

Afternoon Sessions

Session 1 (Oct 18) : Modeling Use Case Diagram

Session 2 (Oct 25) : Documenting Use Cases & Creating Activity Diagrams

Session 3 (Nov 1) : Modeling Class Diagrams

Session 4 (Nov 8) : Modeling Sequence Diagrams: Use case realization

Session 5 (Nov 15) : Case study (tentative)

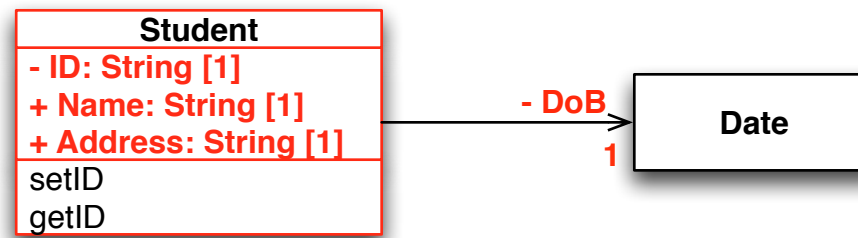
Session x (Nov 22) : Tentative

Session 6 (Nov 29) : Evaluation (tentative)

Class Diagram for Business Modeling

"A class diagram describes the types of object in the system and the various kinds of relationships among them"

Fowler, 2004



Class Diagram: the basics

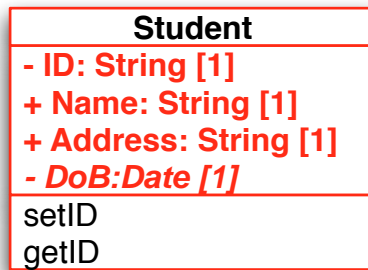
- Properties
- Multiplicity
- Bidirectional association
- Operation
- Generalization
- Dependency

Properties

"properties represents structural features of a class"

Properties can be depicted in two ways:

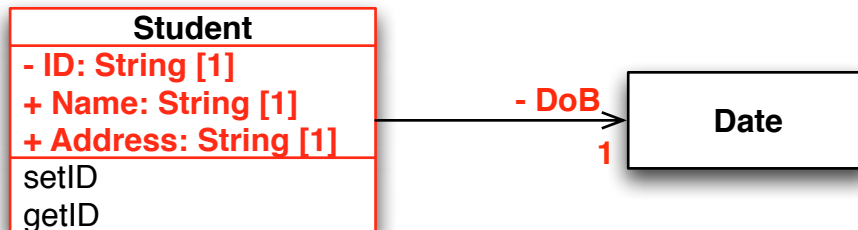
1. Attribute



visibility name: type [multiplicity]

Note how "**DoB**" can be represented as an attribute as well as an association!

2. Association



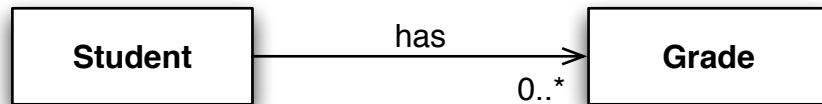
Hint: Model properties as associations only if doing so adds value to your diagrams!

Multiplicity

"Indicates how many objects can be associated with a property"

- 1 : A student must have exactly one supervisor
- 0..1 : A student may or may not have a supervisor
- * or 0..* : A student may have zero or more supervisors

Bidirectional Association



A student object may hold zero or more grade objects



A student object may hold 1 up to 5 course objects

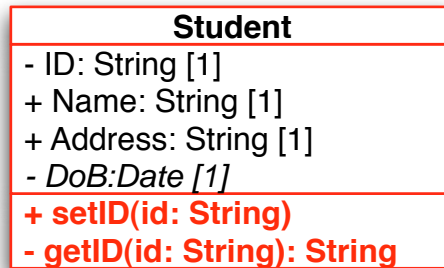
A course object may hold 0 up to 5 student objects

Hint: In business modeling (conceptual models), navigability is not an important issue. You can omit navigability in conceptual models!

Operations

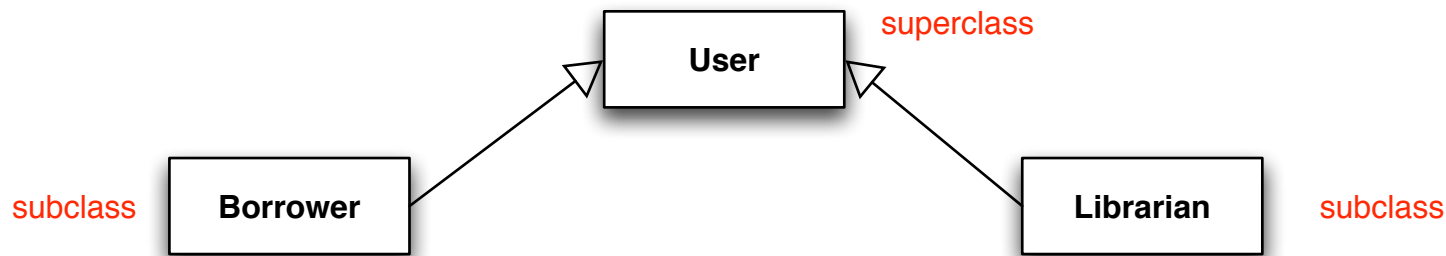
"Functions that are provided by a class"

