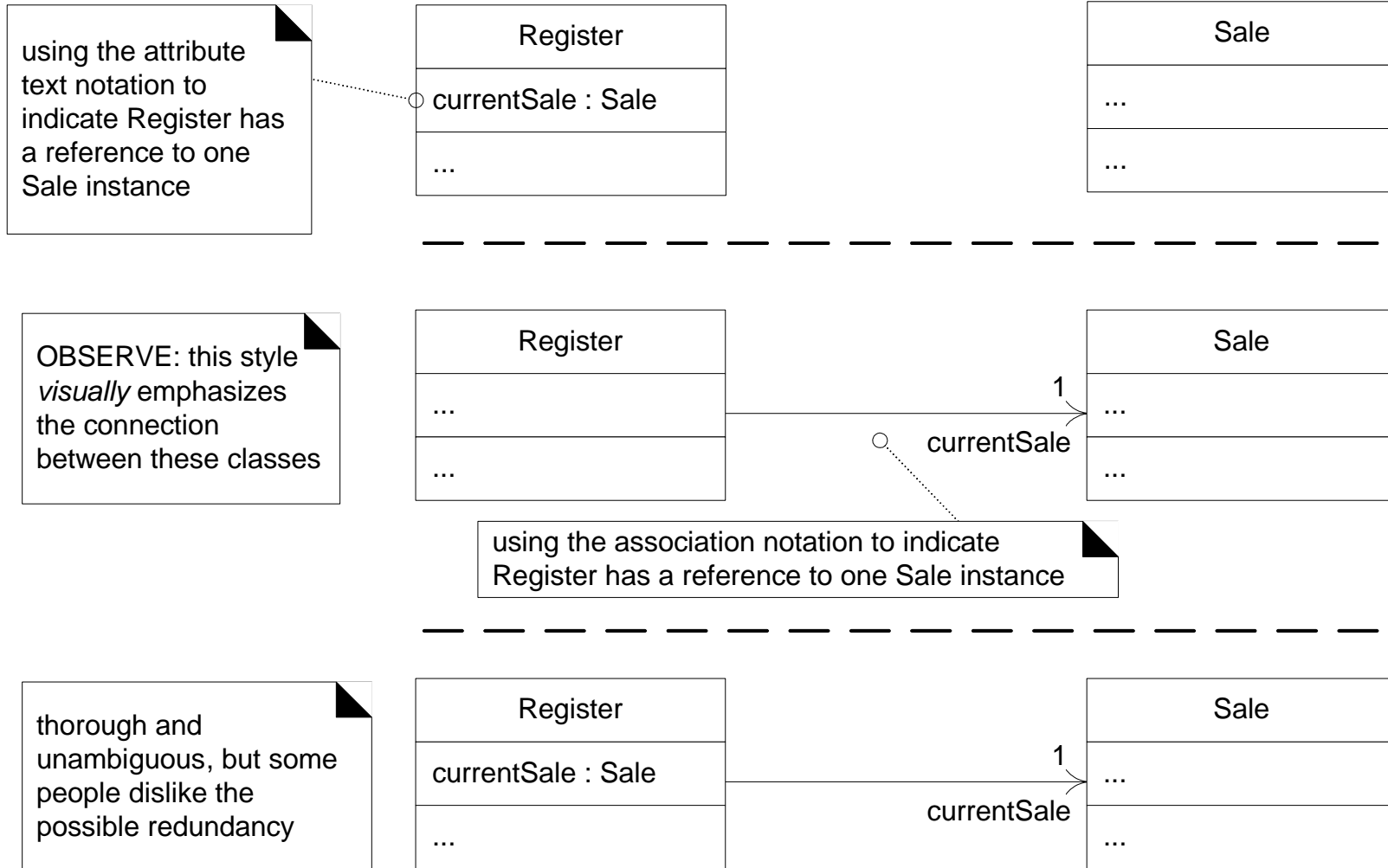
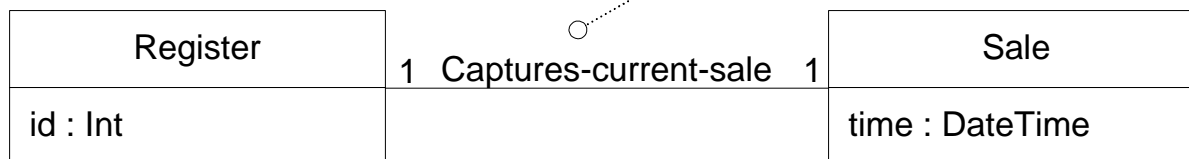


Fig. 16.4

the association *name*, common when drawing a domain model, is often excluded (though still legal) when using class diagrams for a software perspective in a DCD

