RMM

The Relationship Management Methodology

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Intro

Hypermedia is different from software development:

- Hypermedia/Web development involve people with very different skills
- Hypermedia involves capturing and organizing the structure of a complex domain and making it clear and accessible to users
- Native features of hypermedia that are not part of typical software (linking, presentation)

Hypermedia design is more an art than a science

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Types of Applications

- The applications for which RMM is best suited exhibit a regular extructure:
  - Classes, relationships between classes, multiple instance objects for each class
- Volatile data that requires frequent updating
- RMM provides a framework for the design of such application

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RMDM

- RMM defines a data model (RMDM)
- RMDM is the cornerstone of the methodology
- Primitives:
  - Domain primitives
  - Associative Relationships

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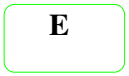
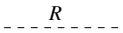
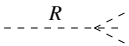
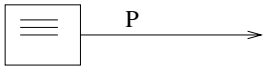
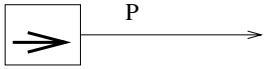
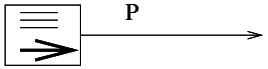
RMDM

E-R Domain Primitives	Entities  Attributes  One-One Associative Relationship  One-Many Associative Relationship 
RMD Domain Primitives	Slices 
Access Primitives	Uni-Directional Link Bi-Directional Link Grouping  Conditional Index  Conditional Guided Tour  **Conditional Indexed** Guided tour 

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Slices

- Entities might consist of a large number of attributes
- Slices show a subset
- They are meant to resemble pizza slices

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Navigation

Supported by six access structures:

- Unidirectional Link
- Bidirectional Link
- Grouping
- Conditional Index
- Conditional Guided Tour
- Conditional Indexed Guided Tour

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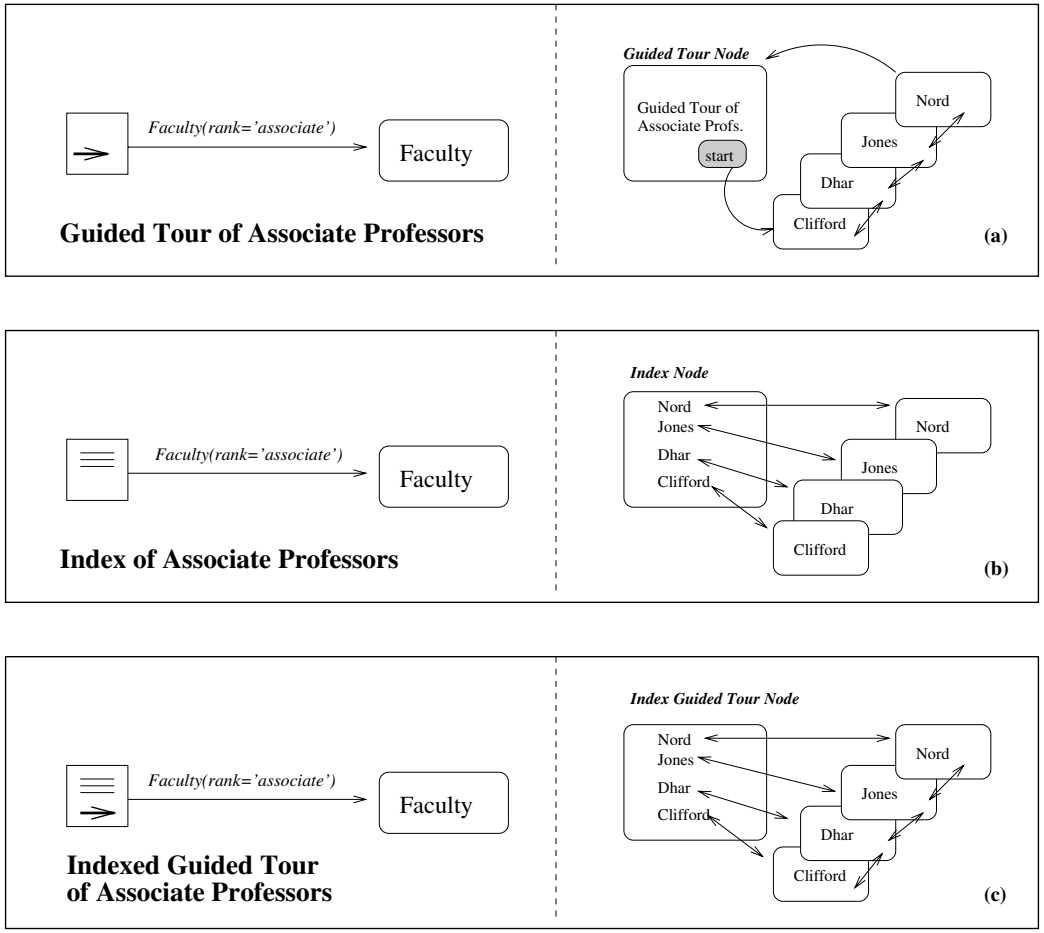
Example of a RMDM Diagram



