Pemodelan Perancangan

Pendekatan OO

Fajar Pradana S.ST., M.Eng

FILKOM
FAKULTAS ILMU KOMPUTER

OOA, OOD, OOP

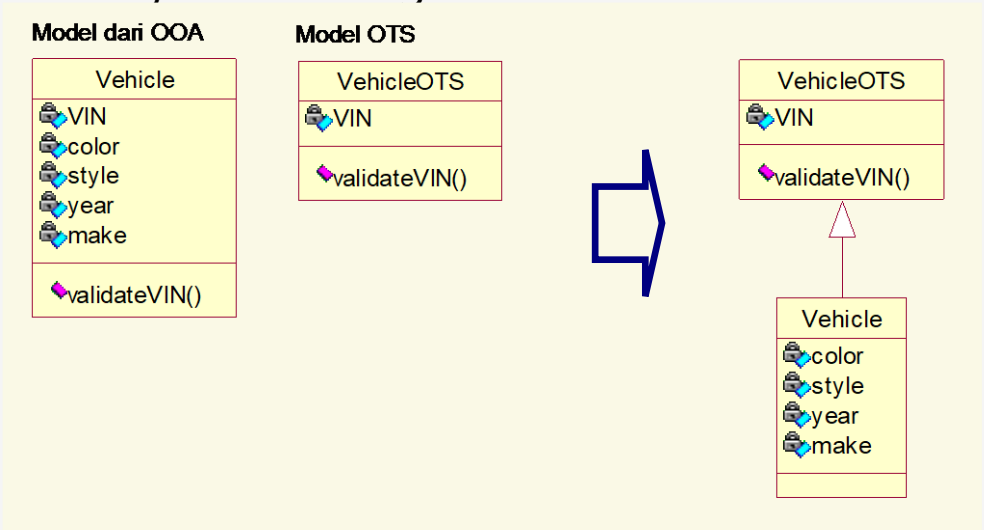
- Object-oriented analysis, design and programming are related but distinct
- OOA is concerned with developing an object model of the application domain
- OOD is concerned with developing an object-oriented system model to implement requirements
- OOP is concerned with realising an OOD using an OO programming language such as Java or C++

Konsep

- Metode untuk melakukan dekomposisi arsitektur sistem berdasarkan objek-objek yang dimanipulasi oleh sistem yang sedang dibangun
- Identifikasi dan mendefinisikan klas-klas tambahan yg merefleksikan implementasi dari kebutuhan-kebutuhan hasil analisis
- Notasi = OOA
- Proses :
  - Perancangan sistem : struktur klas, user interface, data management
  - Perancangan objek : atribut/struktur data, algoritma operasi

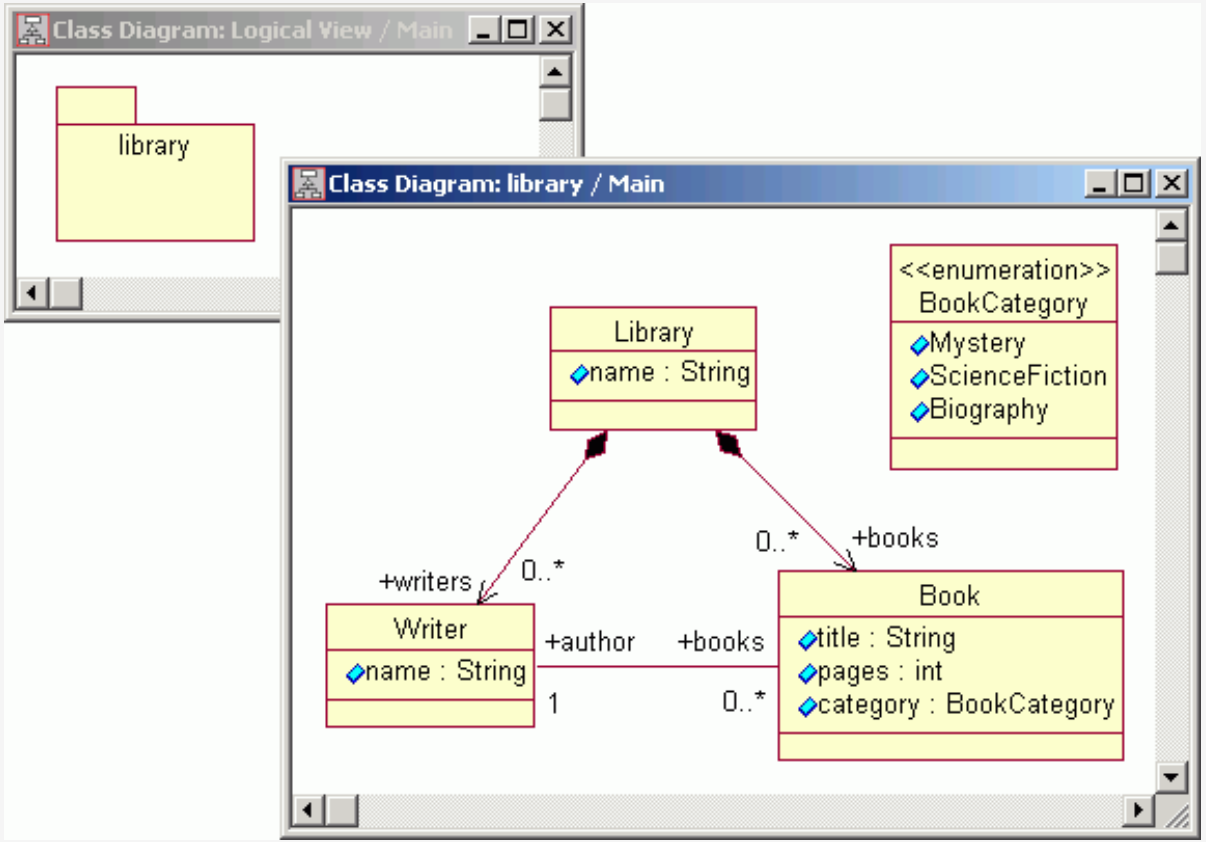
Struktur Klas

- Gunakan klas-klas hasil analisis dan tambahkan sesuai dengan kebutuhan perancangan
- Reuse jika memungkinkan



