ERP Course: Analysis Patterns Accountability, Inventory, and Accounting
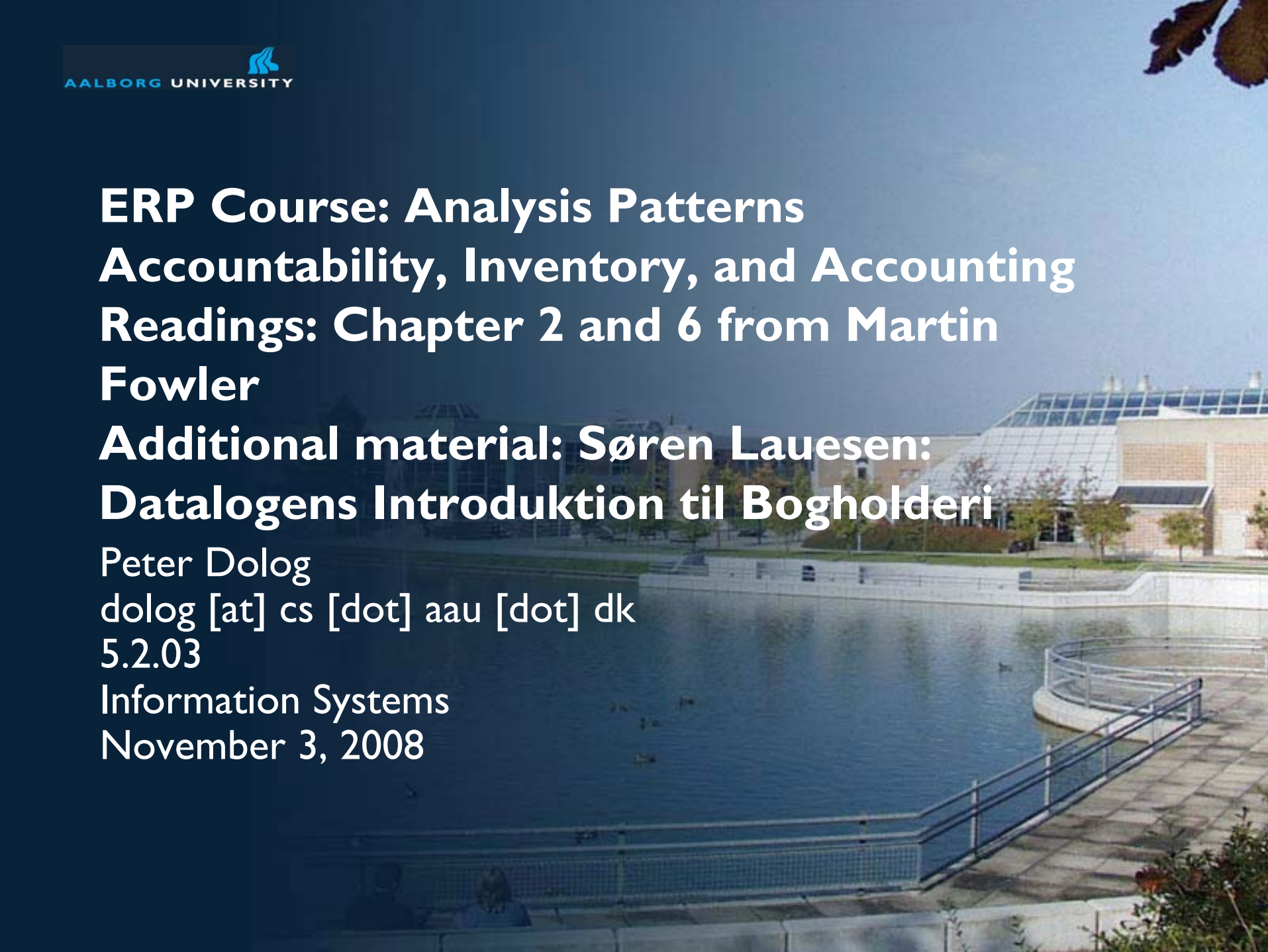# Readings: Chapter 2 and 6 from Martin Fowler
Additional material: Søren Lauesen: Datalogens Introduktion til Bogholderi

Peter Dolog
dolog [at] cs [dot] aau [dot] dk
5.2.03
Information Systems
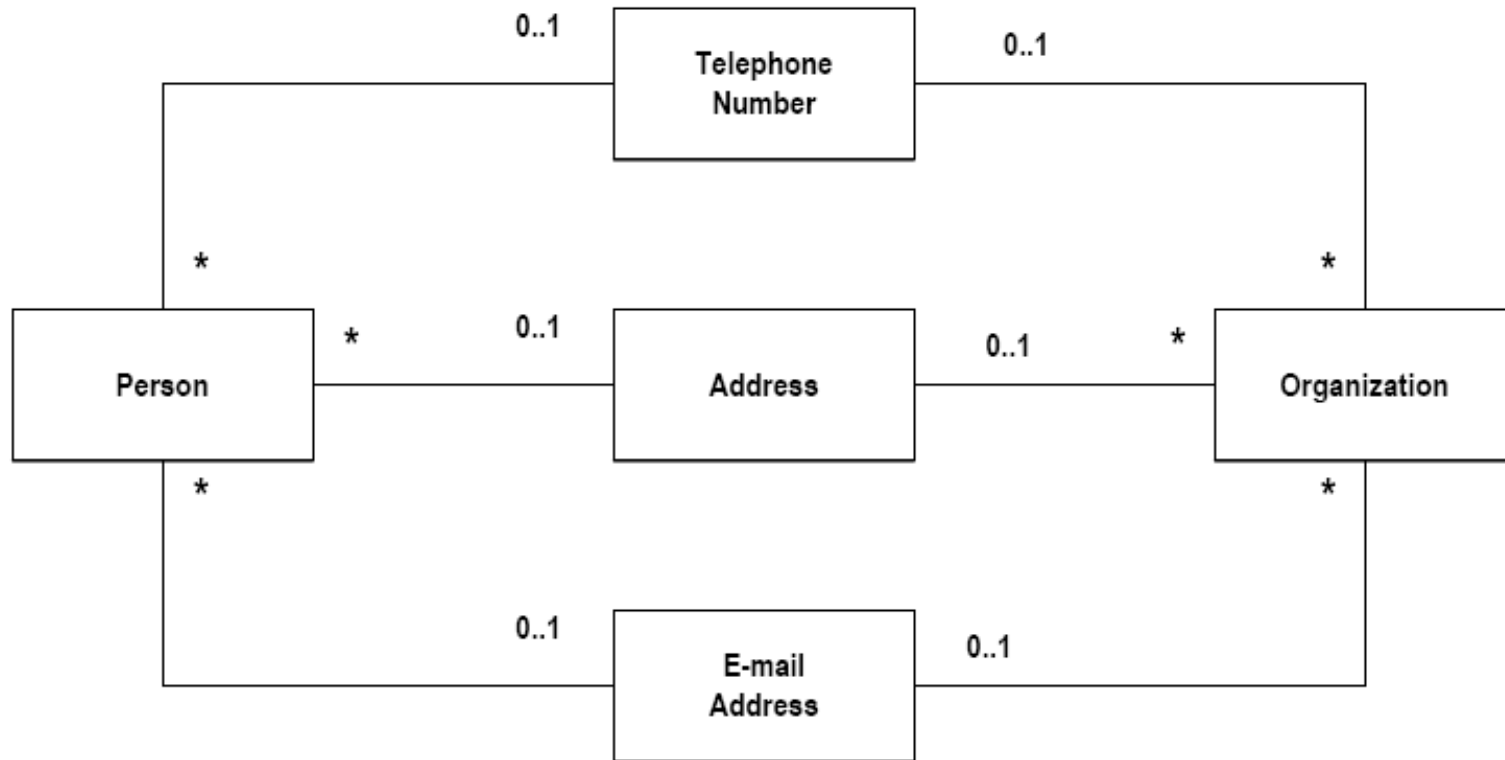November 3, 2008

Accountability

A relationship of responsibility between responsee and
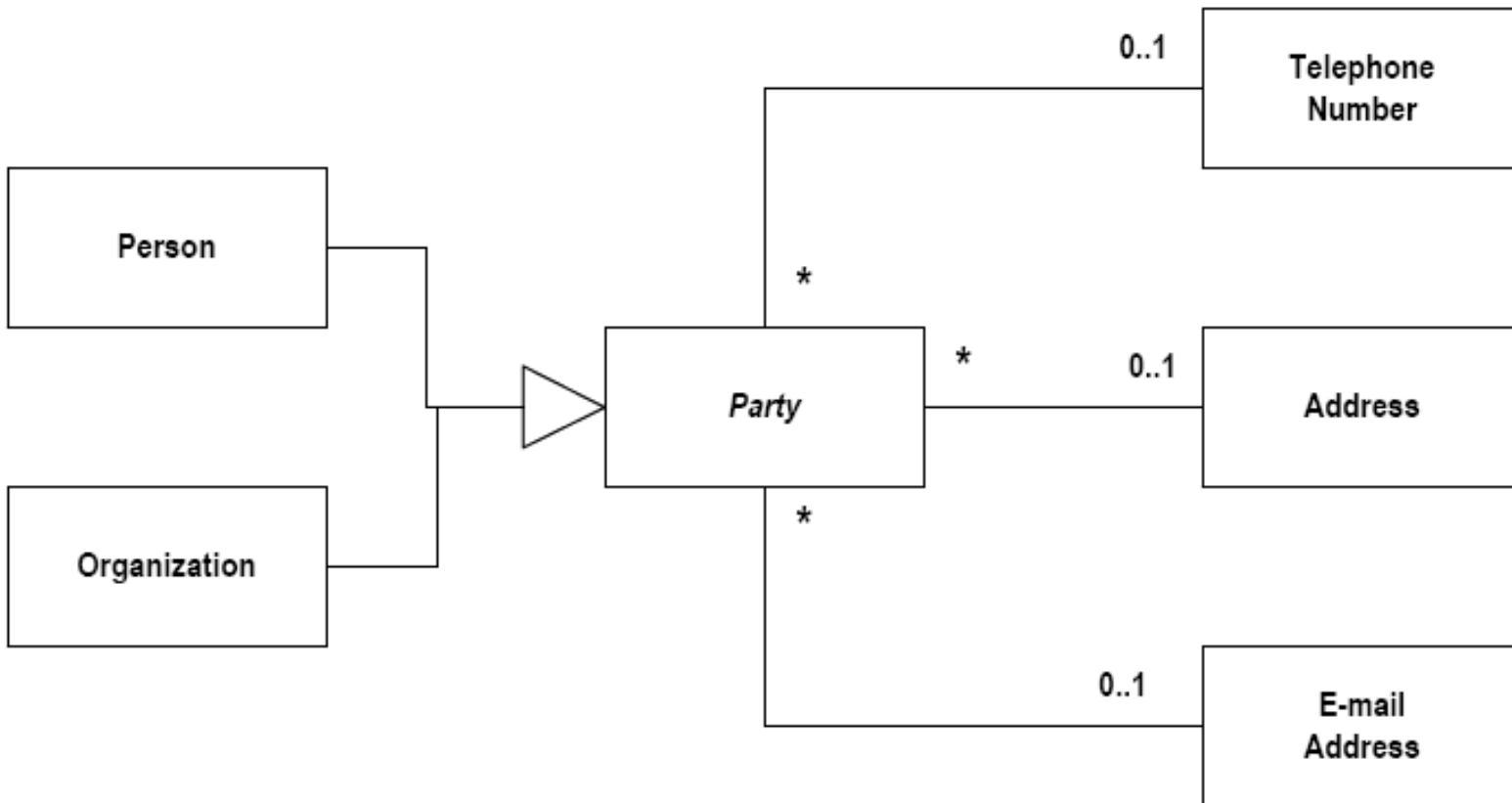 responsible
Organizational structures
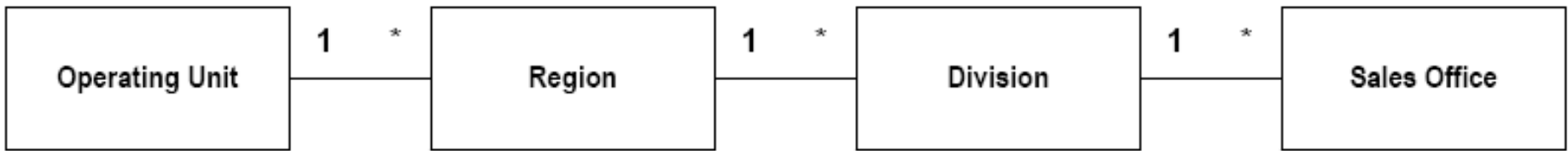Employments
Contracts