UP Domain Model
conceptual perspective



UP Design Model
DCD
software perspective

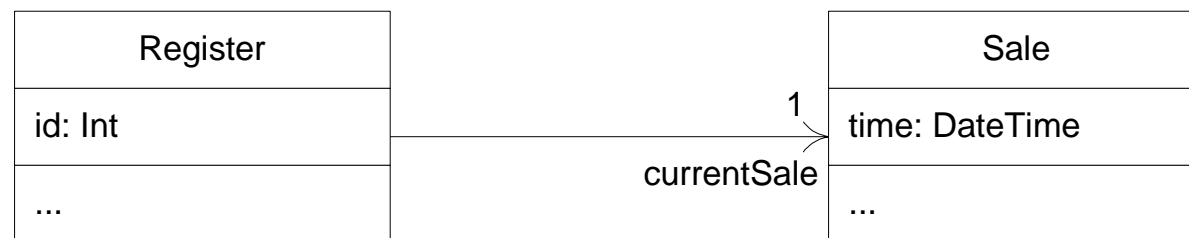


Fig. 16.5

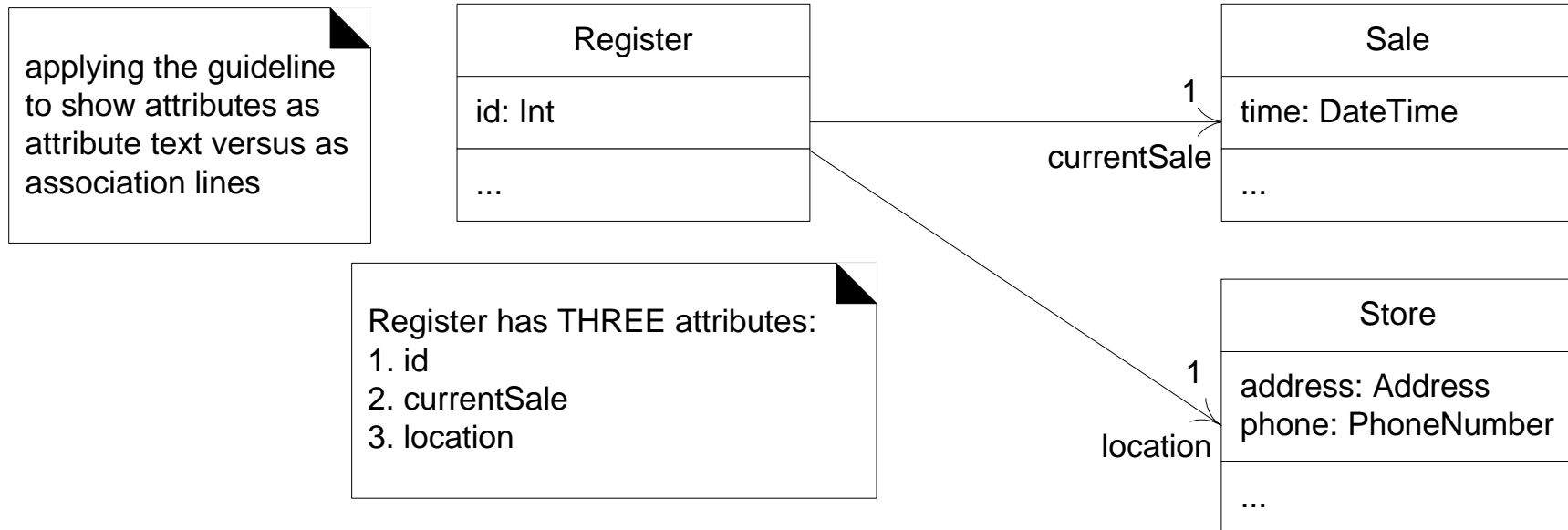
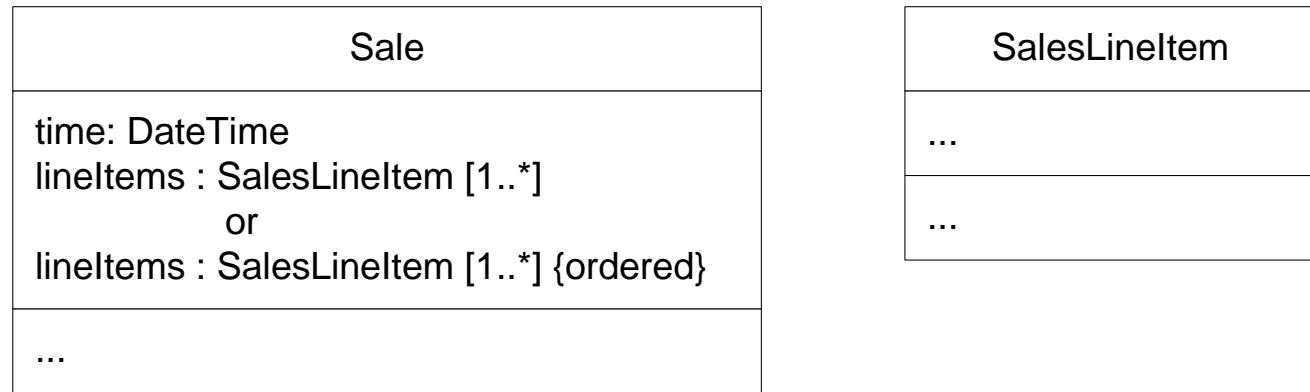
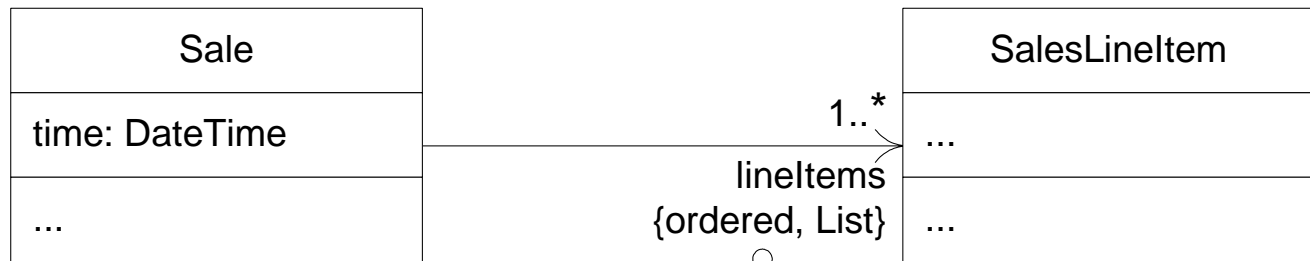


Fig. 16.6



Two ways to show a collection attribute



notice that an association end can optionally also have a property string such as {ordered, List}