visibility name (parameter-list) : return type



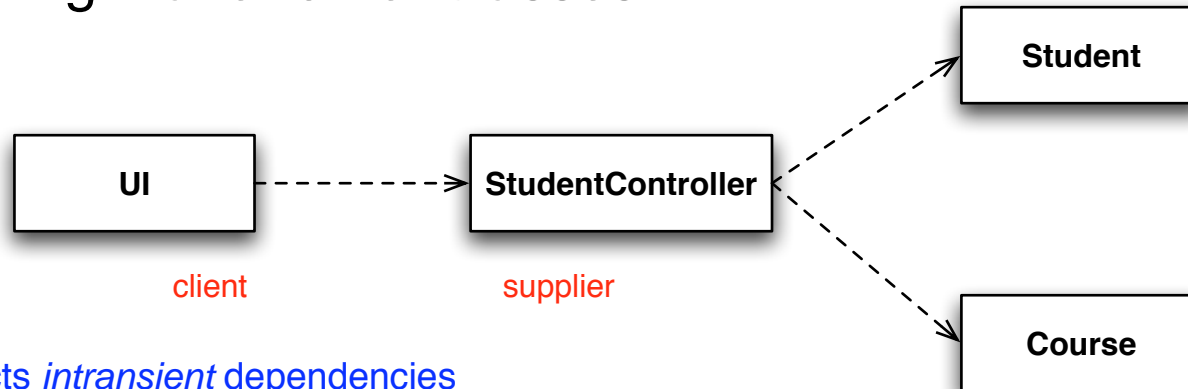
Generalization

"Specialization of a class into one or more specific classes"



Dependency

"Use dependency to indicate a situation where changes in a class (or other elements) might alter other classes"



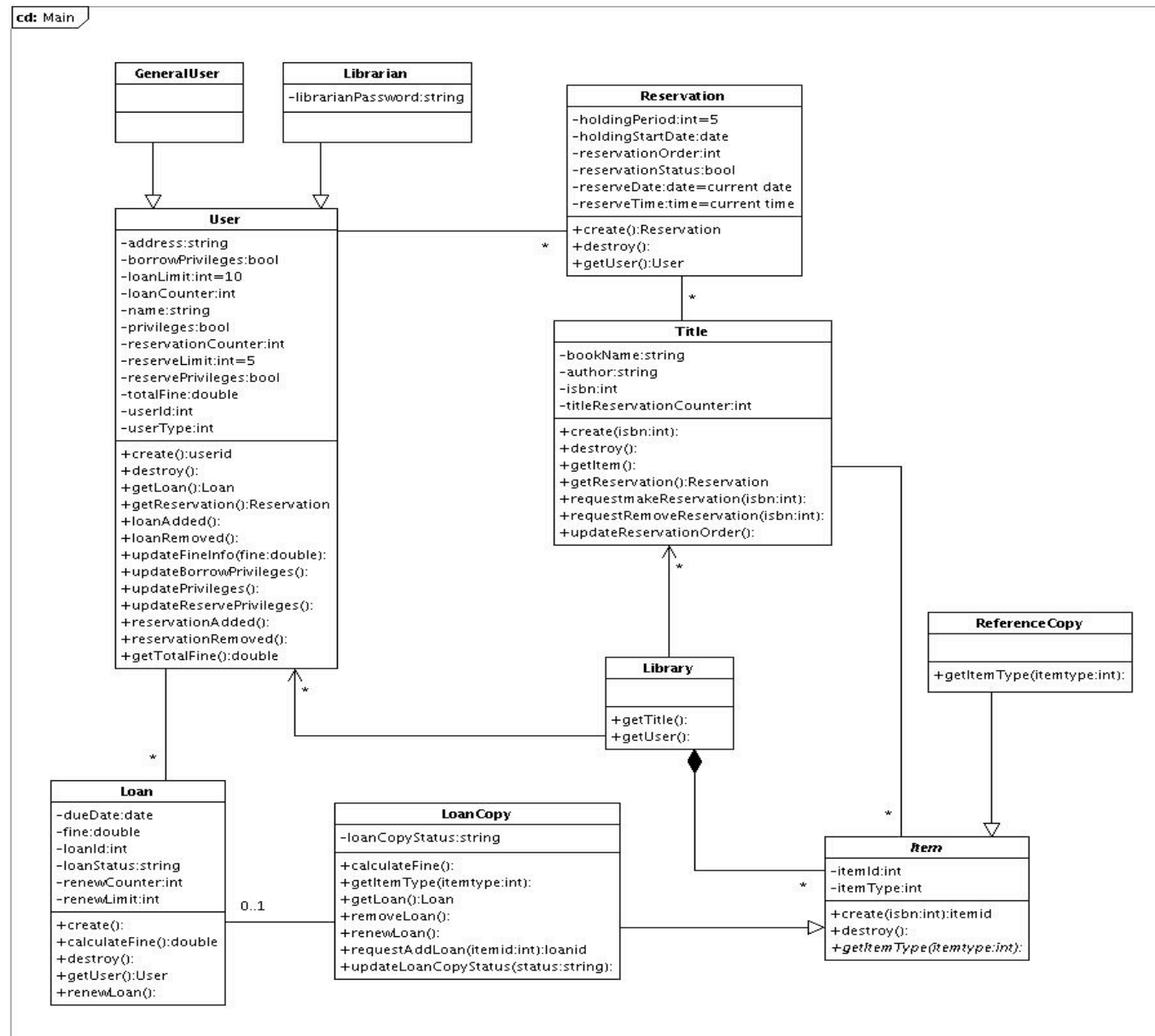
Association depicts *intransient* dependencies

Creating a Business Model

"A business model is an abstract representation of a system. It captures objects, information contained by objects, and business rules that relate objects".

- Identify *entity* classes (classes that are meaningful to the business)
- Identify class properties (i.e., attributes and associations)
- Identify multiplicity
- Identify potential generalizations

Example: Business model of a library



Practical Assignment

Create a business model of your organization/business using a class diagram(s)!

Remember: a business model must capture all important objects that are meaningful to the business.

- * In groups of two students
- * Create and save your models in ArgoUML
- * Send your models to **anugroho@liacs.nl**