Address Book

Party

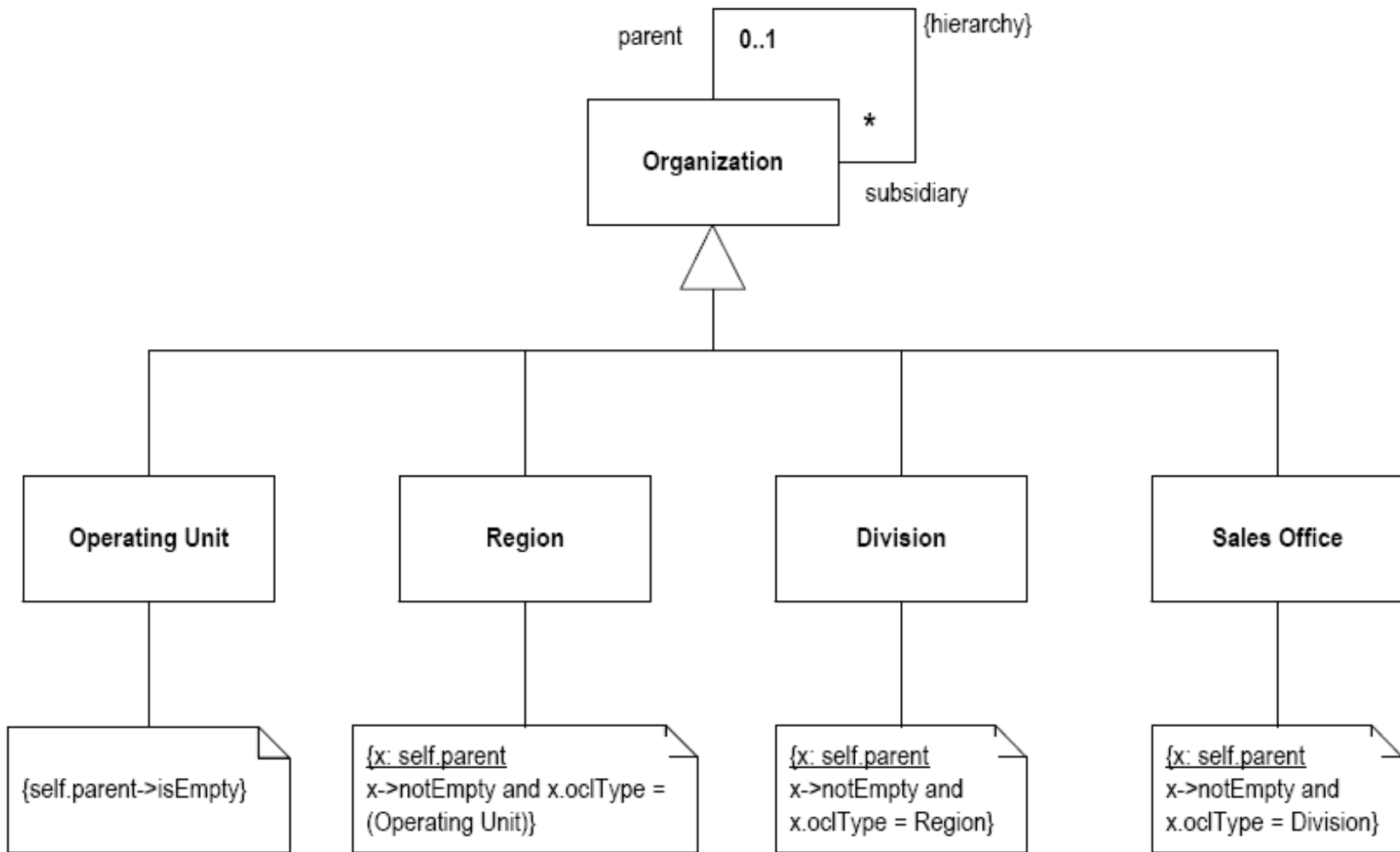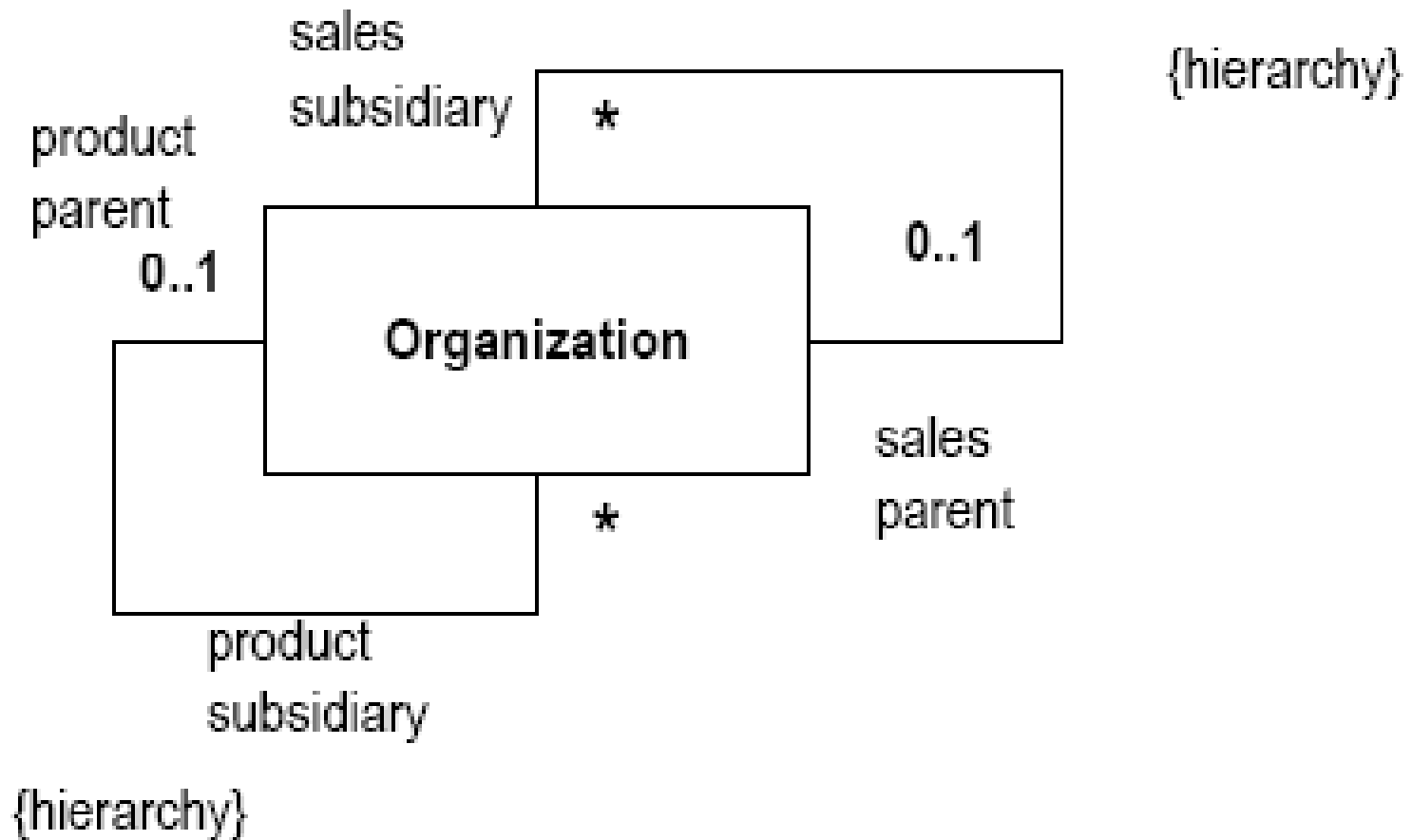# Organization Structure with Explicit Levels

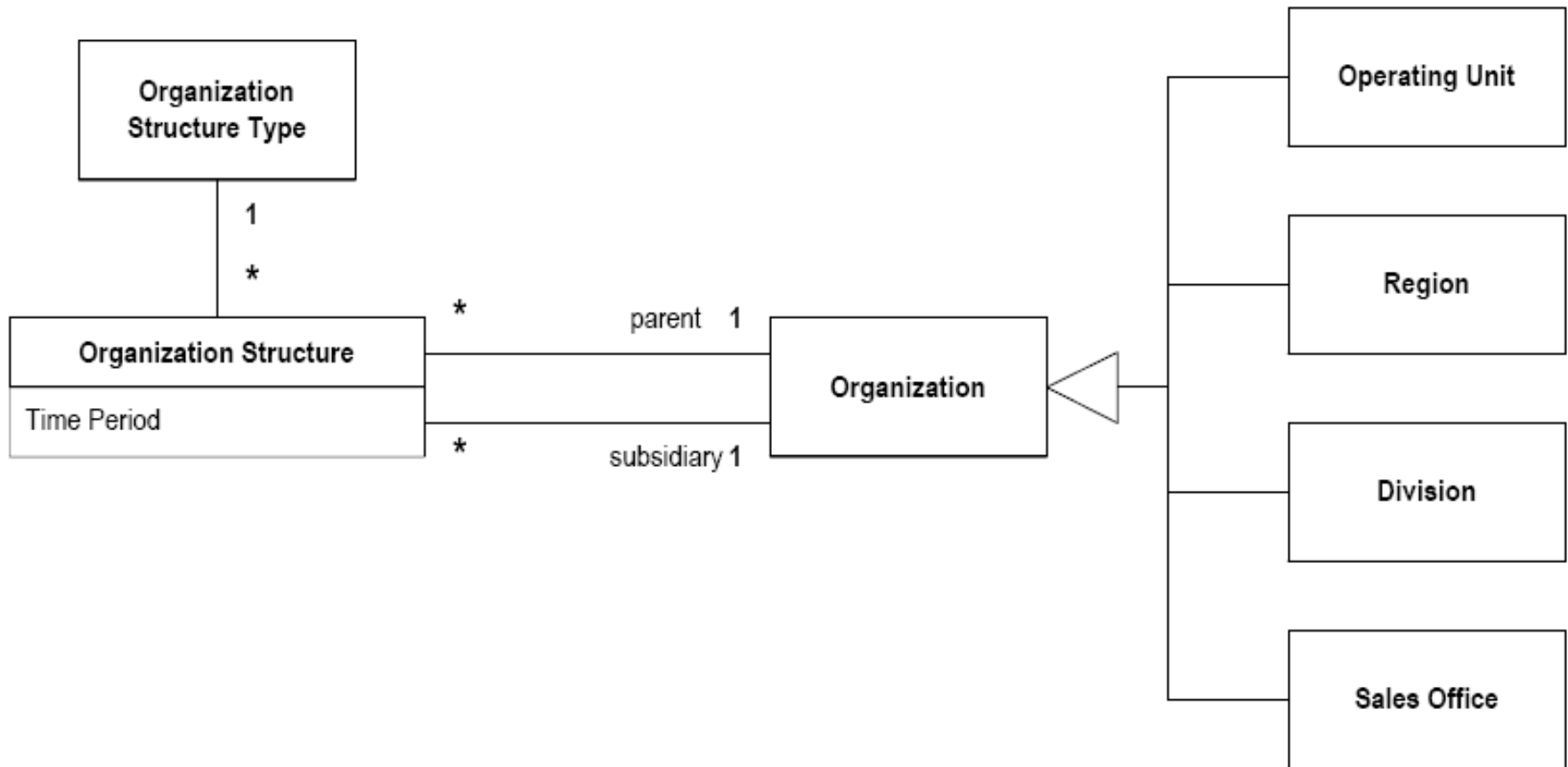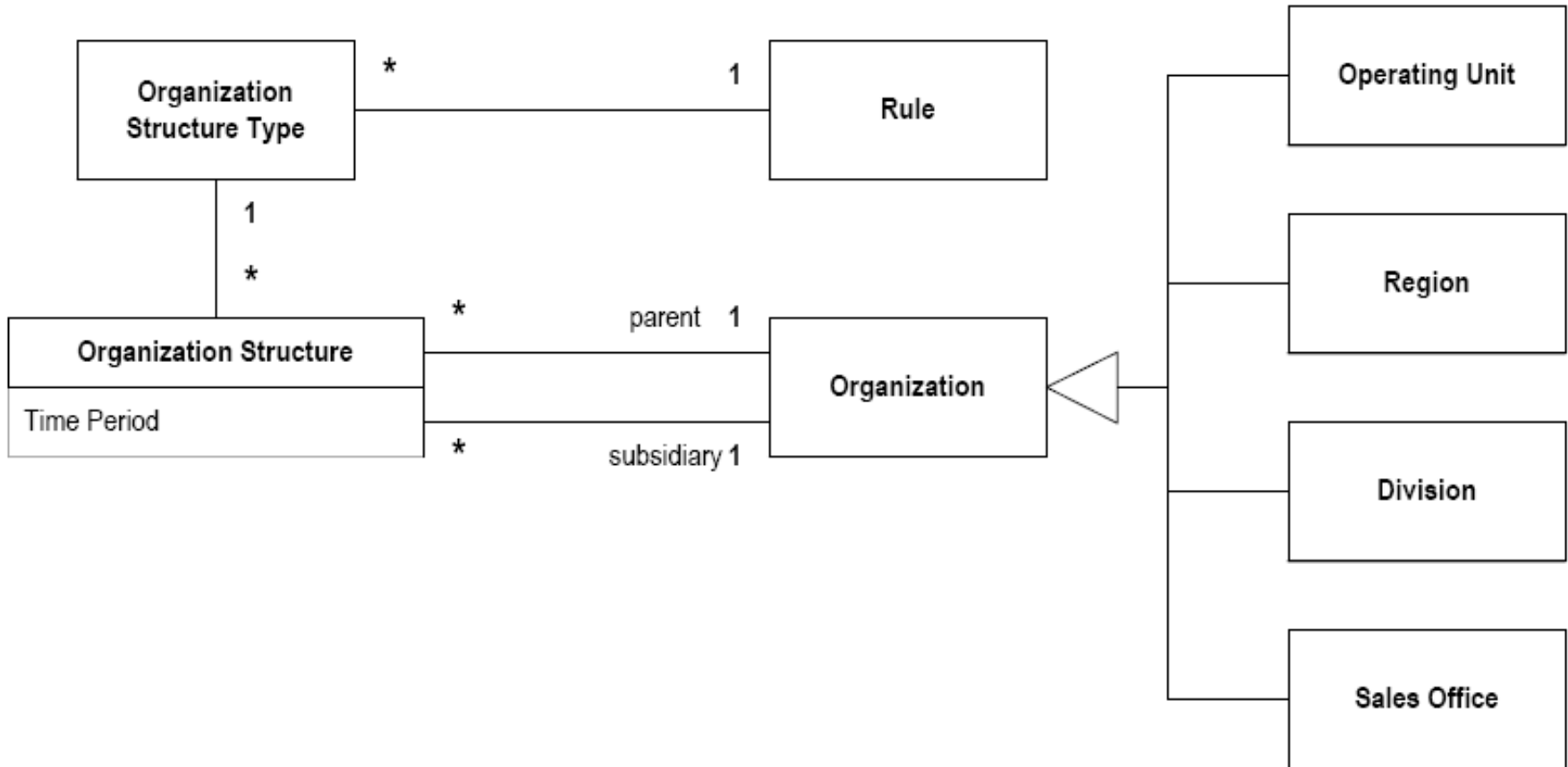| Operating Unit | 1 — * | Region | 1 — * | Division | 1 — * | Sales Office |