Fig. 16.7

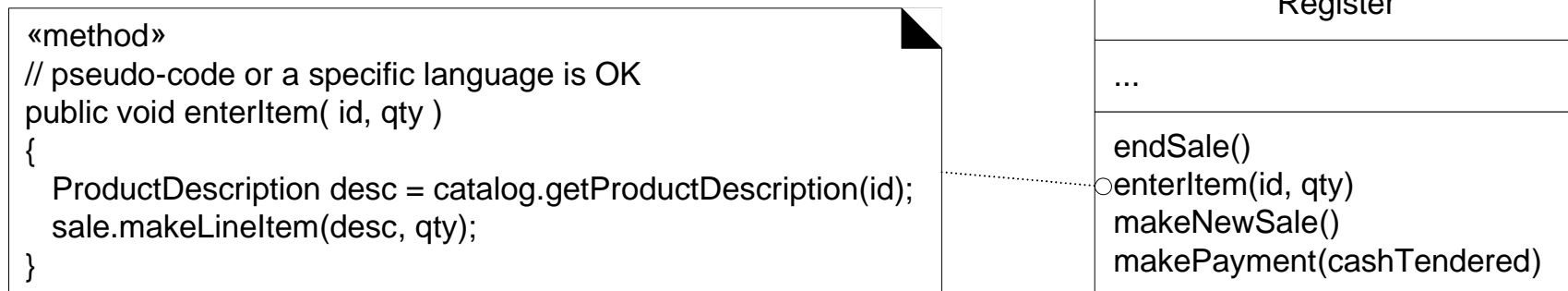


Fig. 16.8

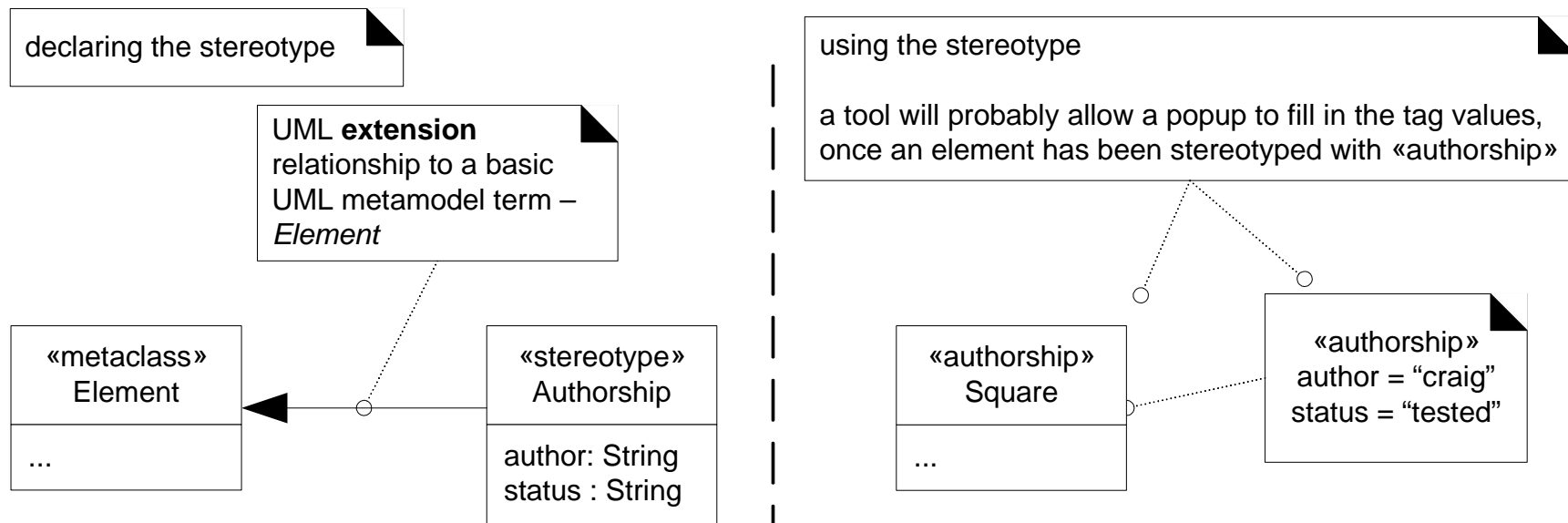


Fig. 16.9

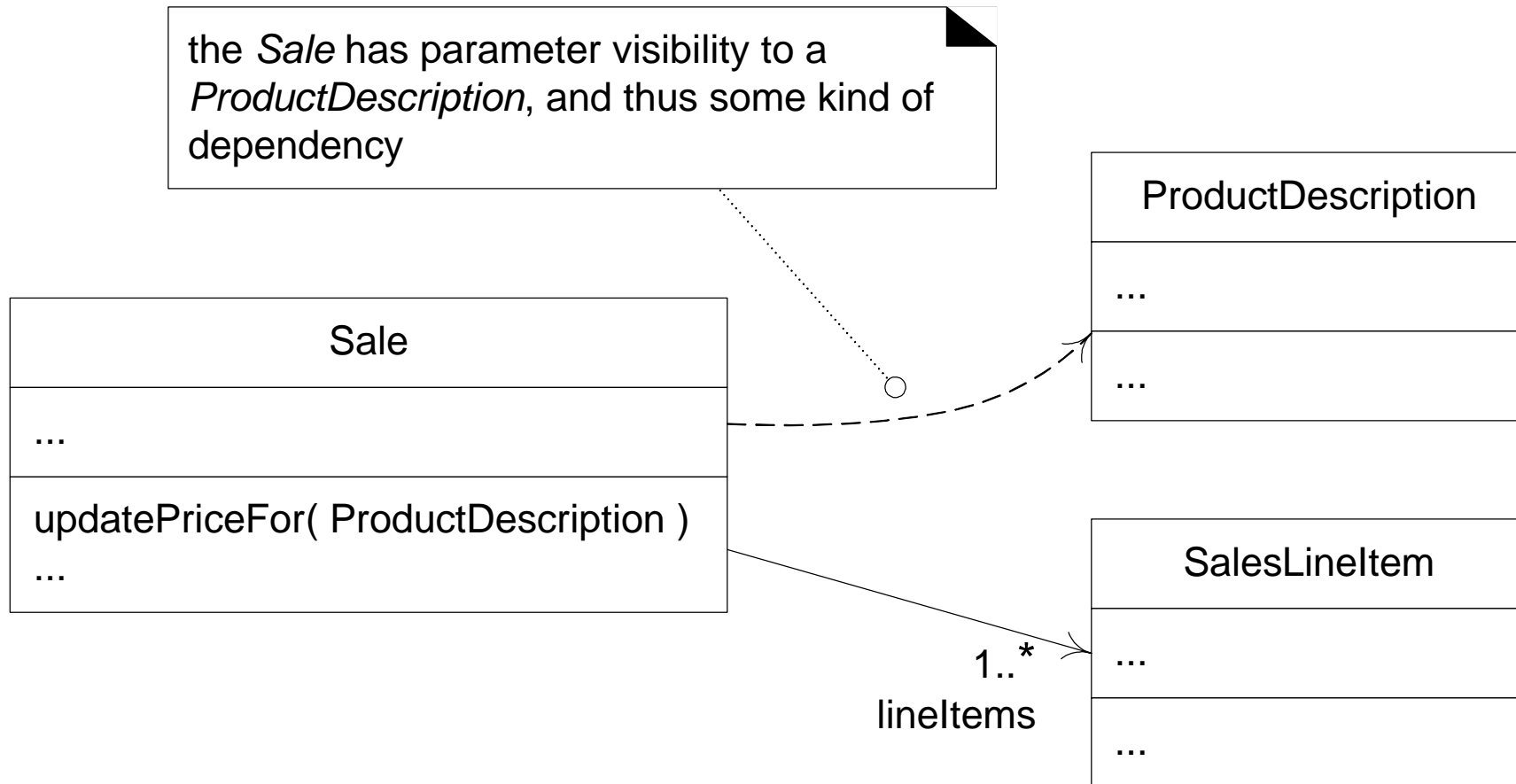


Fig. 16.10

the *doX* method invokes the *runFinalization* static method, and thus has a dependency on the *System* class

