

Database Management Essentials

Developing Business Data Models

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Conceptual Data Modeling

Goals and Challenges

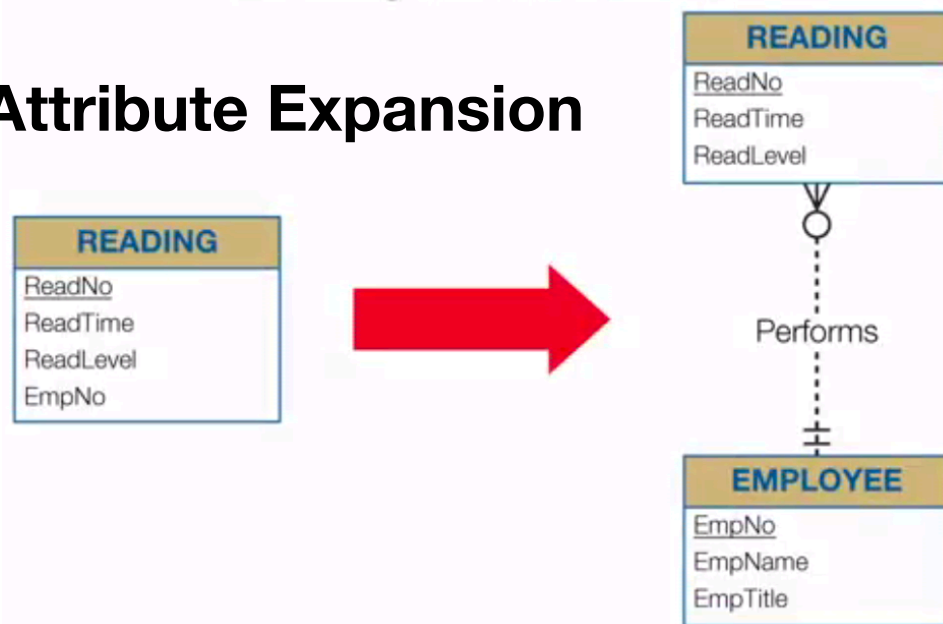
- Develop a Common Vocabulary: Unify Organization
 - Good DBA = Good Politician
 - 다양한 사용자들의 상충되는 의견을 조율해서
 - 가장 적은 사람들이 싫어하는 (least objectionable) 방안 찾기
- Define Business Rules
 - 조직 정책 + 예외 케이스를 서포트
 - "적당히"를 찾아야 한다
 - Too restrictive: Reject valid business interactions
 - Too loose: Allow erroneous business interactions
- Ill Defined Problems: 원래 지저분하고 어려운 일이다
 - Conflicting + Incomplete requirements
 - Diverse stakeholders and formats
 - Irrelevant details

Analyzing Narrative Problems

- Goals: 말(narrative)을 듣고 설계하기
 - Consistency with narratives
 - Identify deficiencies
 - Prefer simpler design
- Steps
 - Identify entity types and attributes
 - Determine PKs (for entity type identification)
 - Stable: "PK should never change"
 - Single purpose: 오직 identification을 위해서만 (e.g. auto-generating numbers)
 - Connect entity types: Min/max cardinality 정하기