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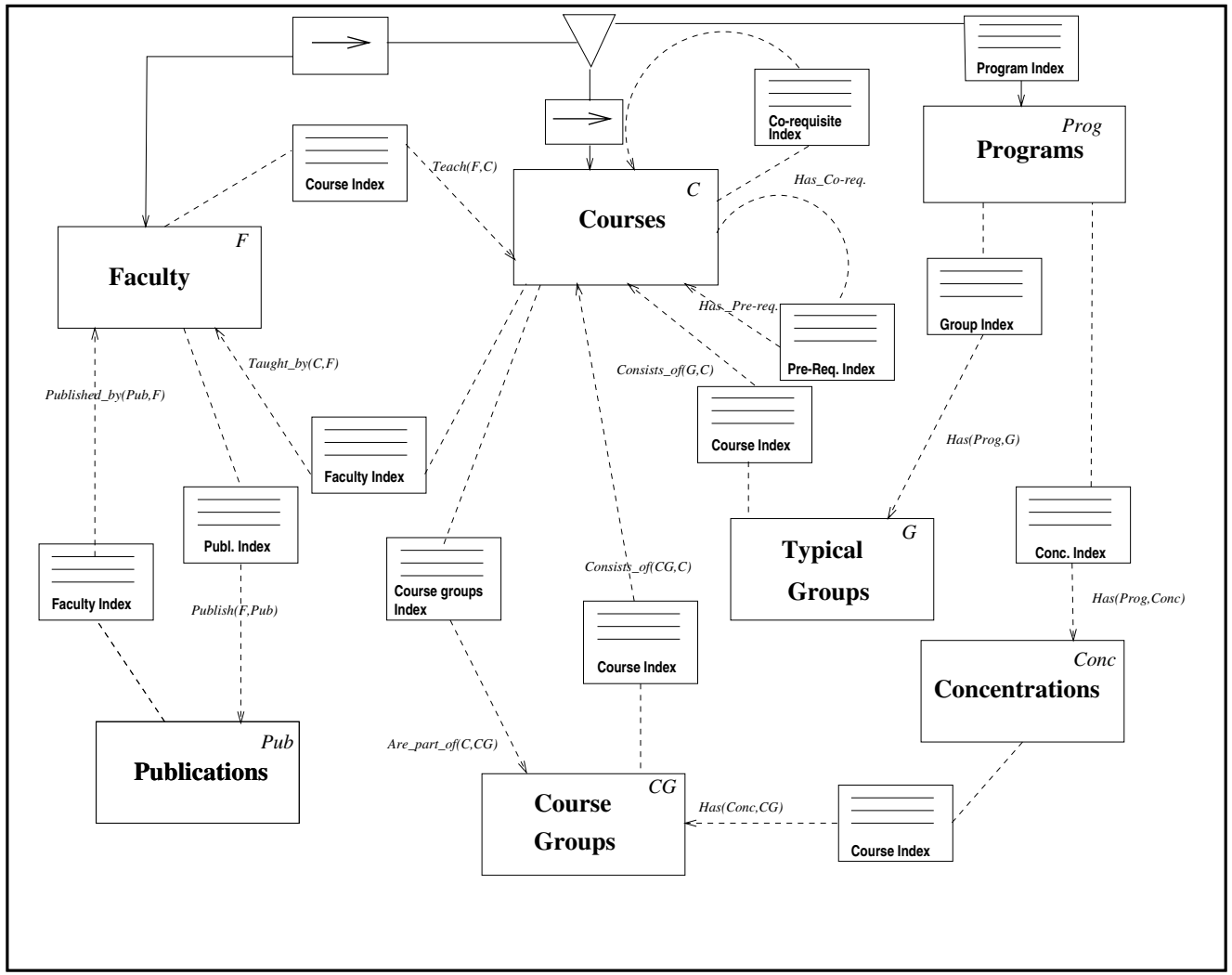
Conceptual Design