Organization Supertype

Two organizational hierarchies

Typed Relationships

Rules

Organization Structure Type * ——— 1 Rule

Organization Structure Type 1 / * Organization Structure | Time Period

Organization Structure * ——— parent 1 Organization

Organization Structure * ——— subsidiary 1 Organization

Organization ◁——— Operating Unit, Region, Division, Sales Office
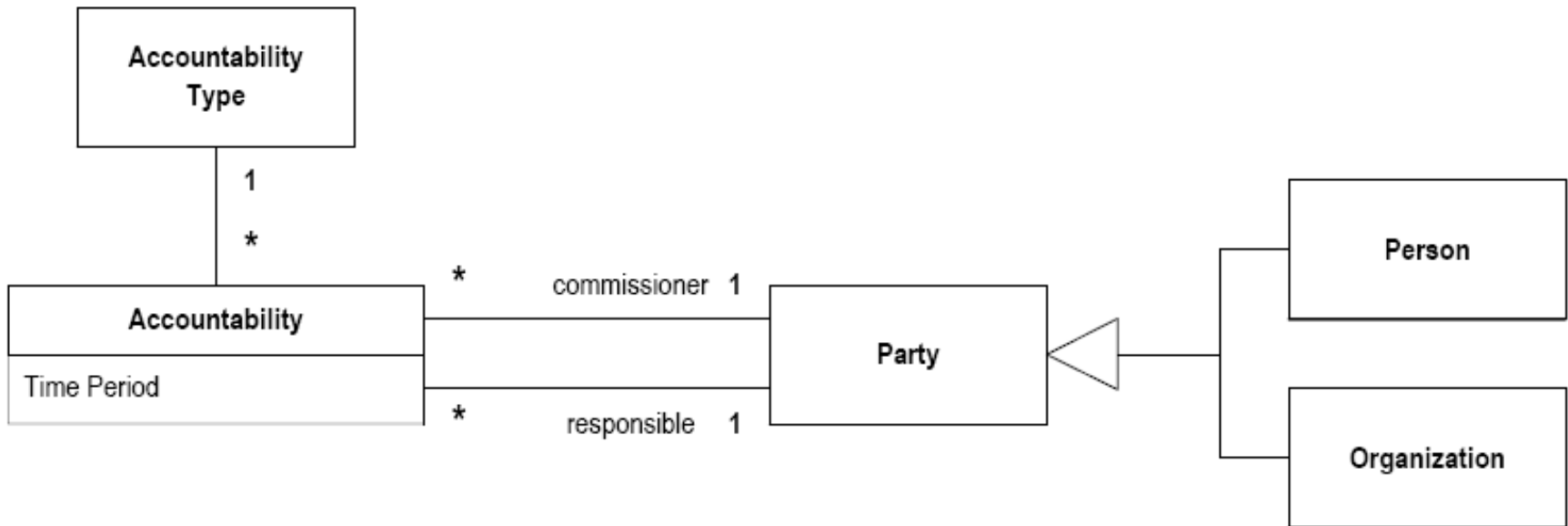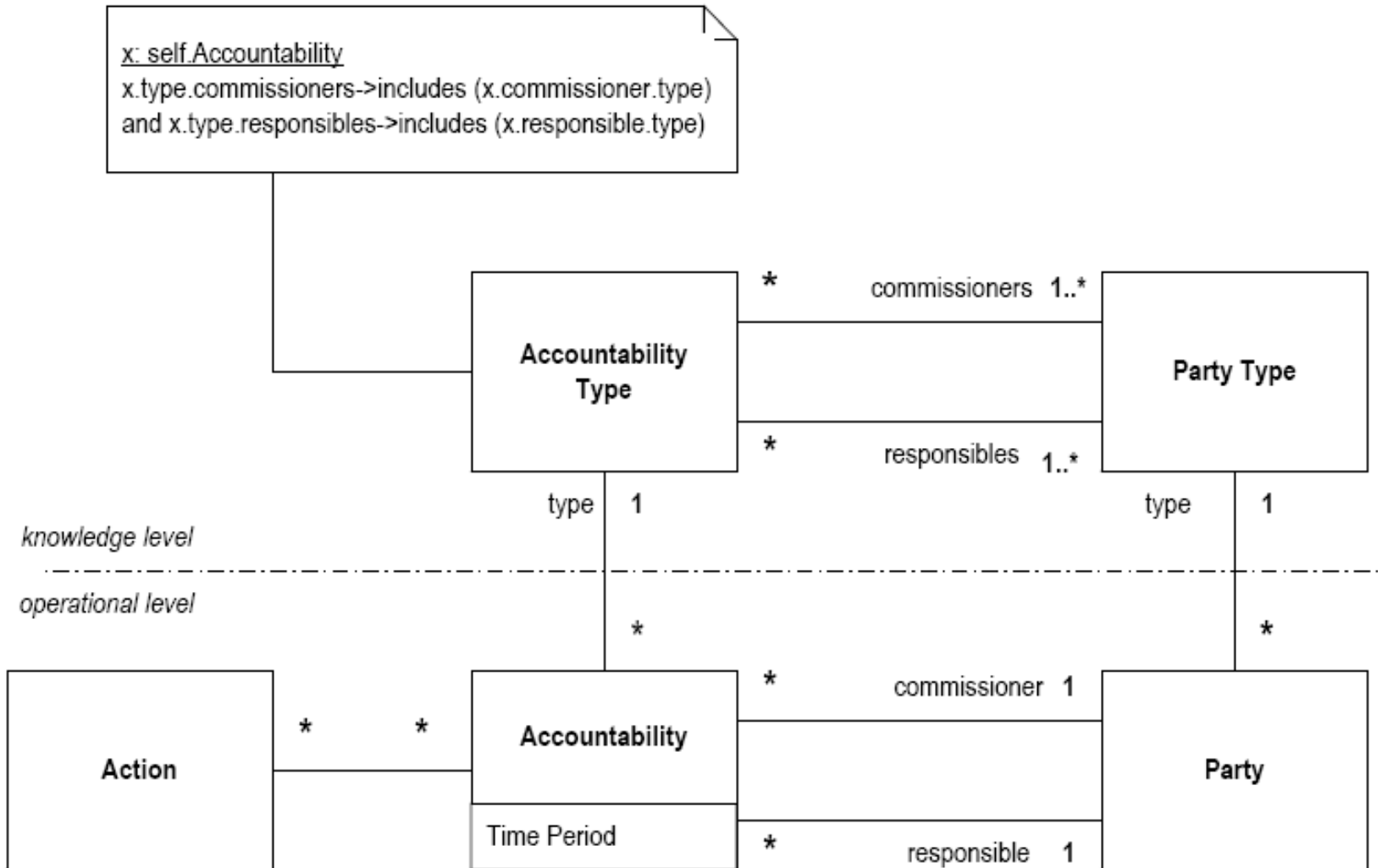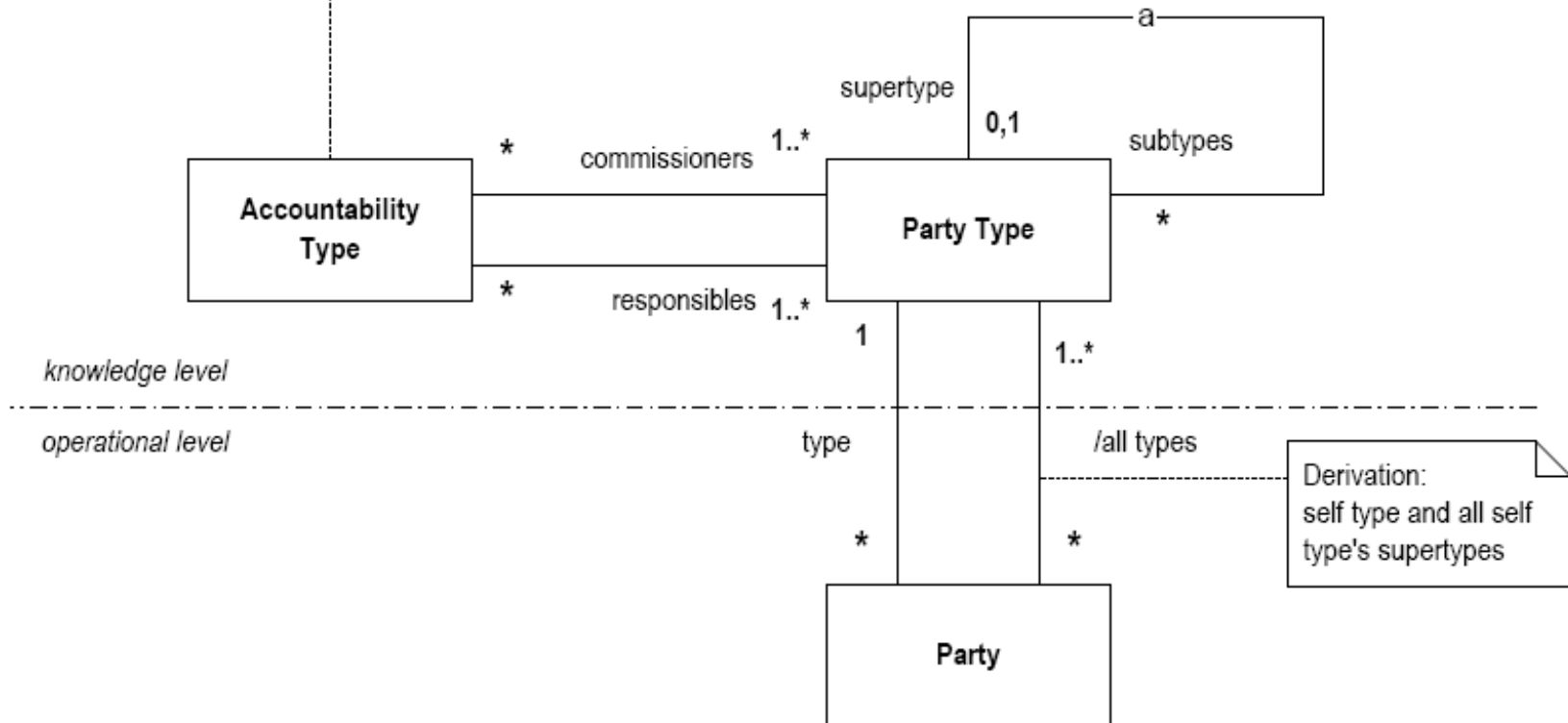
Accountability

Knowledge and operational levels

Party Type Generalizations
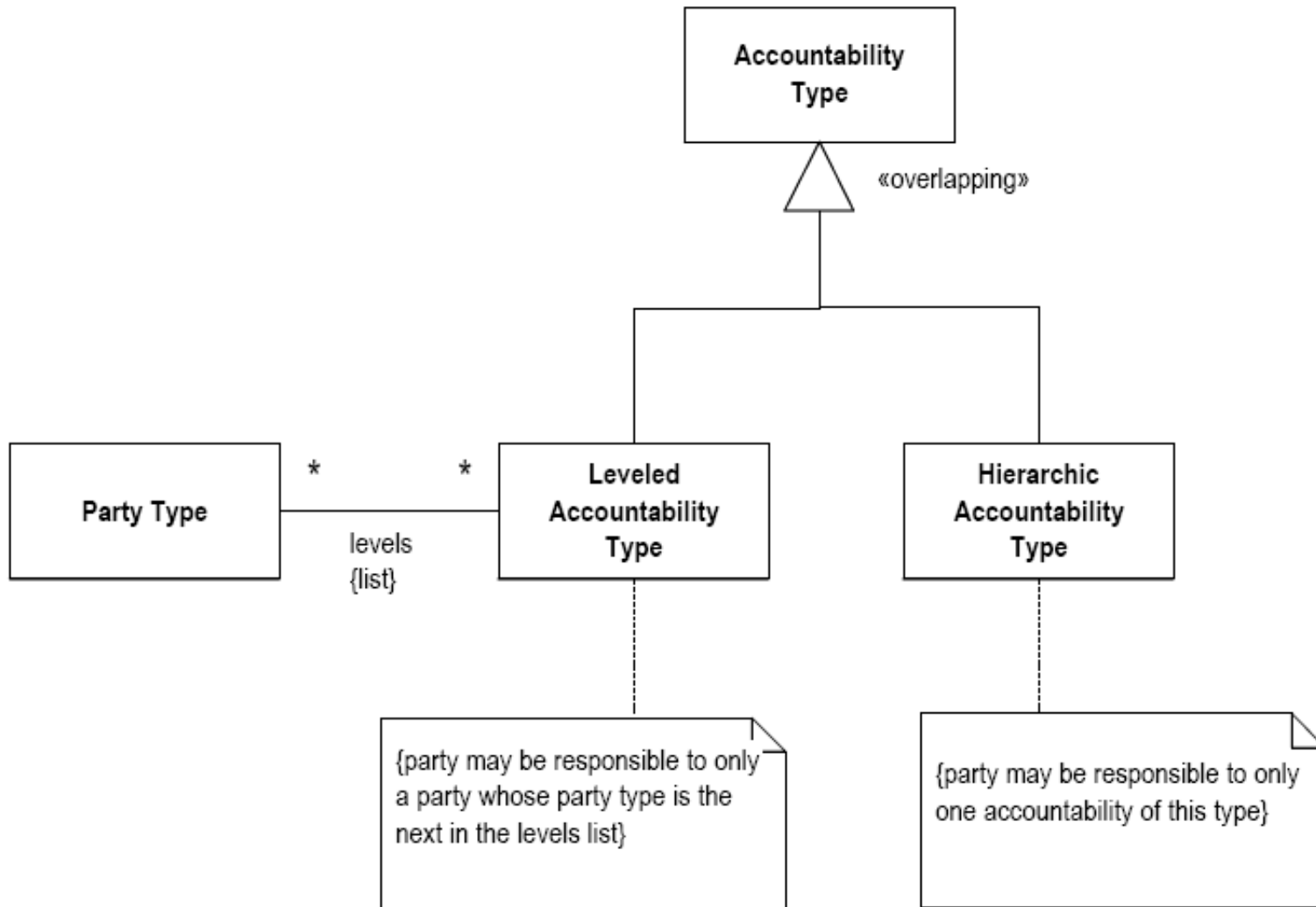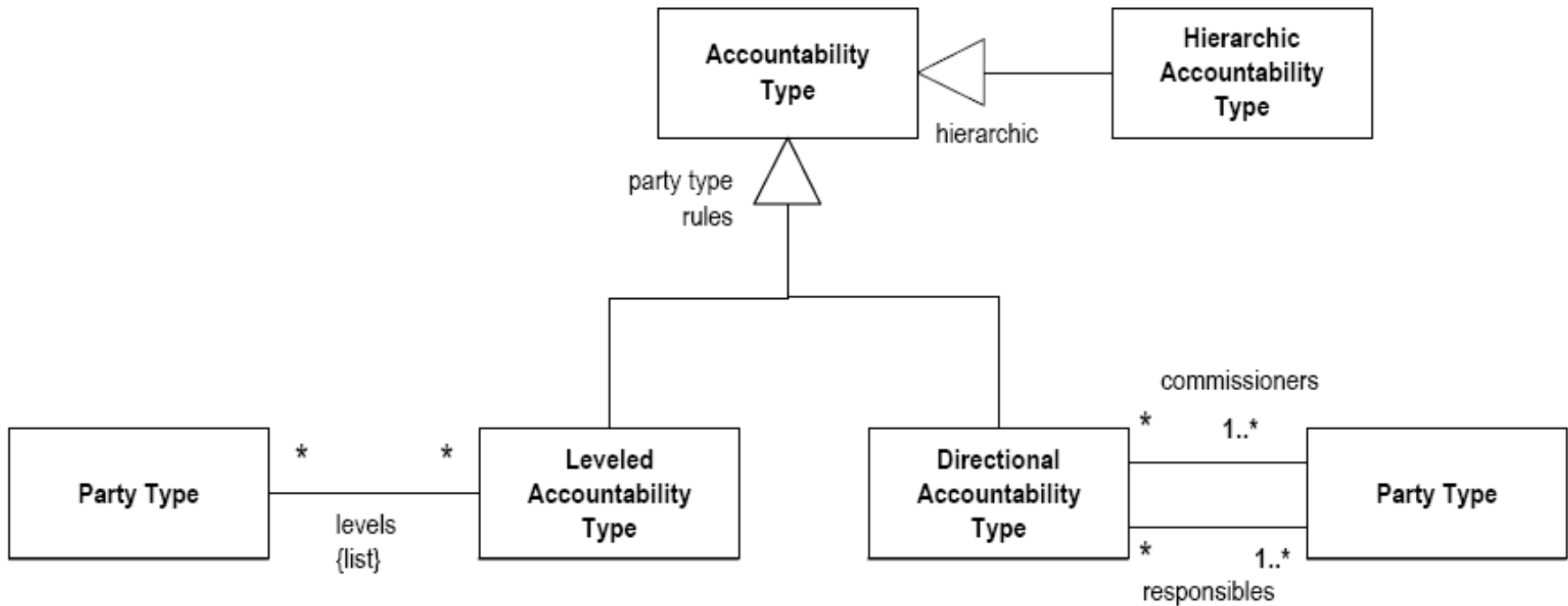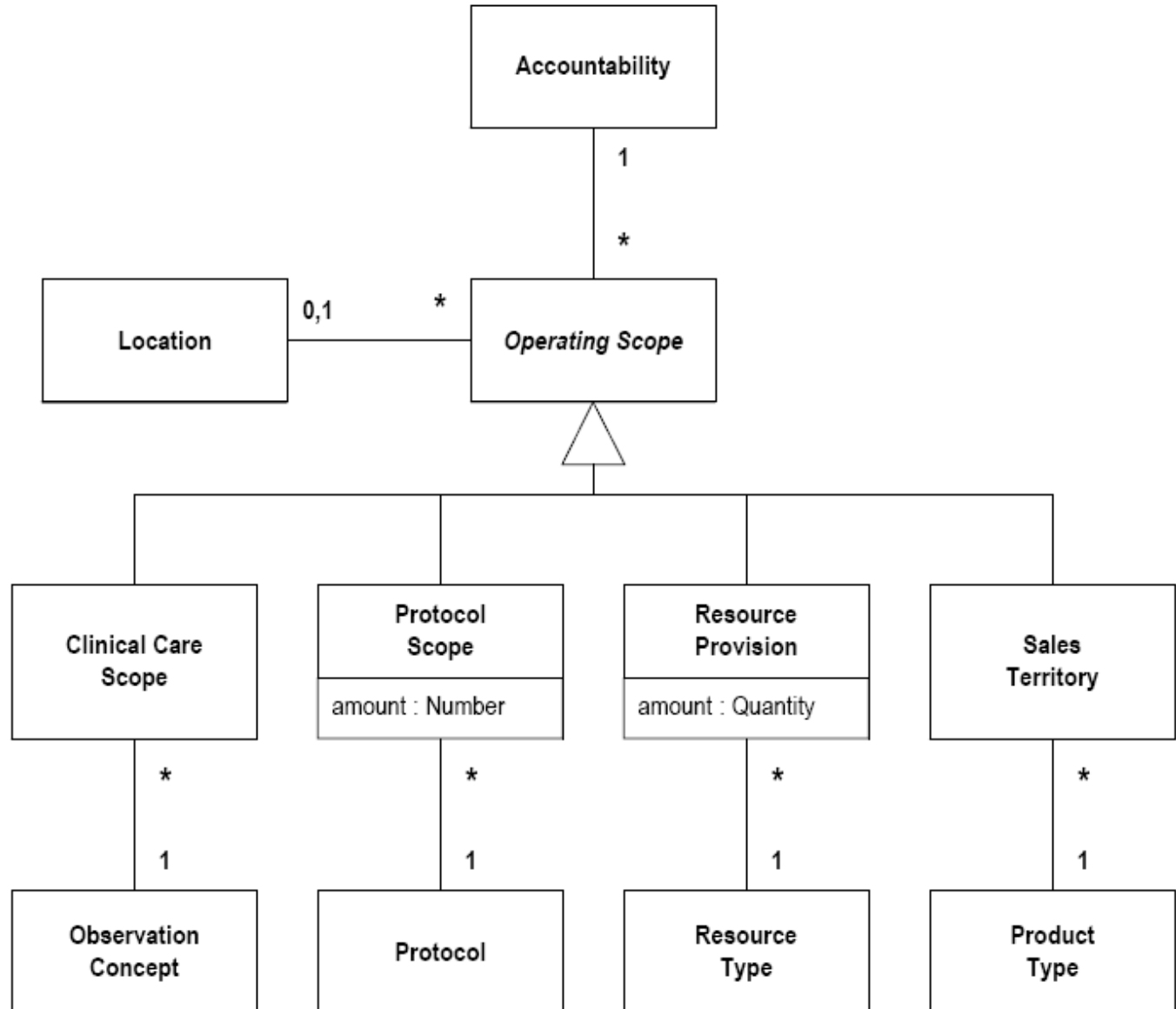
Hierarchic Accountability Type
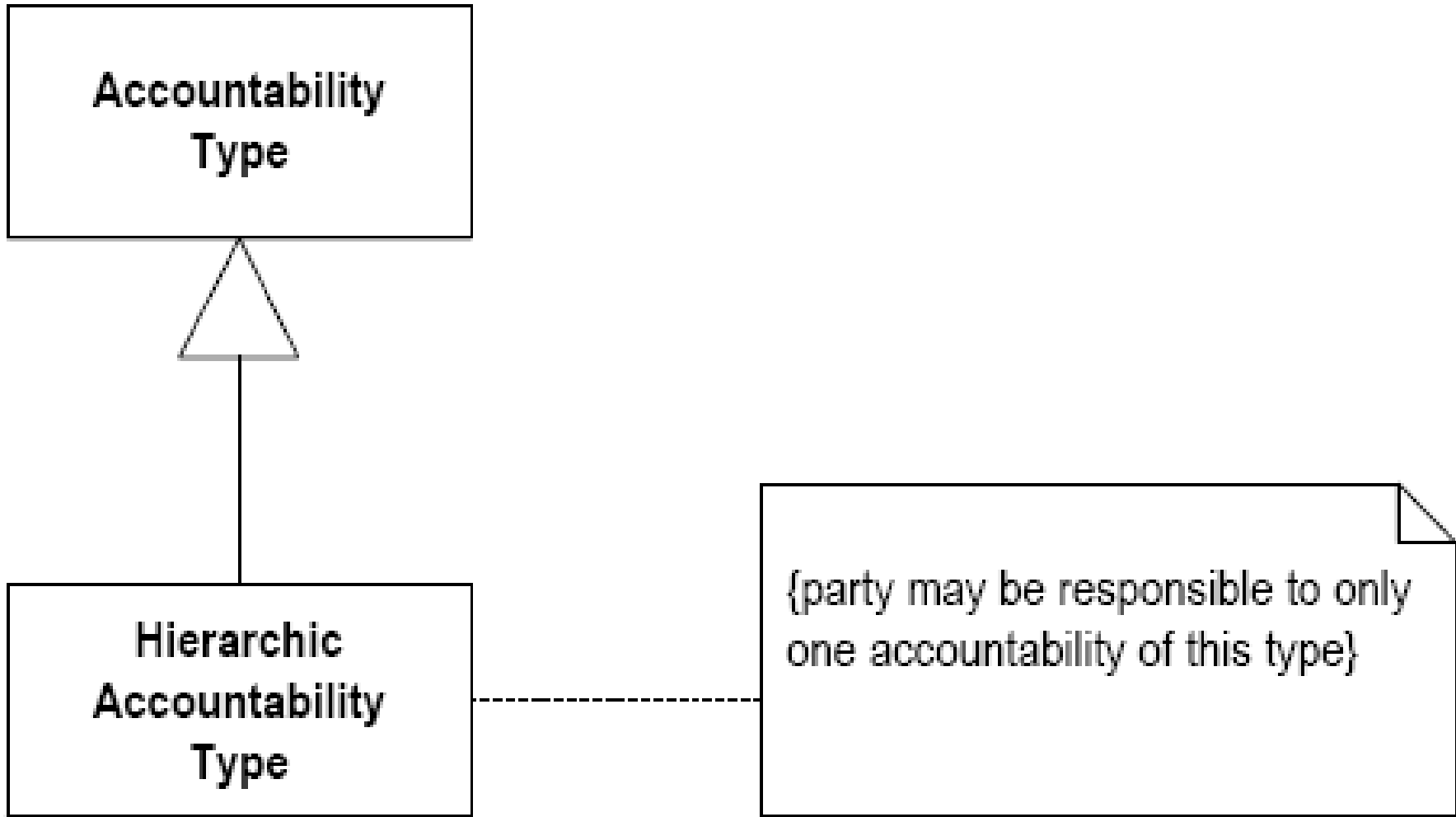
Leveled Accountability Type