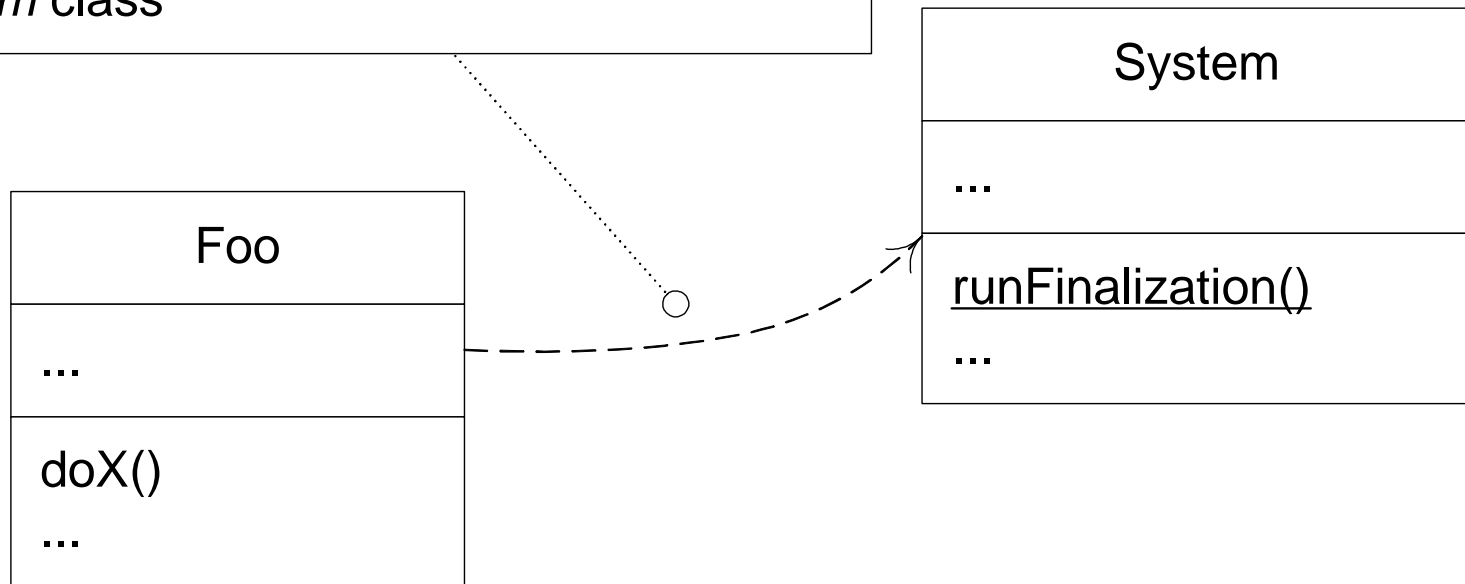


Fig. 16.11

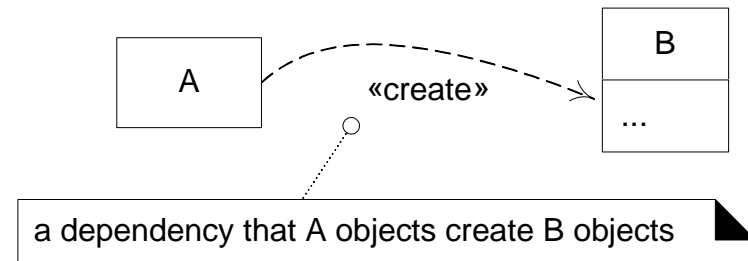
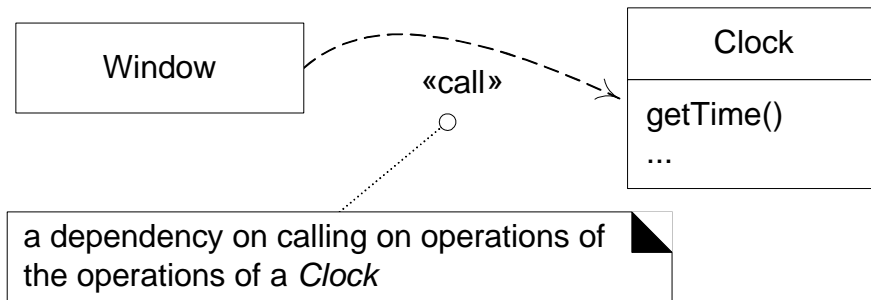


Fig. 16.12

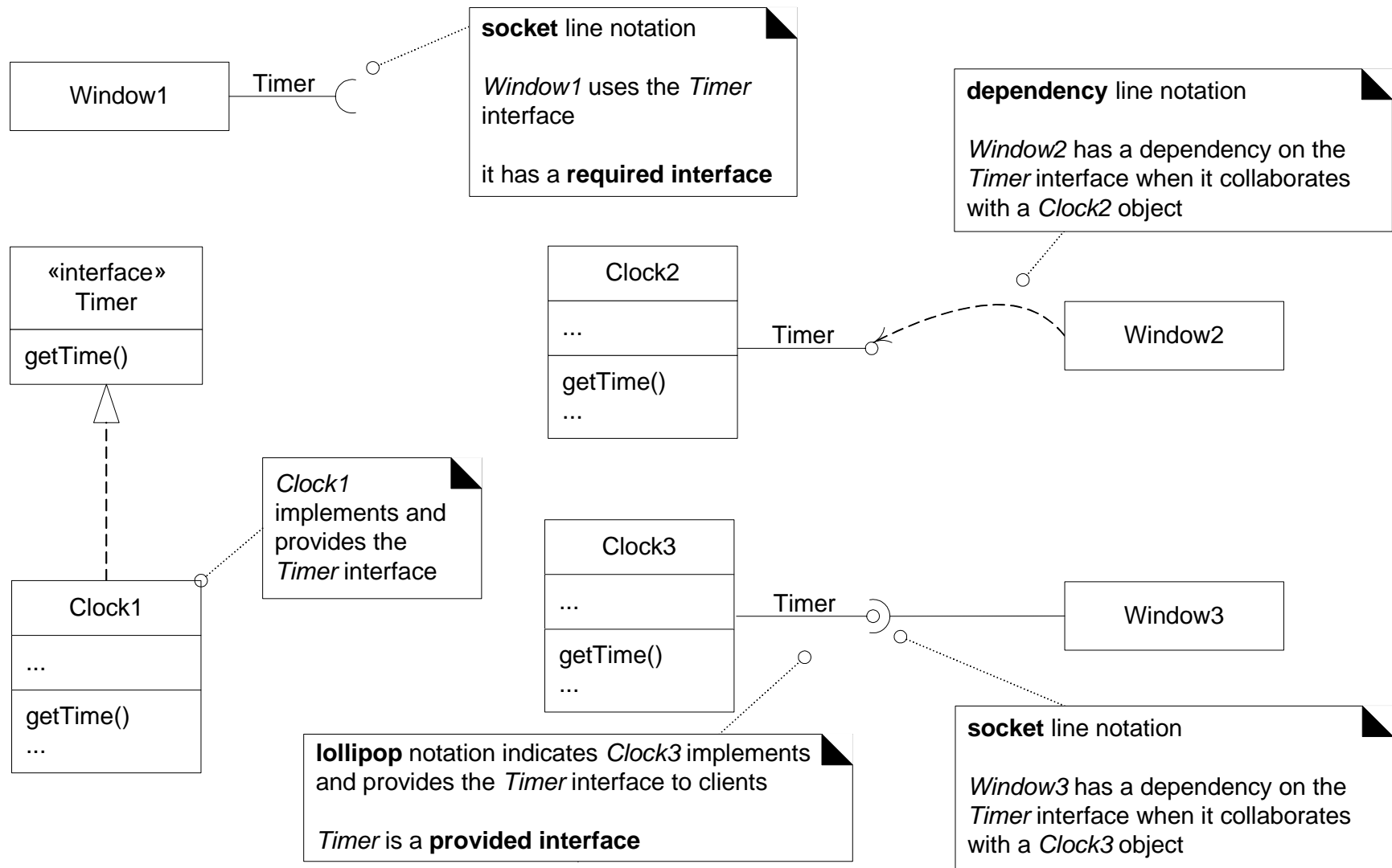
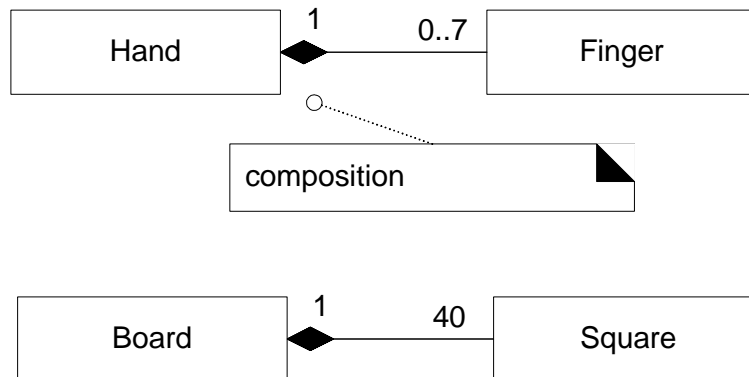