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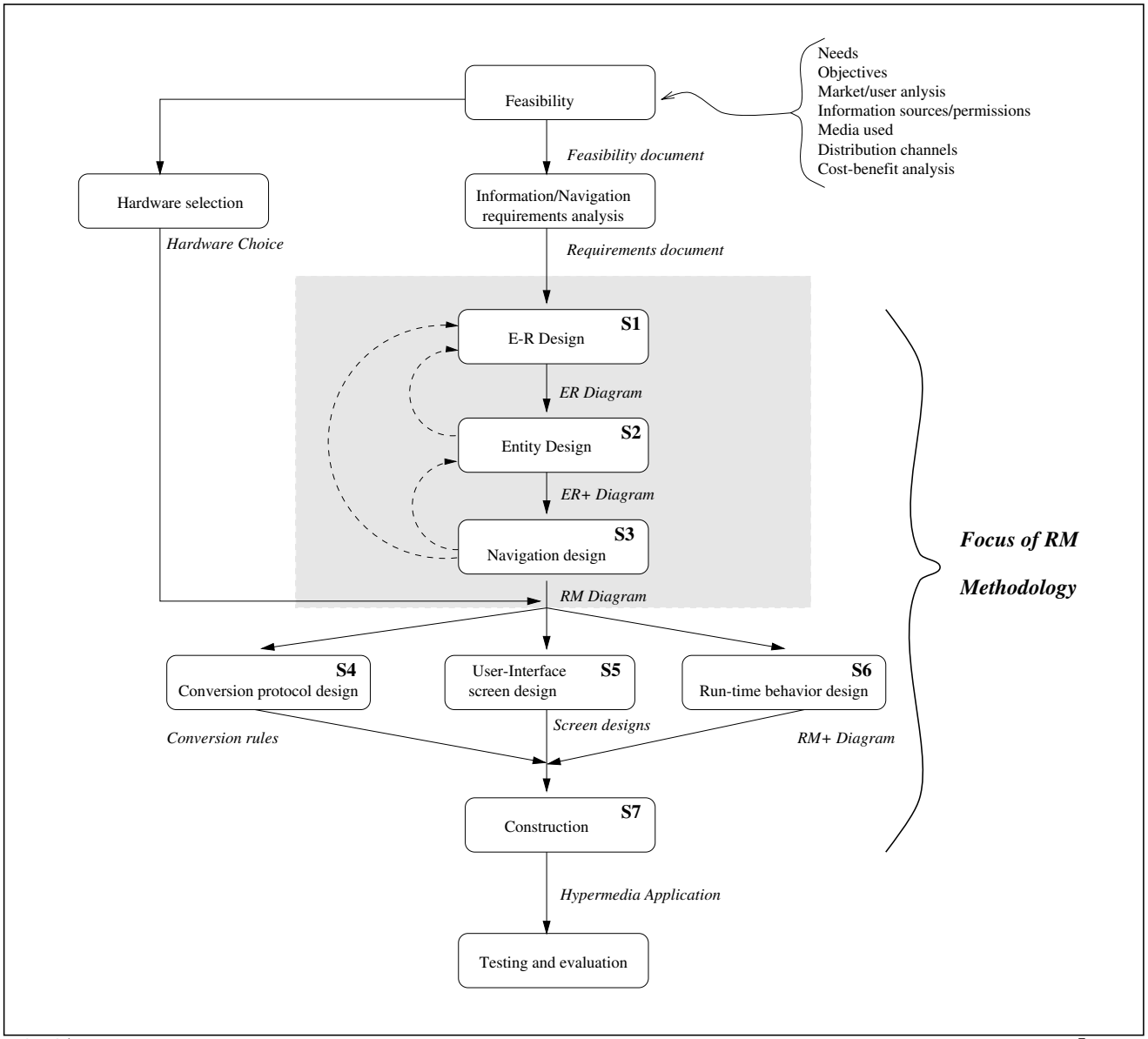
RMM Design Methodology



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RMM: Step S1 E-R Design

- First step, to represent the information domain
- Using an Entity-Relationship diagram
- Study of the relevant entities and relationships of the application domain
- Sometimes this diagram might already be available
- Make links between objects explicit: relationships