Subtypes of Acountability Types

Operating Scopes

Accounting
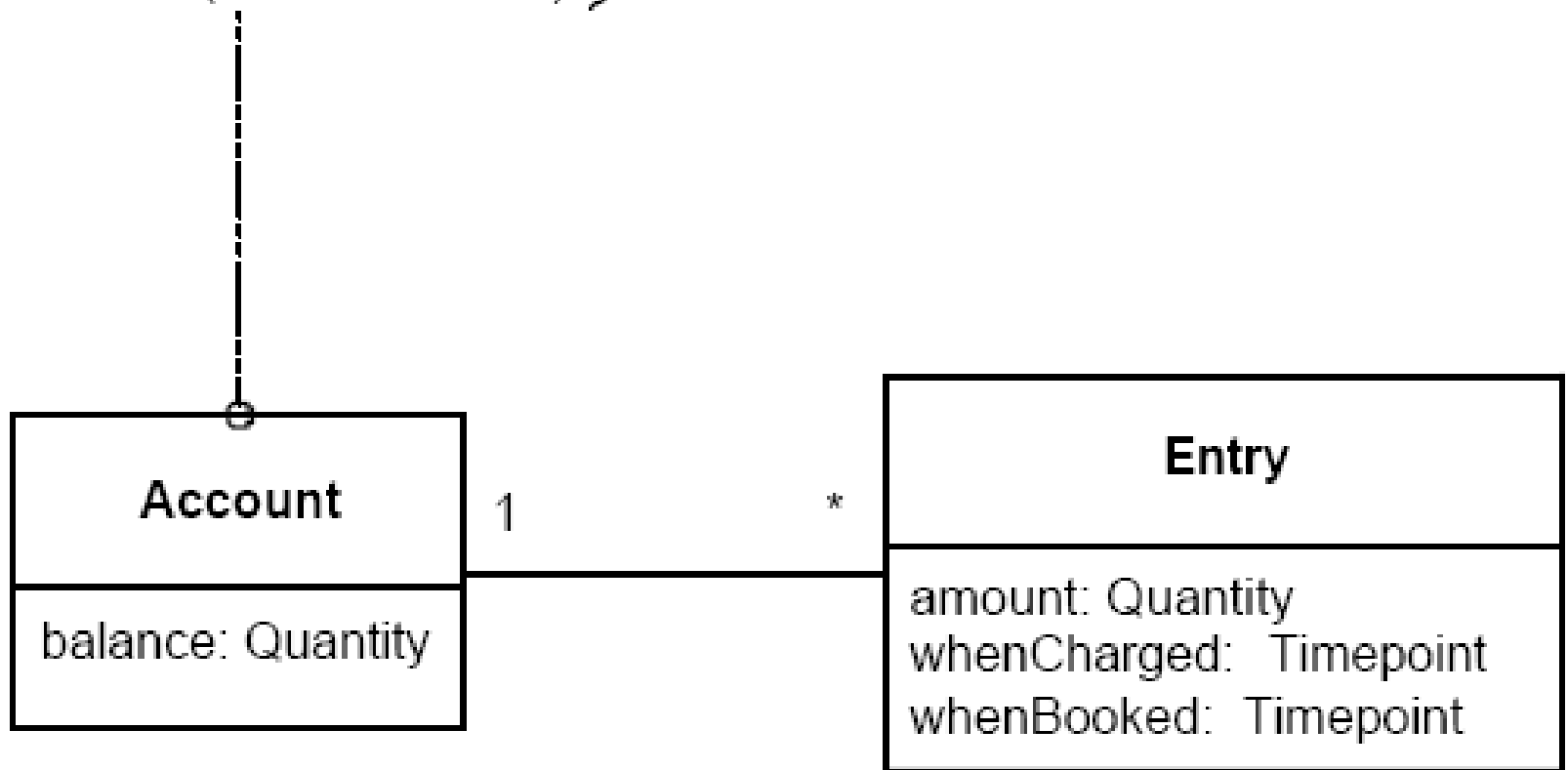
Tracing how money move througout the company
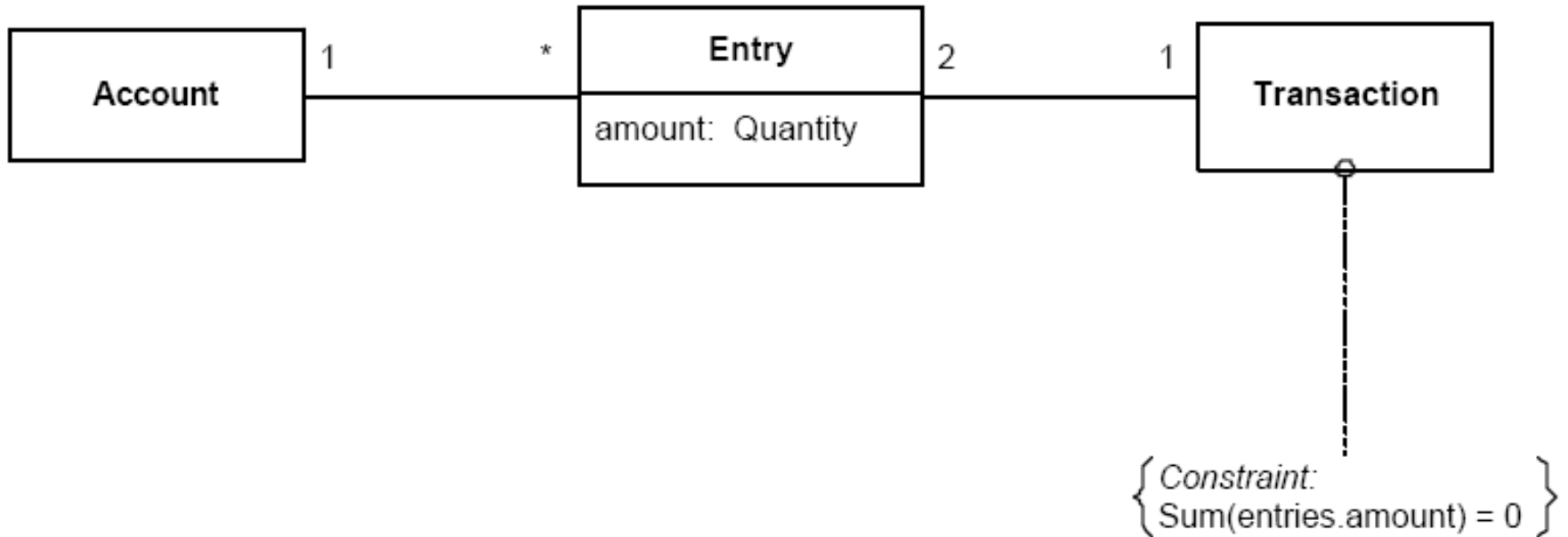Tacking of earnings and expenditures
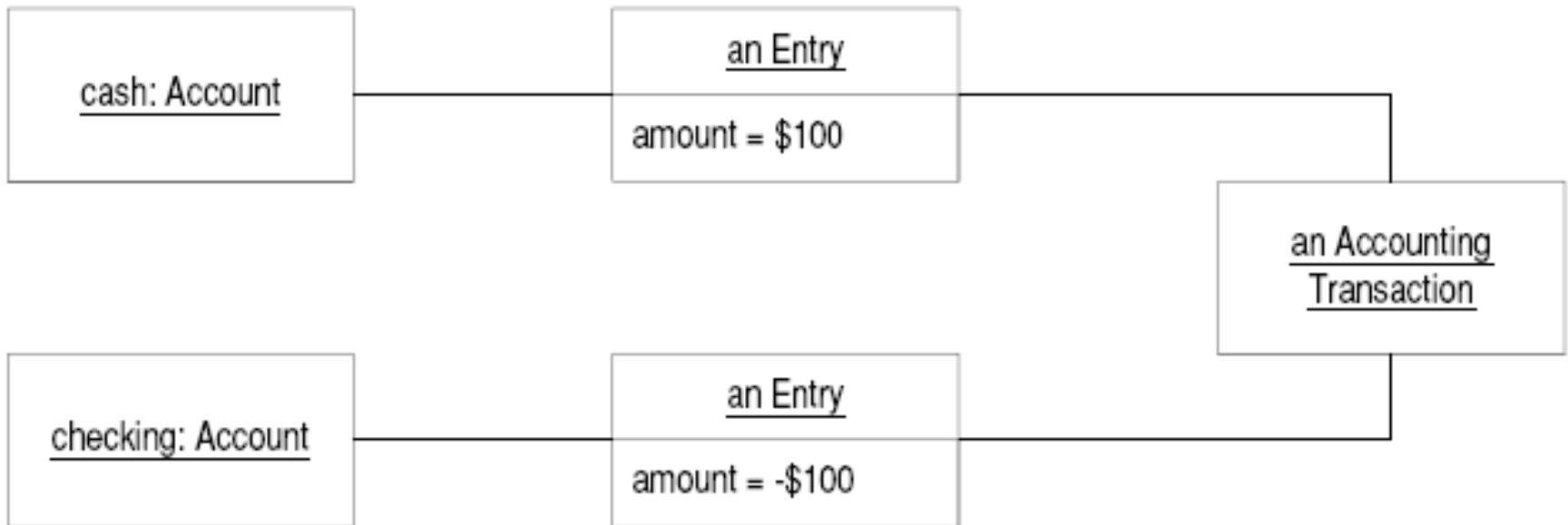Posts of money and goods to record – entries