Fig. 16.13



composition means

- a part instance (*Square*) can only be part of one composite (*Board*) at a time

- the composite has sole responsibility for management of its parts, especially creation and deletion

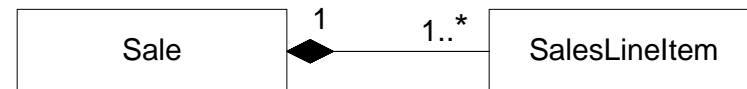
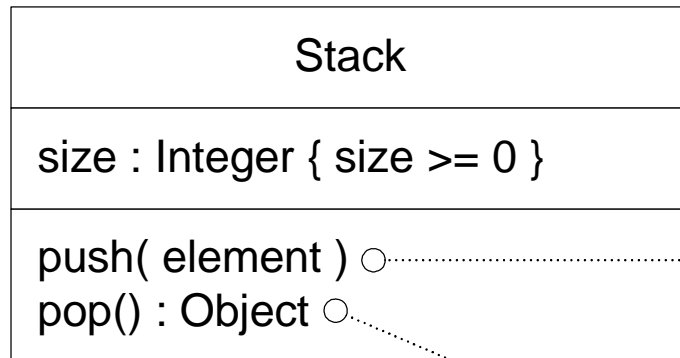


Fig. 16.14

three ways to show UML constraints



{ post condition: new size = old size + 1 }

```
{
post condition: new size = old size - 1
}
```