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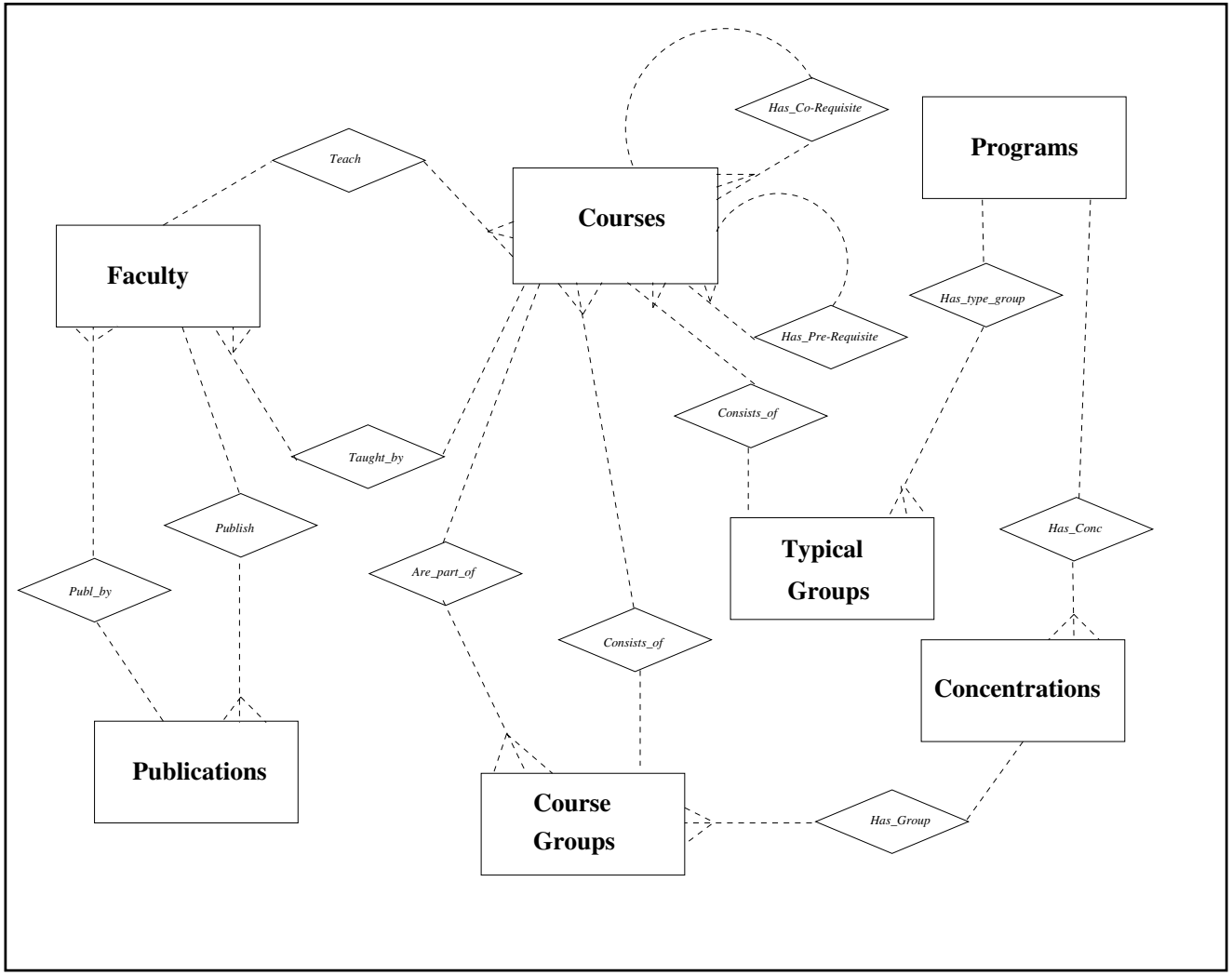
E-R Diagram



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Step S2: Slice Design

- Determines how the information in the chosen entities will be presented to the readers and how they might access it
- In the worst case, all the attributes of an object are presented to the reader at the same time
- For example: ’faculty’ slices:
  - General information
  - Biography
  - Research area

