Semantic Models

Before the object data model…

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Hierarchical
data model

Relational
data model

Graph
data model

Semantic
data model

Object
data model

Entity

Represents . . . entity

Matematikos
ir informatikos
fakultetas

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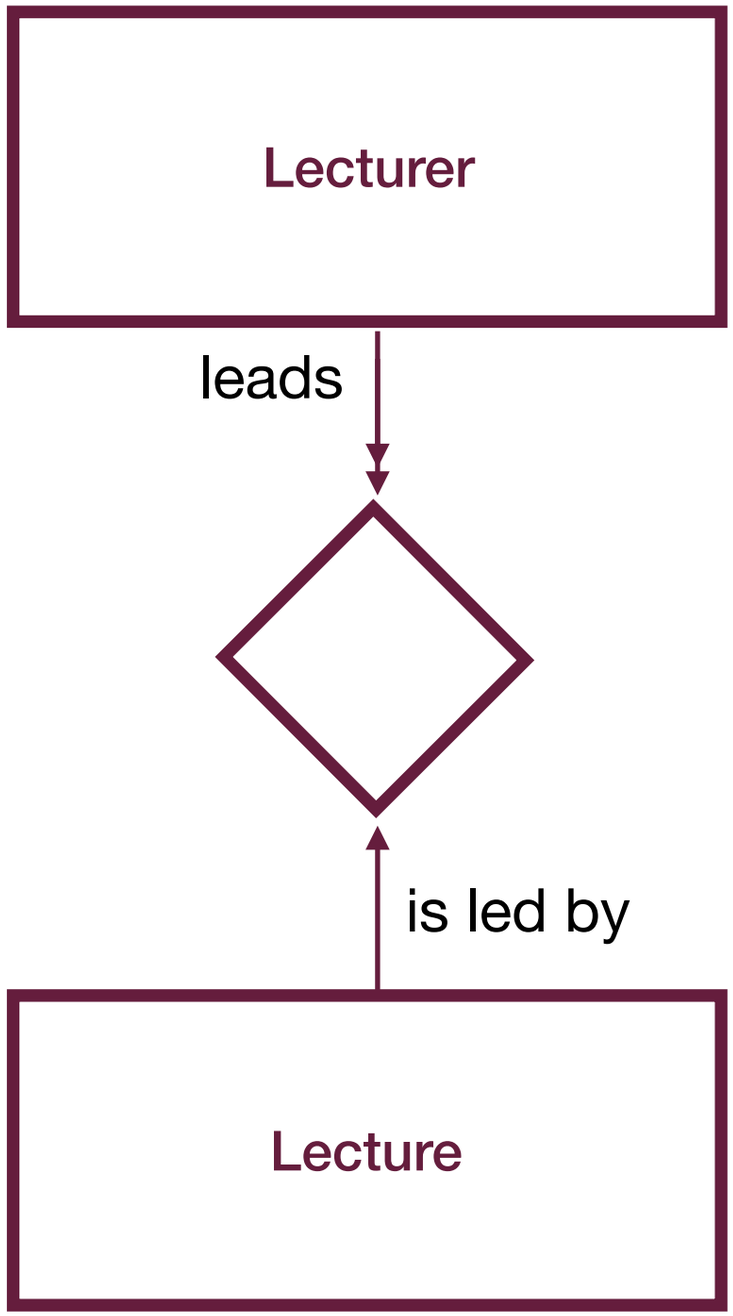
Associations

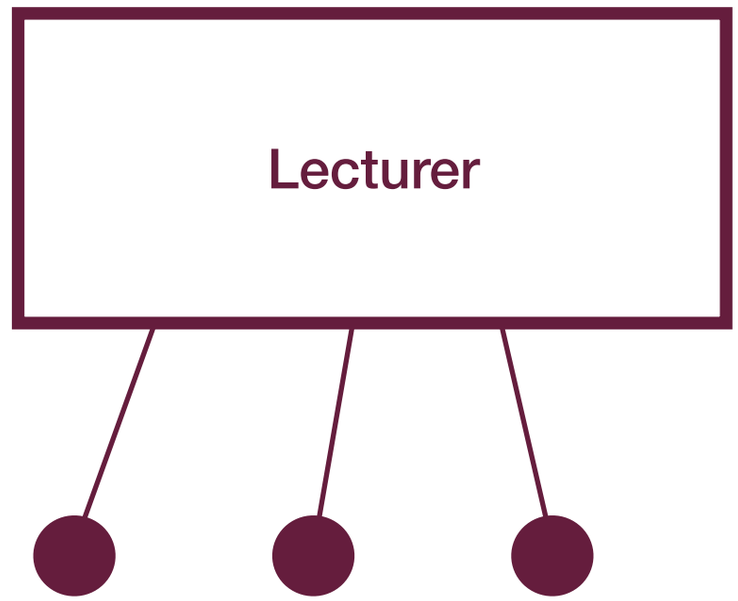
Links between entities

- Single
- Multiple



Attributes

- Key attribute *vs.* non-key
- Mandatory *vs.* facultative
- Simple *vs.* complex
- Single *vs.* multiple
- Descriptive *vs.* association
- Defined *vs.* derived
- Constant *vs.* modifiable



Abstraction techniques

- Classification
  A. *Extensional* aspect: class is just a set of some objects
  B. *Intentional* aspect: all objects in a class have similar structure
- Agrégation
- Generalisation / specialisation

  Iterative process

Generalisation / specialisation

- Two golden rules
  A. If a class ***c*** is a sub-class of ***C***, then ***c*** is a sub-set of the class ***C*** (*extensional* aspect)
  B. If a class ***c*** is a sub-class of ***C***, then ***c*** inherits all properties from the class ***C*** (*intentional aspect*)
- Agrégation
- Generalisation / specialisation

  Iterative process

Generalisation / specialisation

- Inclusion (*Is A*)
- Division
- Constraint