Fig. 16.15

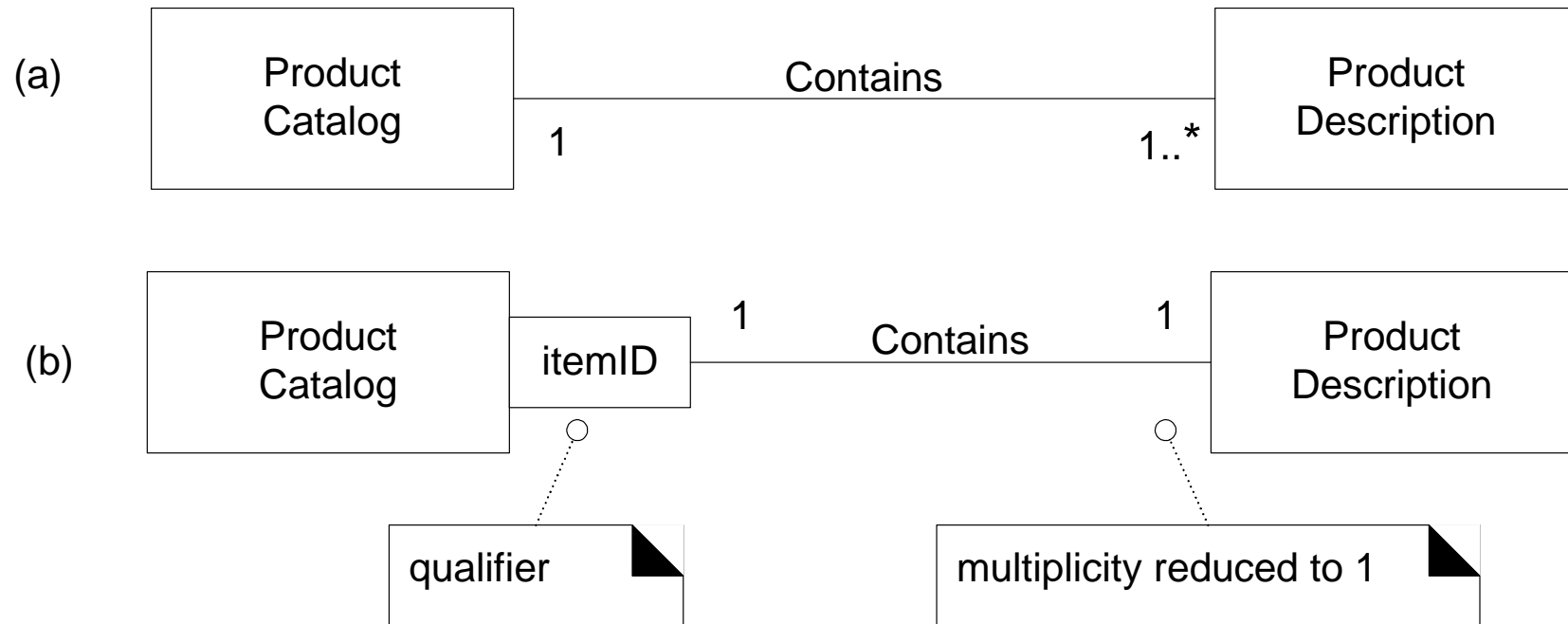


Fig. 16.16

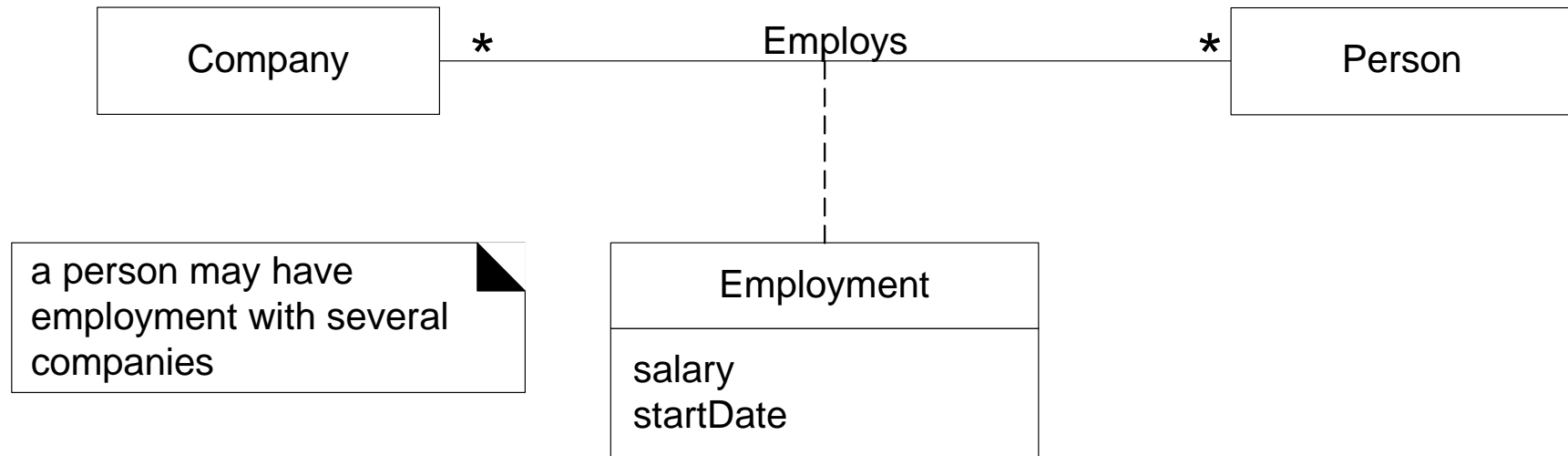


Fig. 16.17

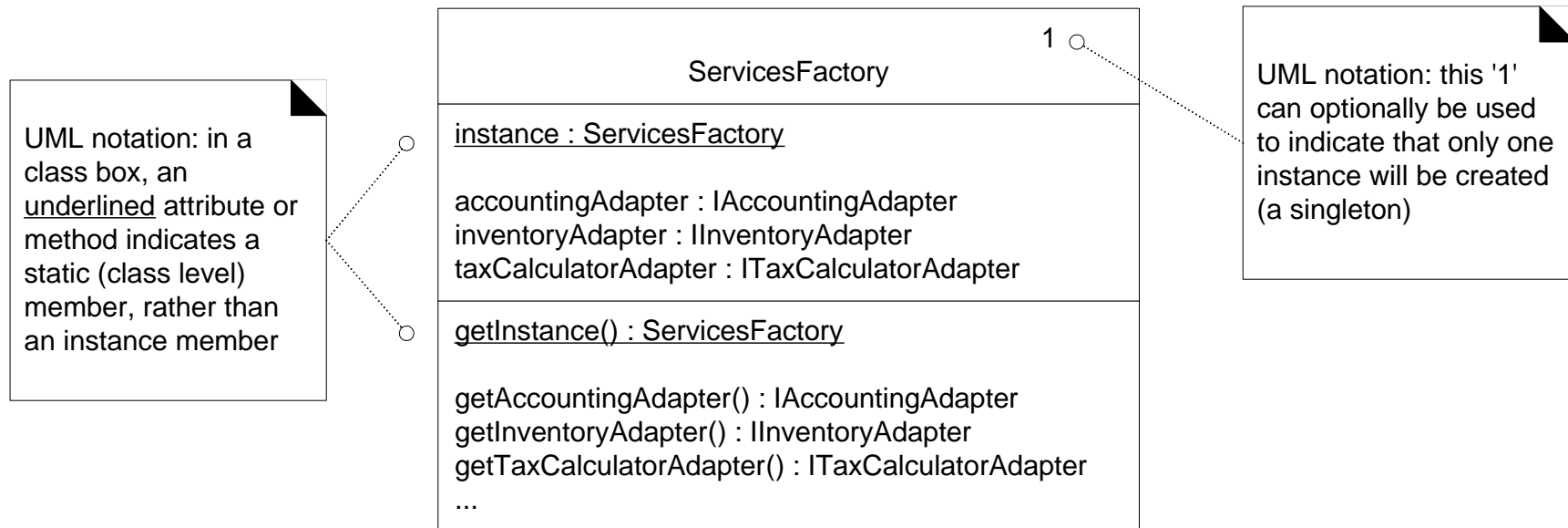