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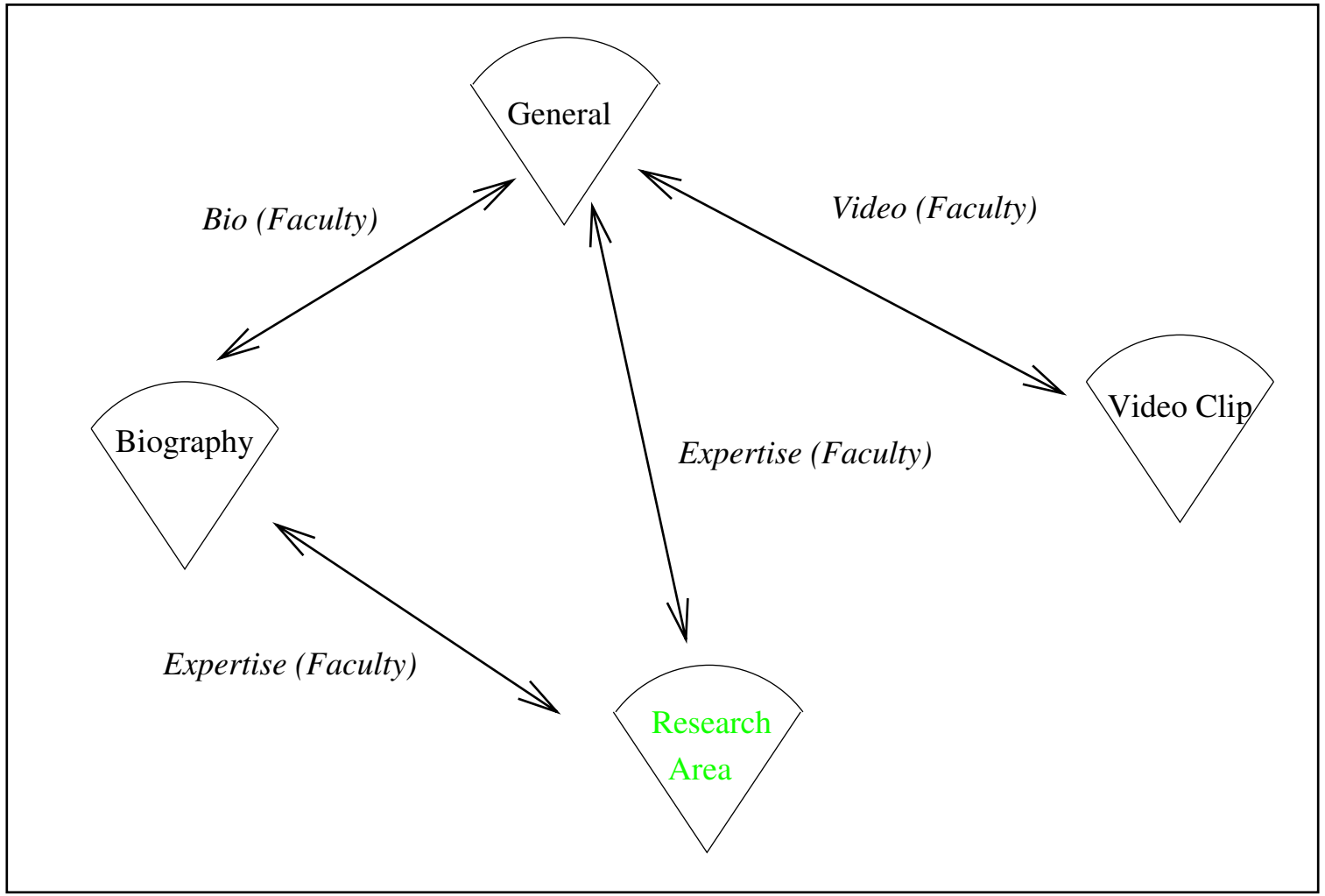
Slices



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Slice Design Phase

- Each entity is divided into slices
- There is always a default slice
- Links show the navigation between slices
- These links are called structural links
  - They connect information pieces within the same entity
  - Represented with continuous lines
- Other links are called associative relationships:
  - Connect different entities
  - Represented with Dashed lines

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Slice Design Phase...

- The output of this phase is an **enriched E-R+** diagram
  - E-R diagram +
  - Slice design diagram for each entity
- Four main considerations:
  - Dividing entities into slices
  - Choosing one slice as the head of the entity
  - Interconnecting slices
  - Labeling these links
- Remember: a slice represents a *whole* to the user

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Slice Design Phase...

- Choosing the head of the slice requires analysis of the domain
- The links reflect the need to connect more specialized slices to more general ones
- Choosing the labels for the link is important (they become anchors)

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S3: Navigational Design

- We design paths that enable hypertext navigation
- Each relation in the E-R diagram is analyzed:
  - If the relation is decided to be relevant then it is replaced by a one of the RMDM access structures
  - All navigational paths should be specified in generic terms i.e. properties of the entities and the relationships: conditional indices, conditional guided tours, coniditional indexed guided tours.