Account

$$\left\{ \begin{array}{l} \textit{Constraint:} \\ balance = sum(entries.amount) \end{array} \right\}$$

Account
balance: Quantity

1   *

Entry
amount: Quantity whenCharged: Timepoint whenBooked: Timepoint

A Transaction with Two Entries


```
Account  1 ──── *  Entry              2 ──── 1  Transaction
                   amount:  Quantity
```

{ Constraint:
  Sum(entries.amount) = 0 }

Instance Example

Multiledged Transactions


```
Account  1 ──────── *  | Entry              | 2..* ──── 1  Transaction
                       | amount: Quantity   |
```

Constraint:
Sum(entries.amount) = 0
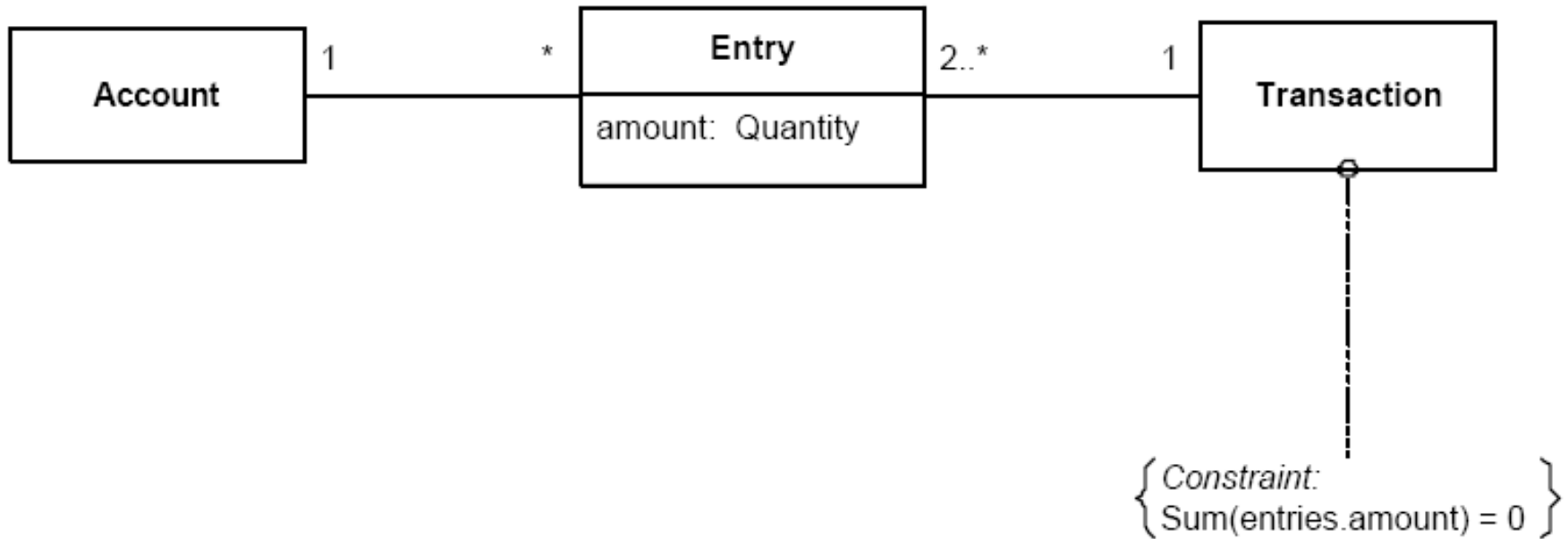
2-legged transaction without entries