- packaging : pengelompokan klas-klas yg sesuai

Package Diagram



Finding Class

- Identifying object classes is often a difficult part of object oriented design
- There is no 'magic formula' for object identification. It relies on the skill, experience and domain knowledge of system designers.
- Object identification is an iterative process. You are unlikely to get it right first time.
- Use domain analysis as before
- Use a grammatical approach based on a natural language description of the system
- Base the identification on tangible things in the application domain

Object Design

- Attributes
  - Describe the state and characteristics of the object
  - Must be typed : primitive or class
  - Only name and type are mandatory
- Operations
  - Operations manipulate attributes and perform other tasks
  - Scope is the class
  - Operation signature is composed of name, parameters and return type

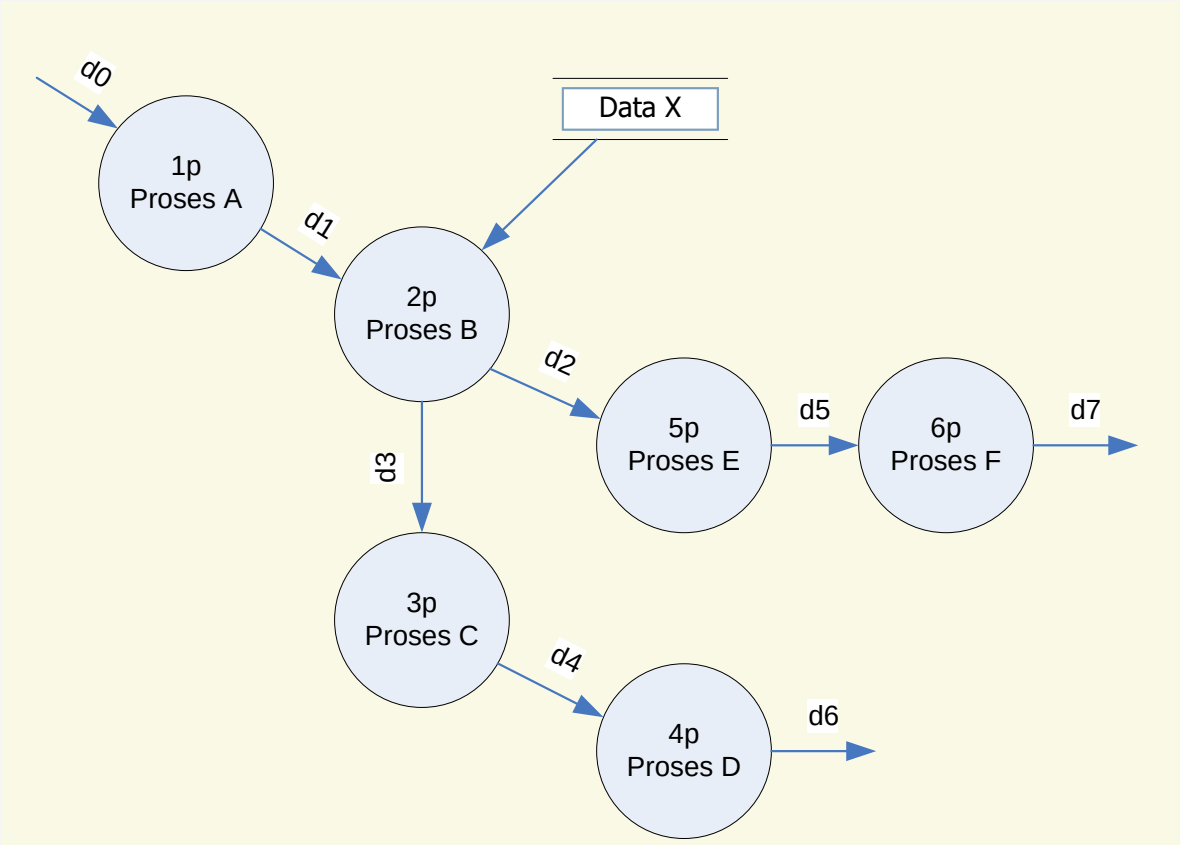
Object Design

- Sifat akses atribut dan operasi/service :
  - **private** (klas/objek ybs.)
  - **protected** (klas/objek ybs. dan turunannya)
  - **public** (semua klas/objek)
- Algoritma operasi → untuk implementasi spesifikasi dari setiap operasi
  - operasi manipulasi data (set, delete, get, dll.)
  - operasi komputasi
  - operasi pengontrolan

Operations – polymorphism

- Polymorphism means many (poly) shapes (morph)
- There are two kinds of polymorphism:
  - **Overloading**
  1. Two or more methods with different signatures with the same name
  2. They essentially do the same thing, e.g. class constructors
  - **Overriding**
  1. Replacing an inherited method class with another having the same signature (no matter with different parameter's name)
  2. Do different thing using the same method's signature

Latihan


d0
1p
Proses A
d1
Data X
2p
Proses B
d2
5p
Proses E
d5
6p
Proses F
d7
d3
3p
Proses C
d4
4p
Proses D
d6

Terima Kasih

Ada Pertanyaan