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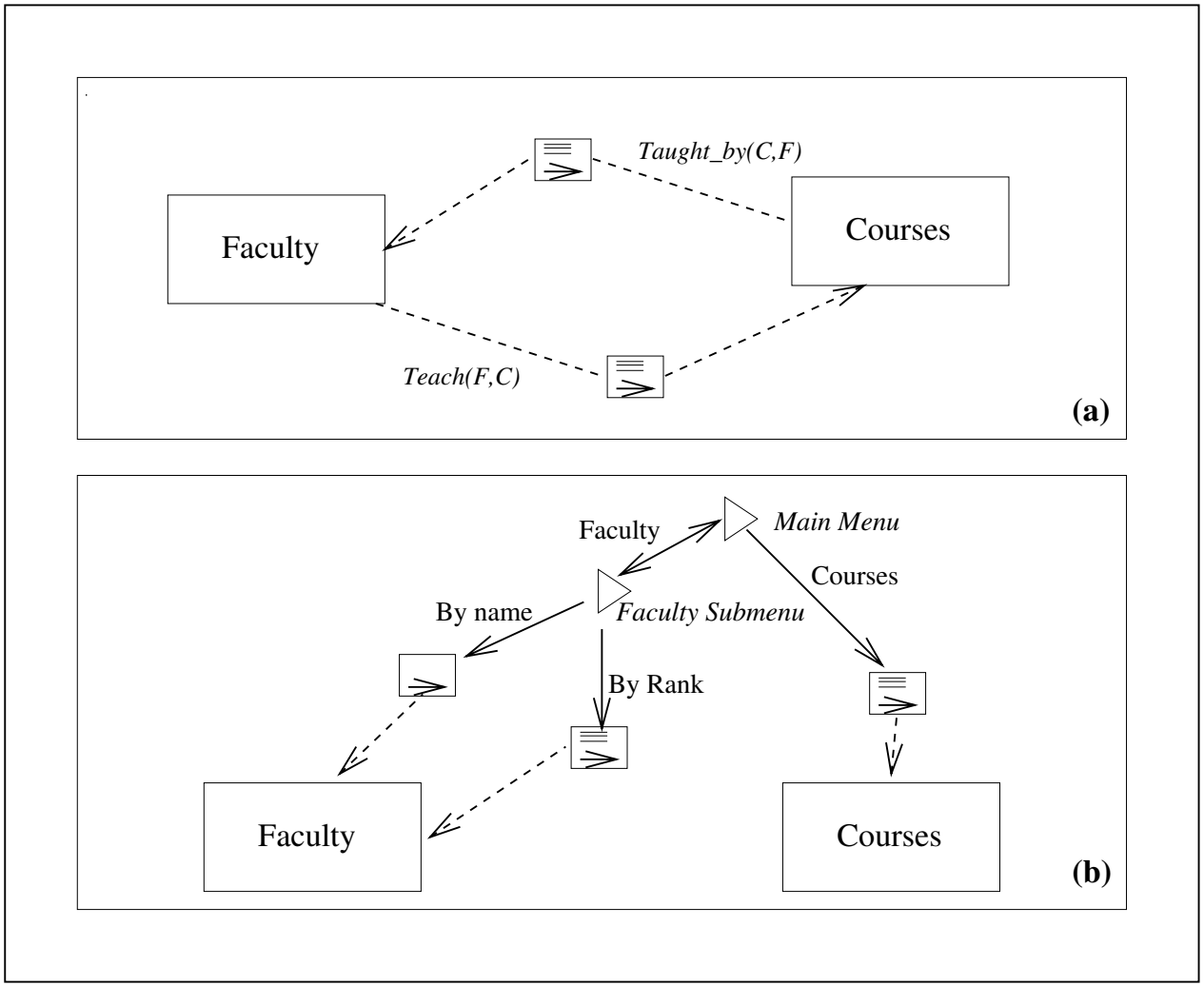
Navigational Design ...



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High Level Access Structures

- Next in the design is to create high level access structures by grouping items of interest
- Access structures enter, by default, an entity via its head slice
- At the end of the navigational design, the E-R+ diagram has been transformed to a RMDM diagram

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Step S4: Conversion Protocol Design

- Uses a set of conversion rules to transform each element of the RMDM diagram into an object in the target platform

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Last Steps

- S5 User Interface Design: Involves the creation of the screen layouts of the diagram created in S3
- S6 Run time behaviour design: are nodes static or dynamically generated?
- S7 Construction and testing

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