Derivation:
= sum(withdrawals)
- sum(deposits)
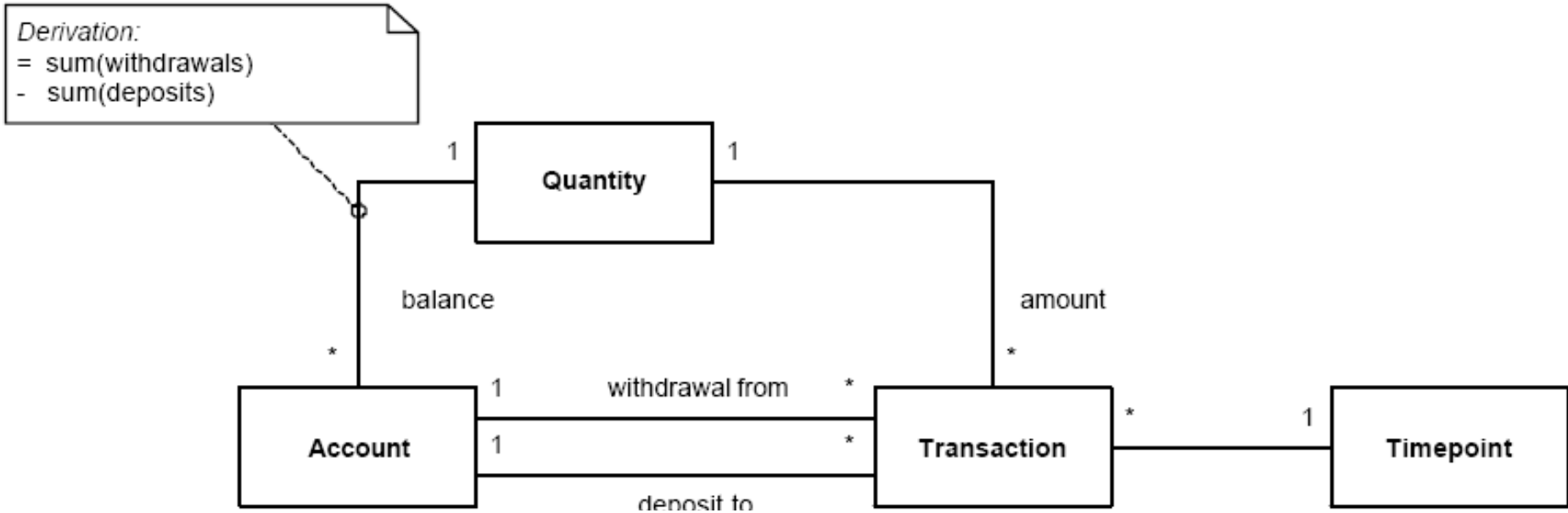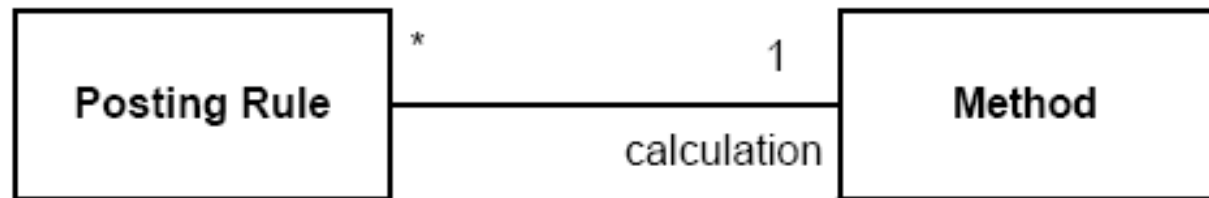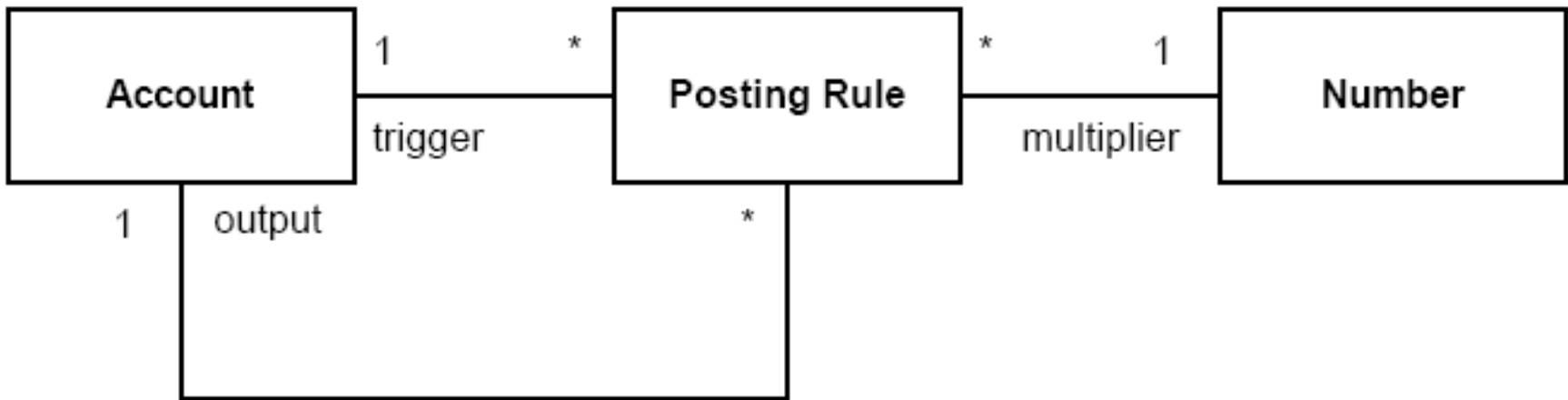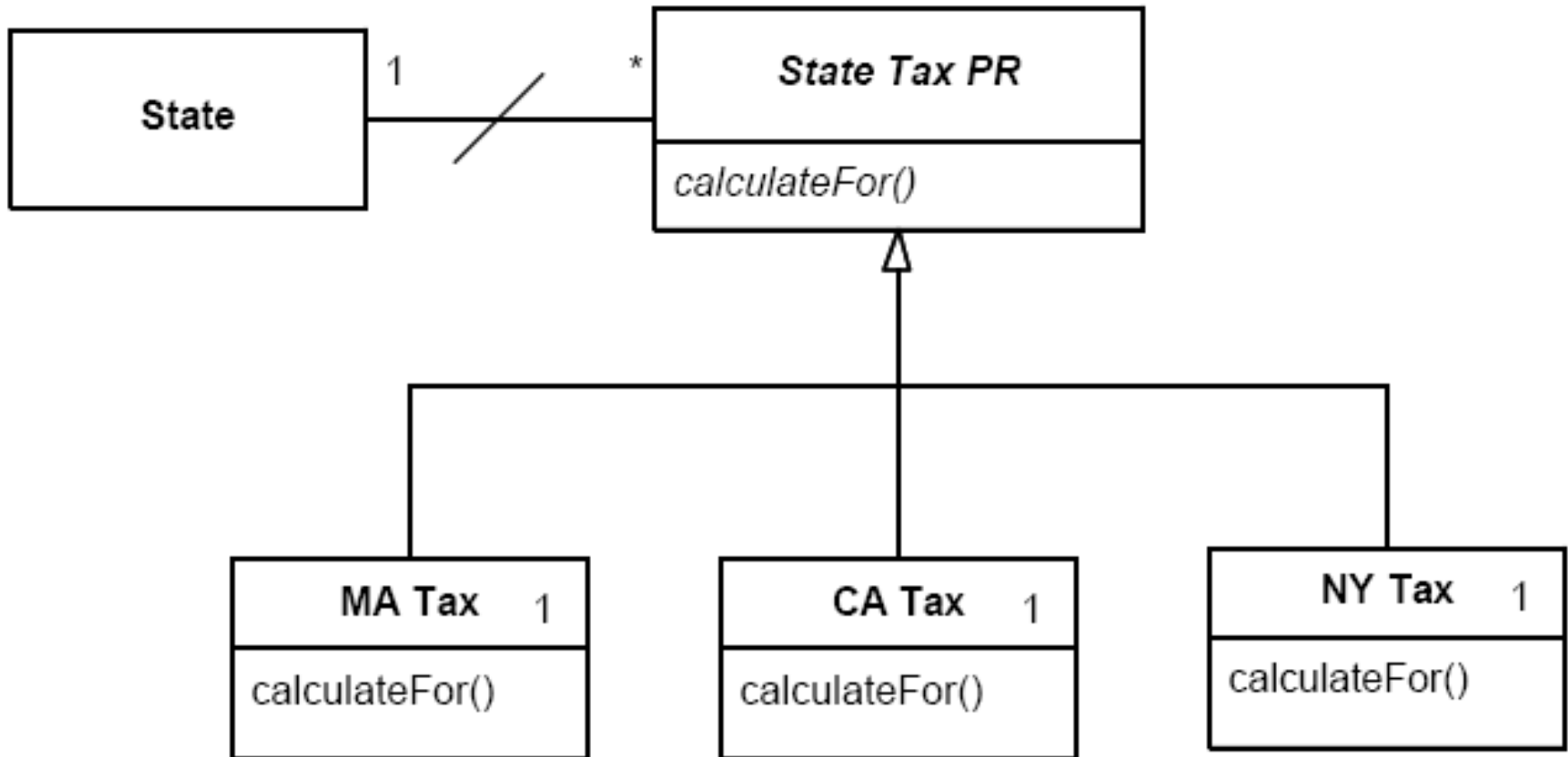
Summary and Detail Accounts
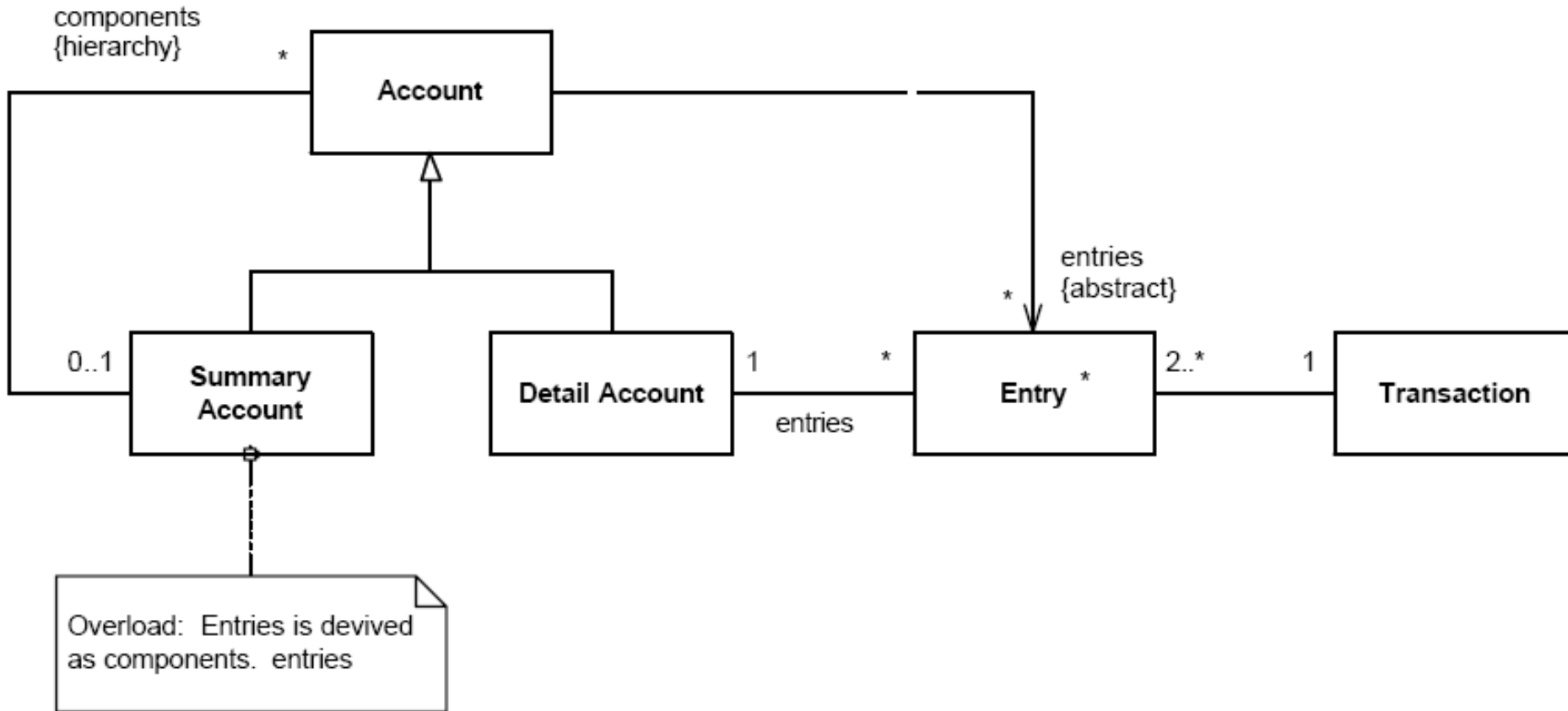
Account hierarchies without separating summary and detail accounts
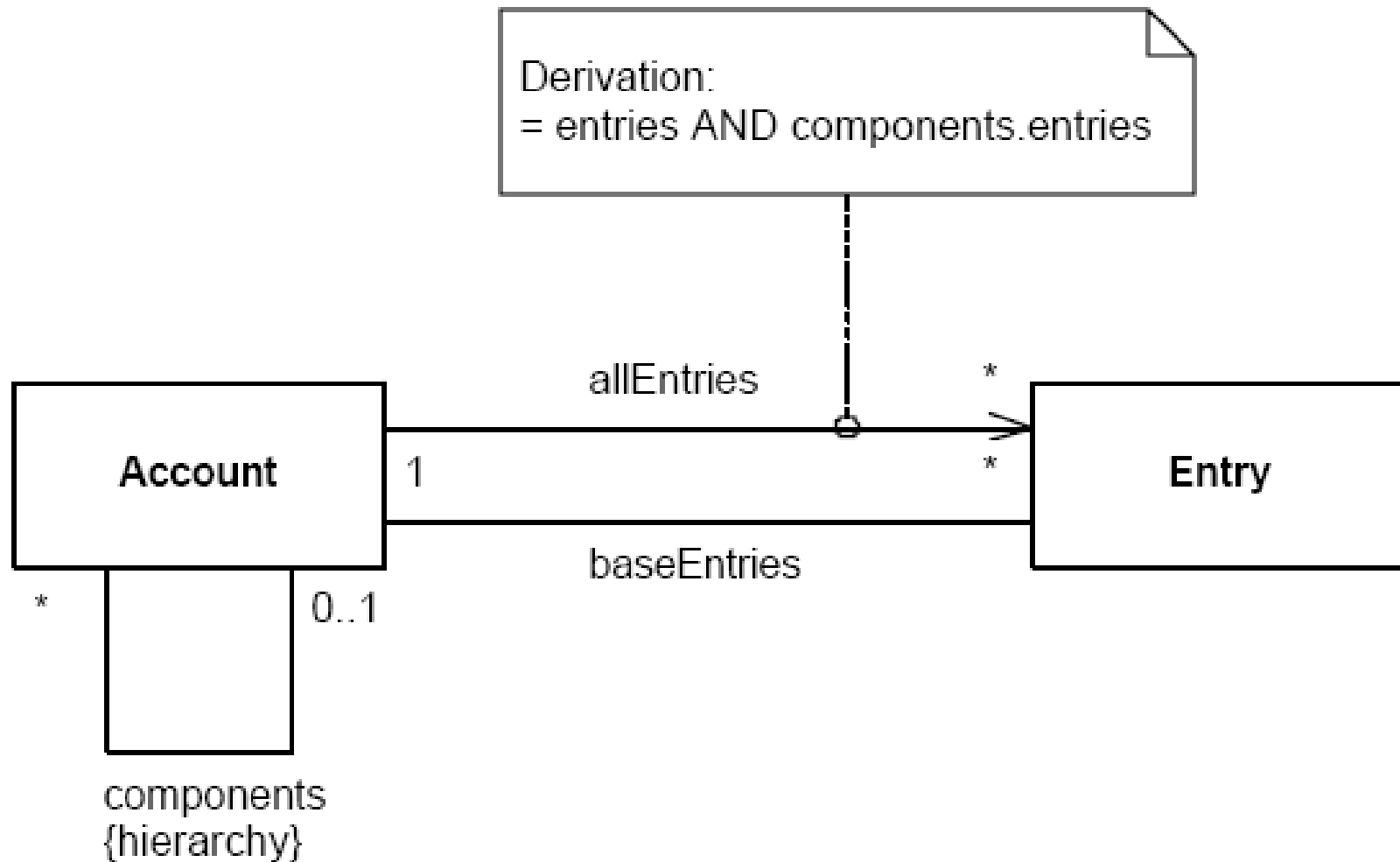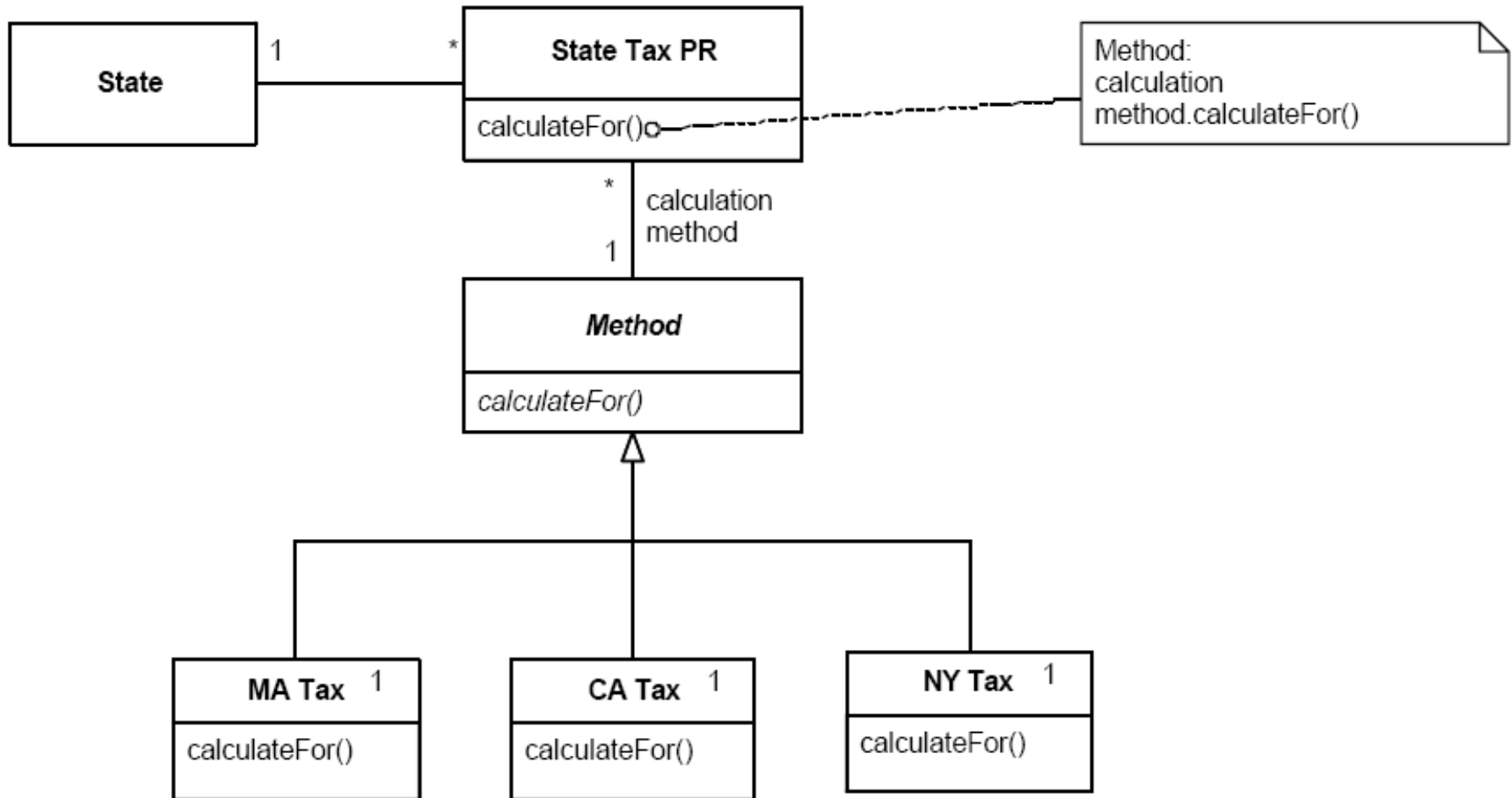
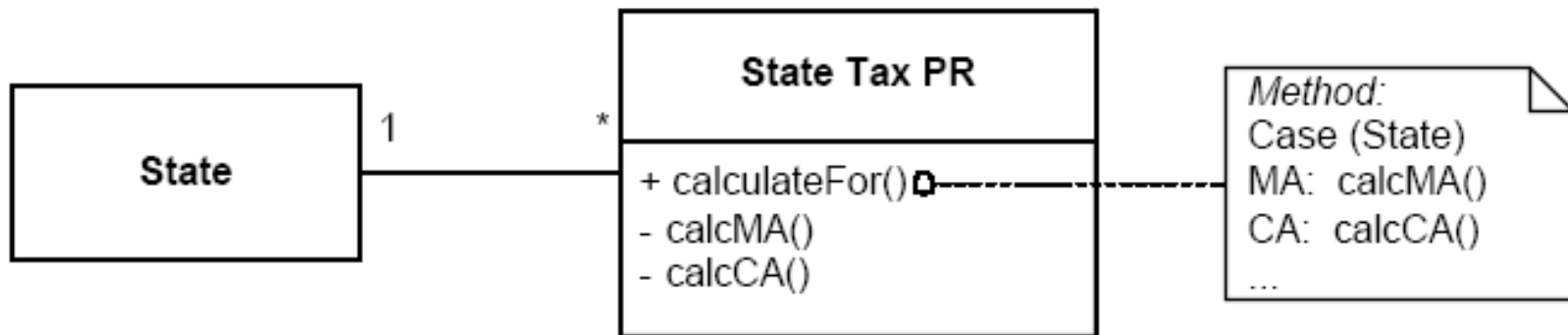# Posting Rules Multiplied by a Factor or a method to calculate an entry
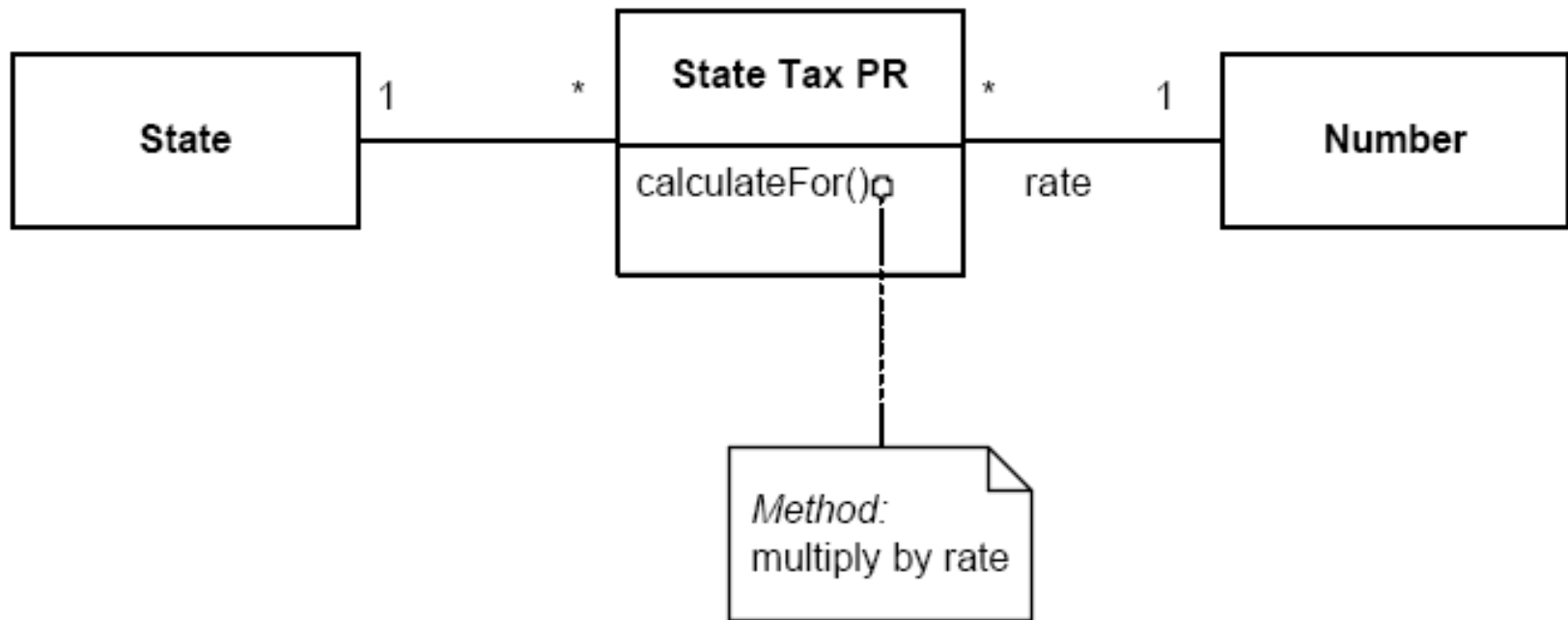
Individual Instance Methods with Singletons
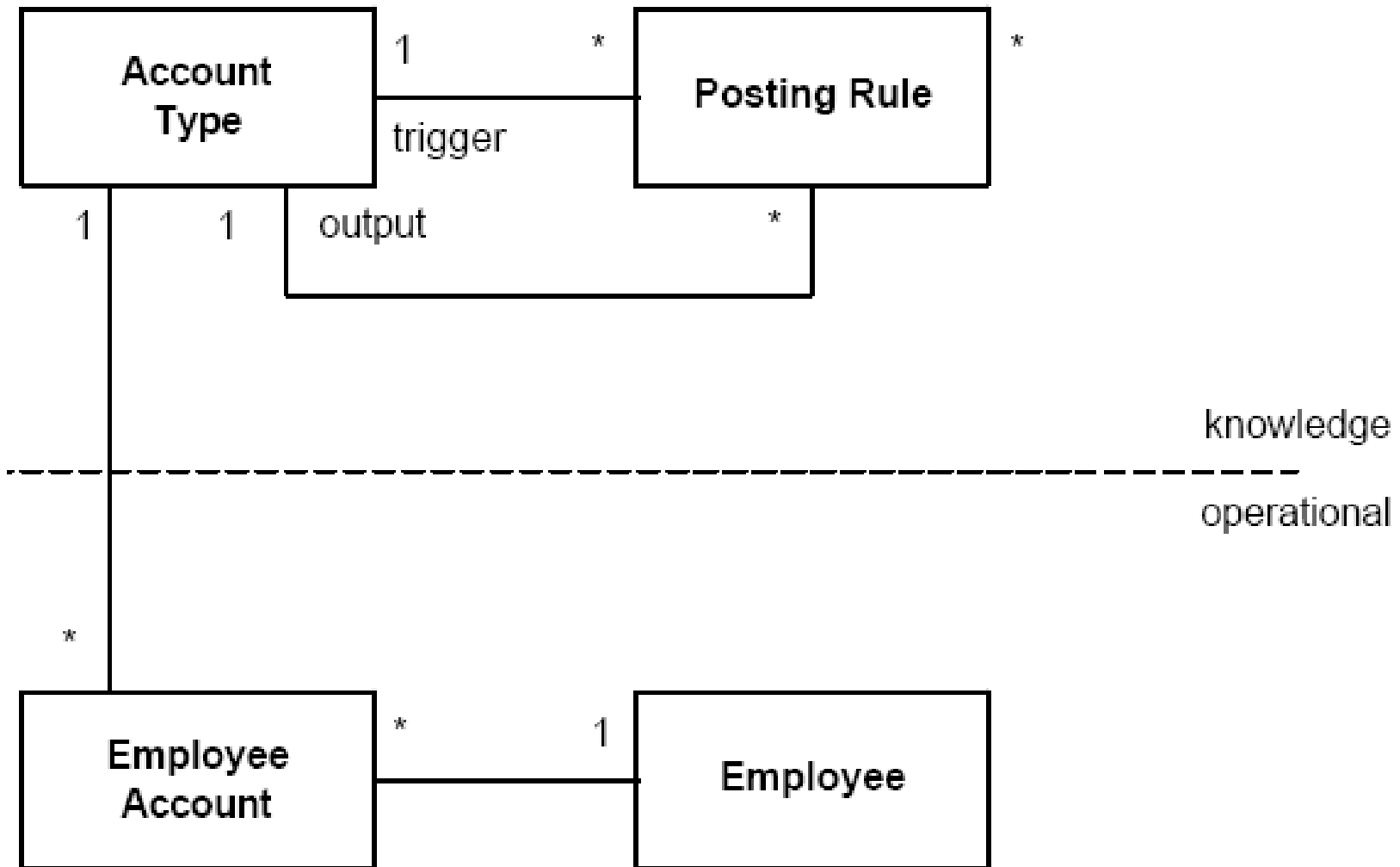
Implementation with Strategy Pattern