Fig. 16.18

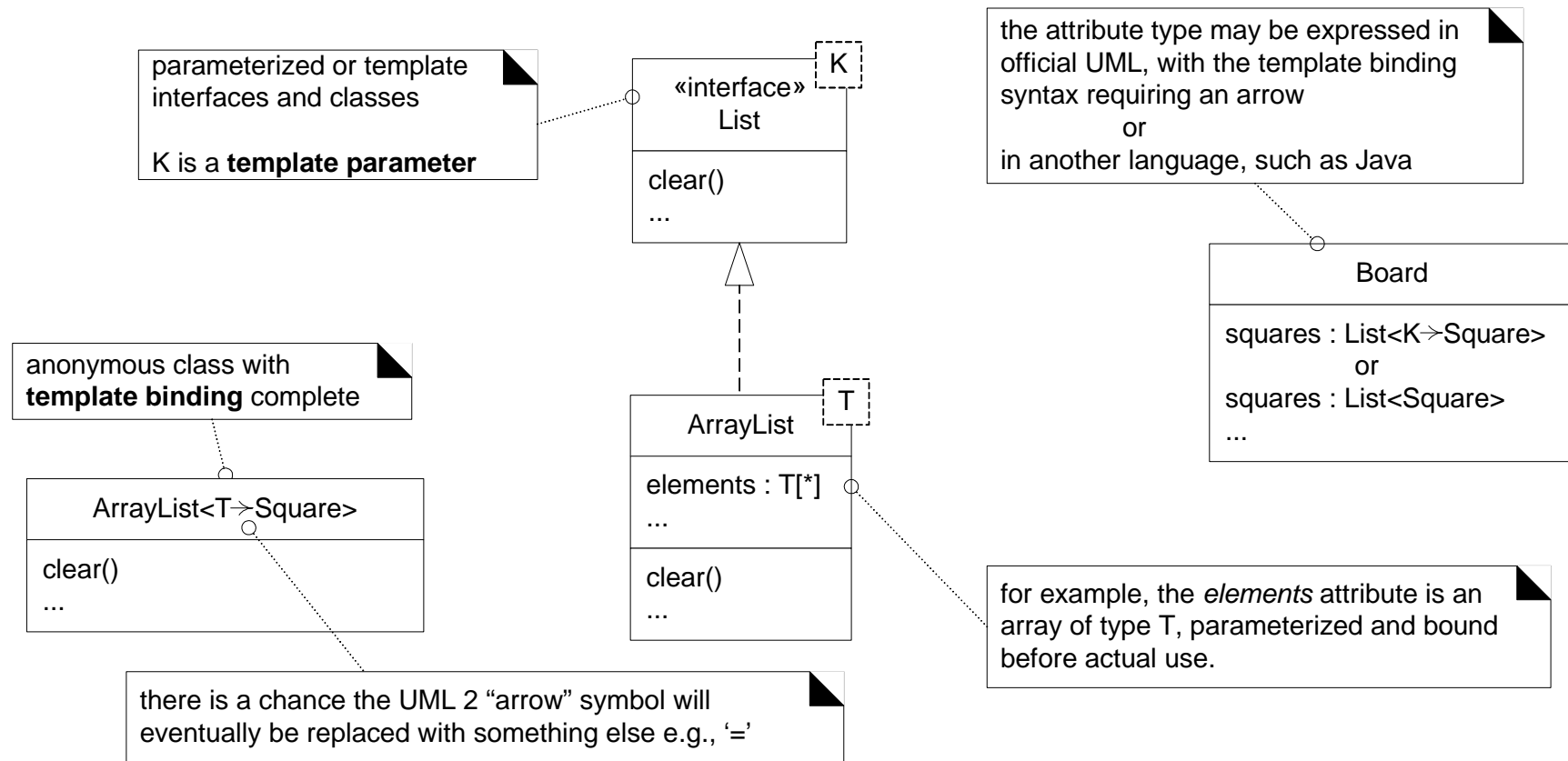


Fig. 16.19

DataAccessObject
id : Int ...
doX() ...
exceptions thrown DatabaseException IOException