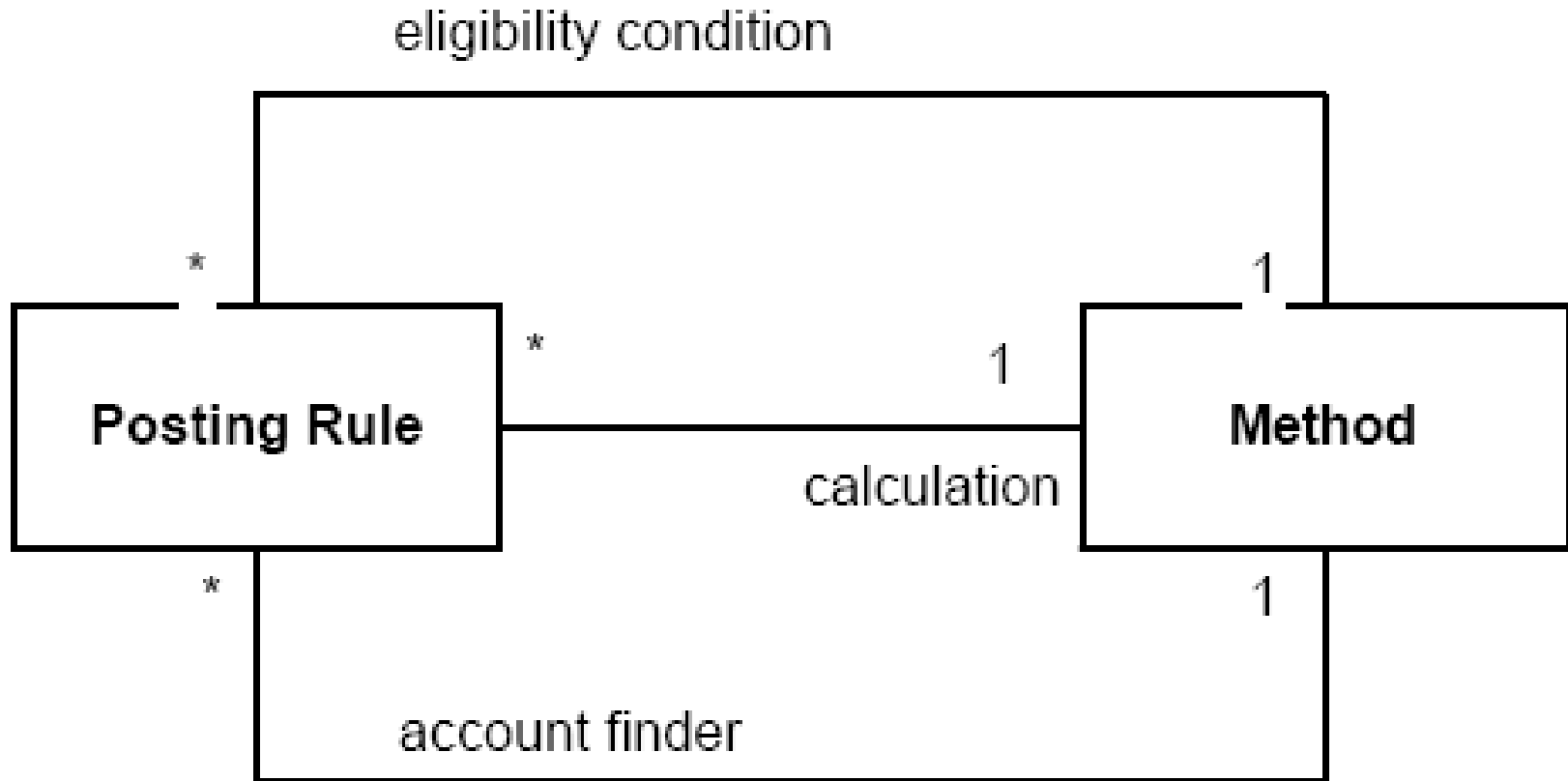# Implementation with Internal Case Statement
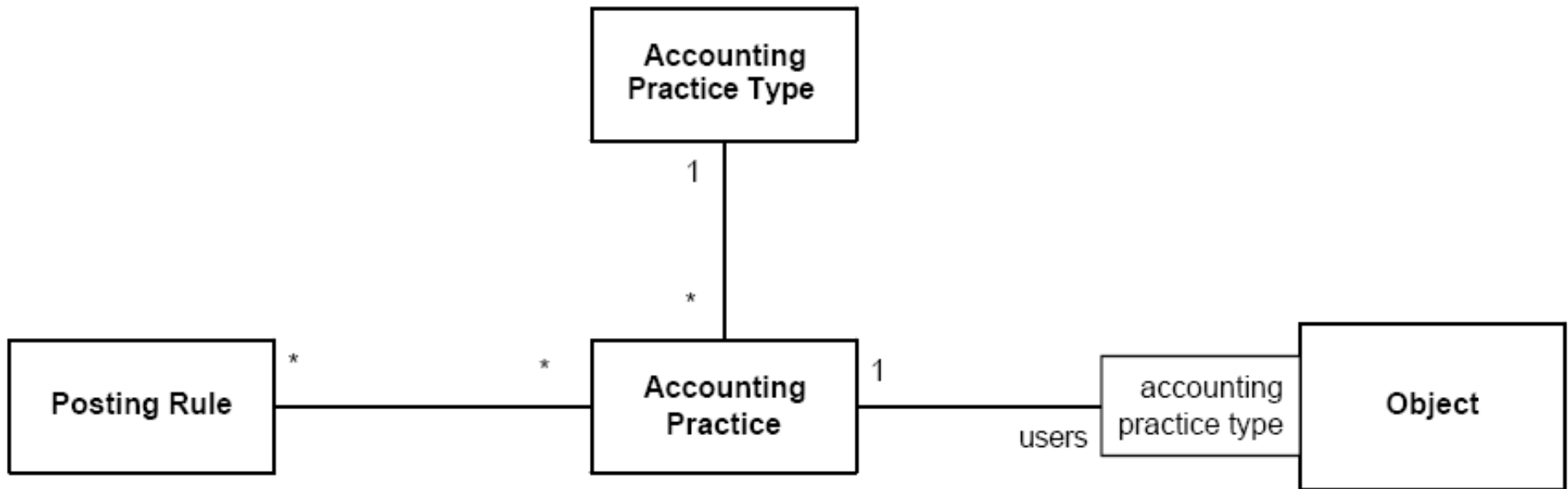
Implementation with Parametrized Method
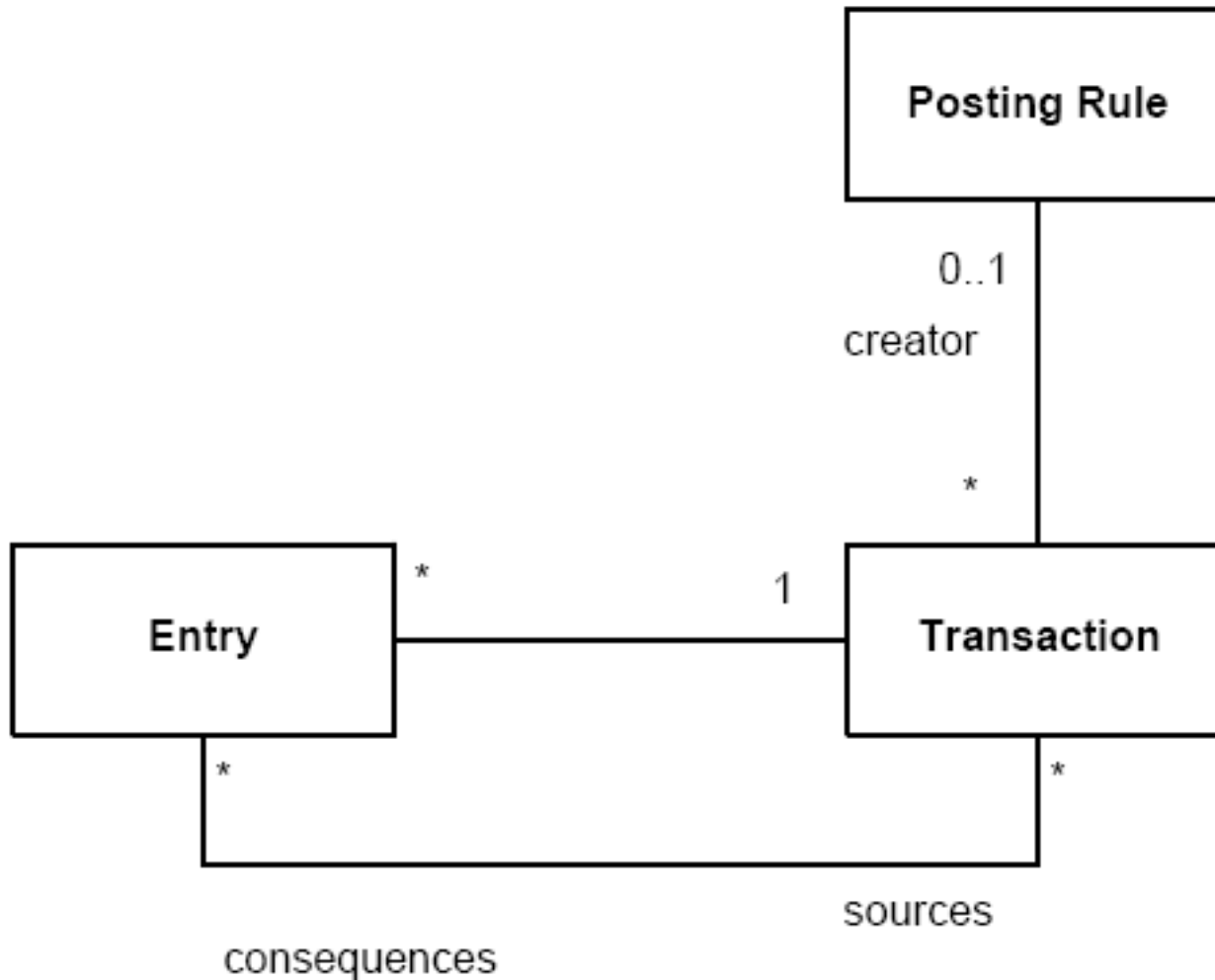
Posting Rules for Many Accounts

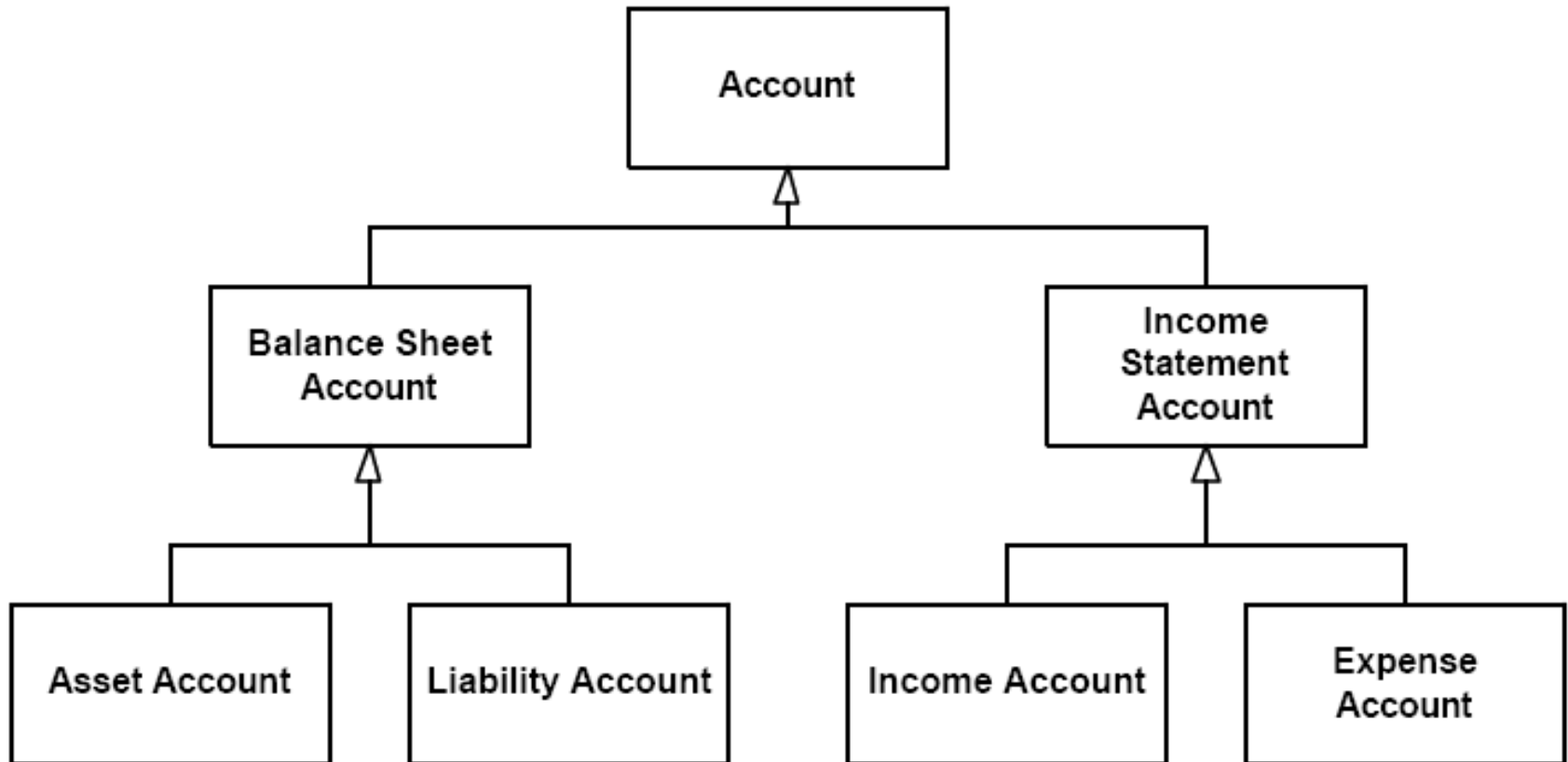# Account finder and Eligibility Conditions

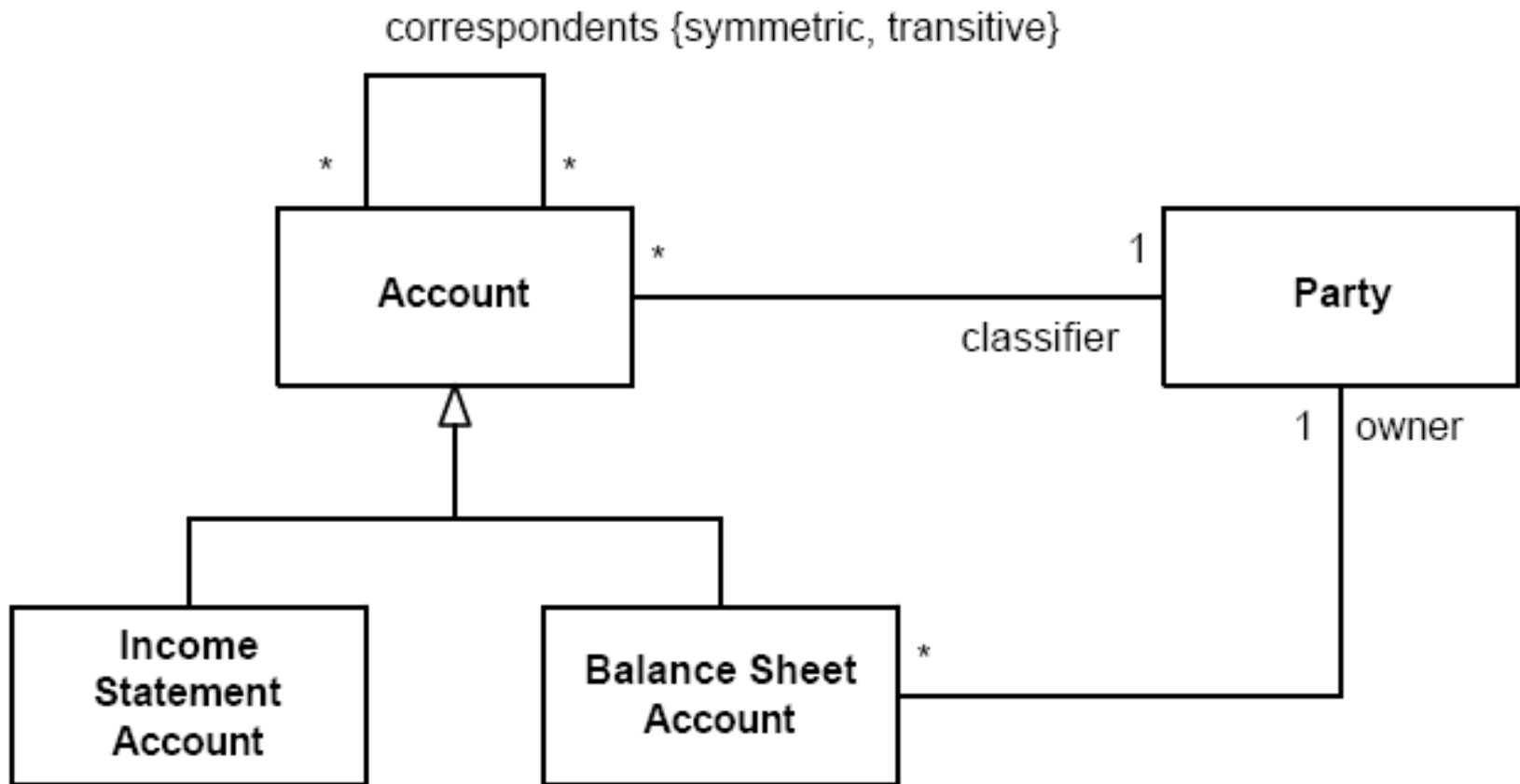# Acount Groups: Accounting Practices
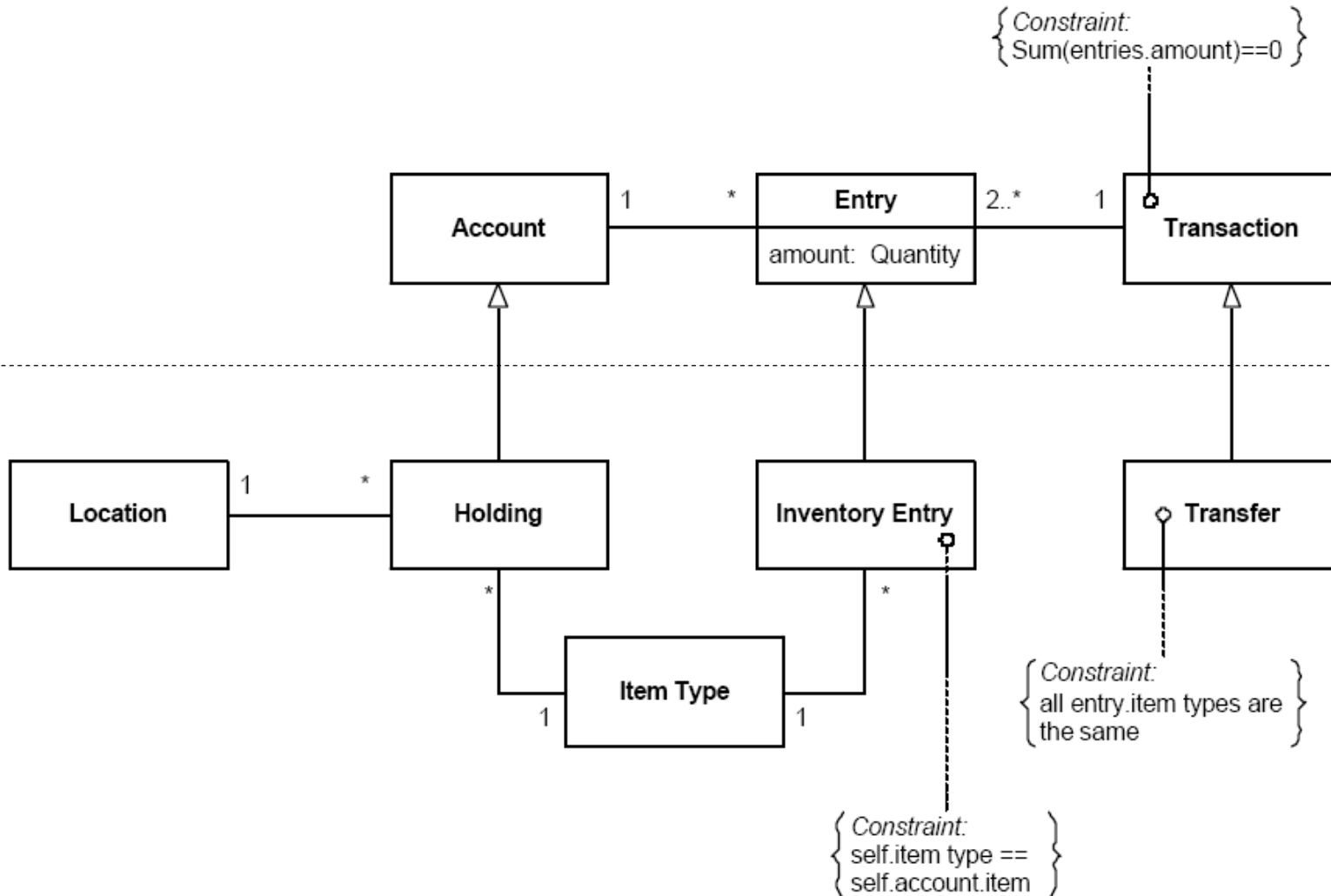
Sources for Transactions

Balance Sheet and Income Statement

Corresponding Accounts

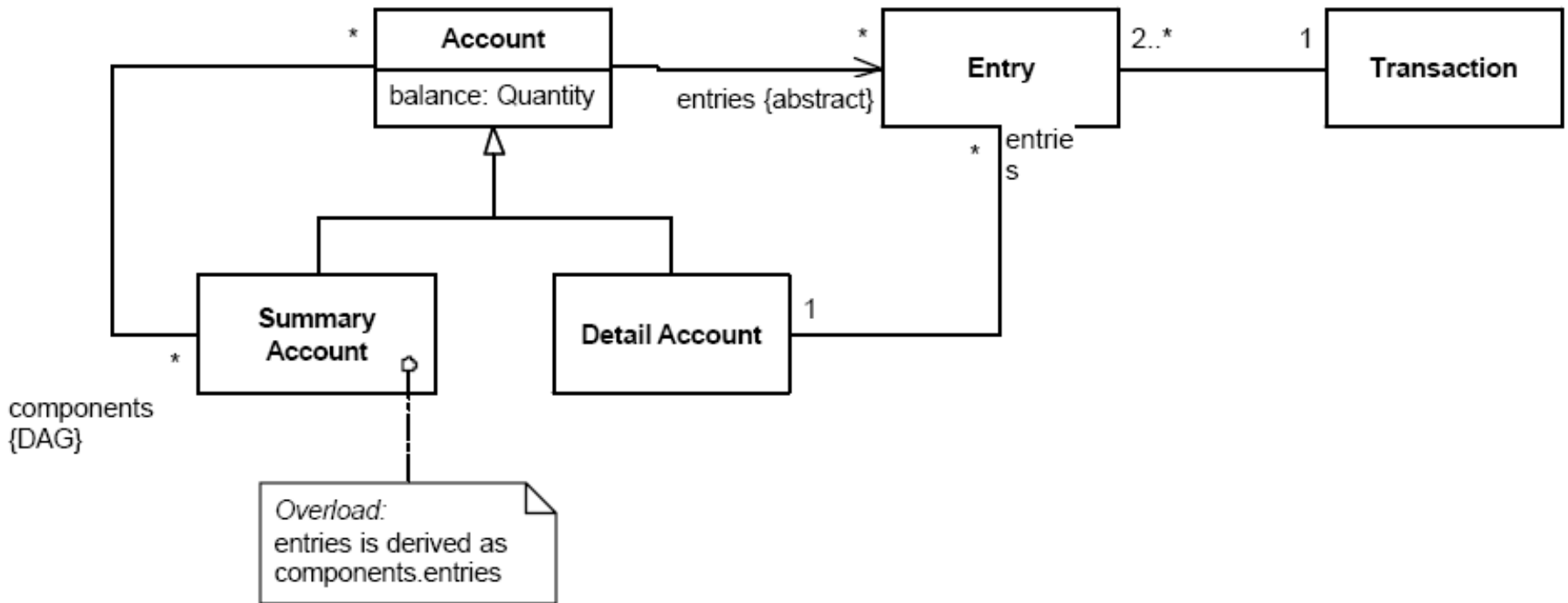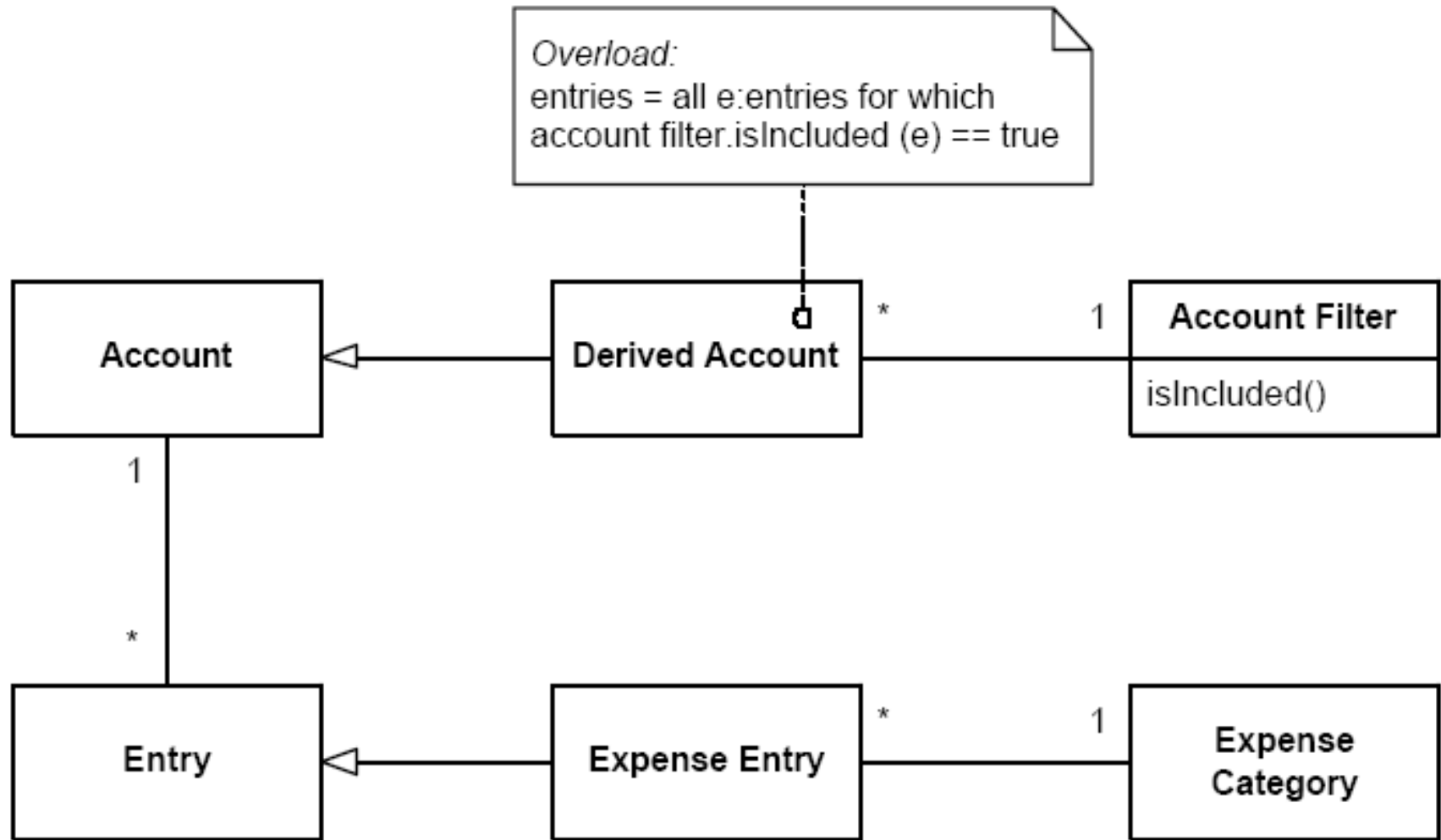# Supporting Inventories

Multiple Summary Accounts

Derived Accounts

Expenses to Abandon Accounting Model