responsibilities serialize and write objects read and deserialize objects ...

Fig. 16.20

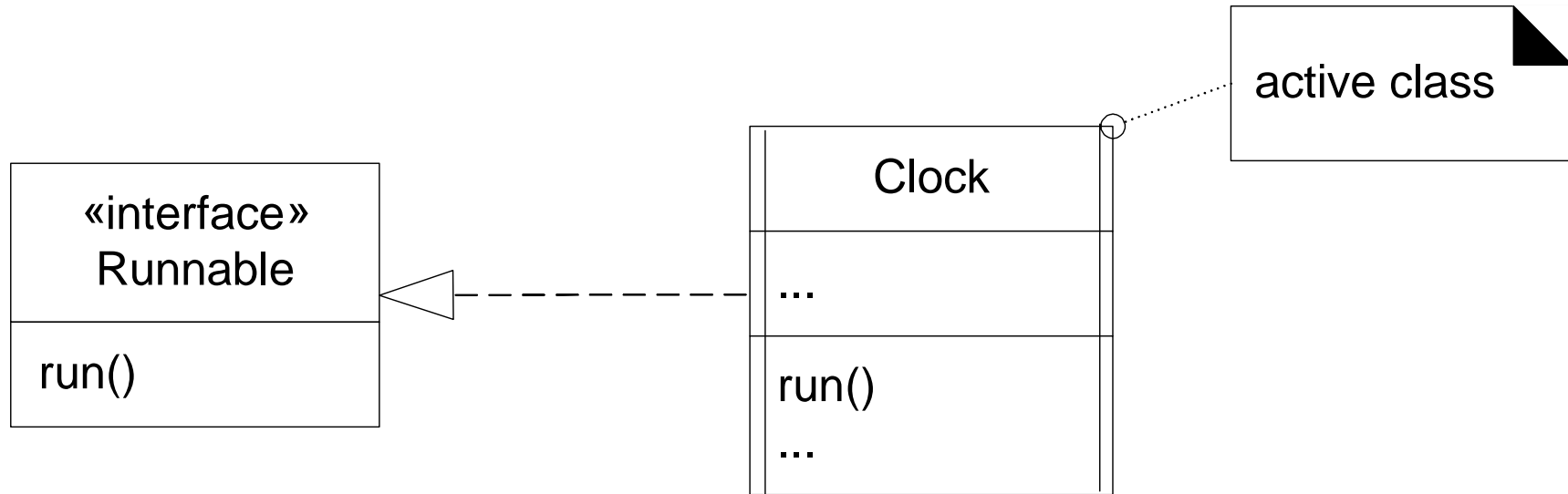


Fig. 16.21