Design Transformations

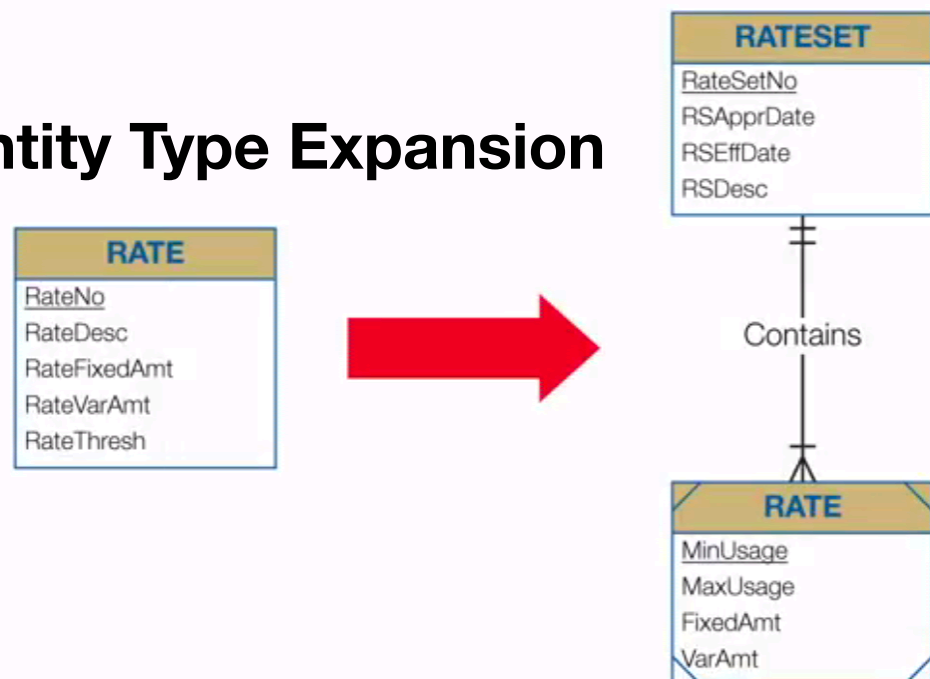
Attribute Expansion



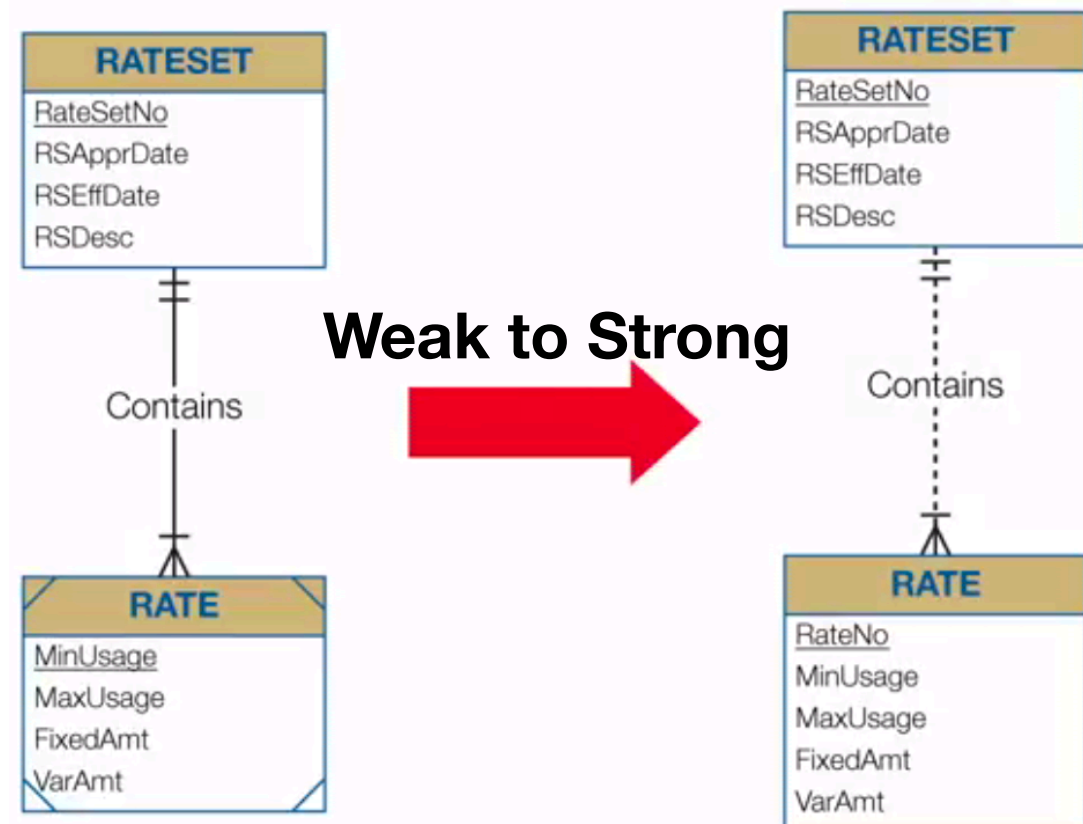
Compound Attribute Split



Entity Type Expansion

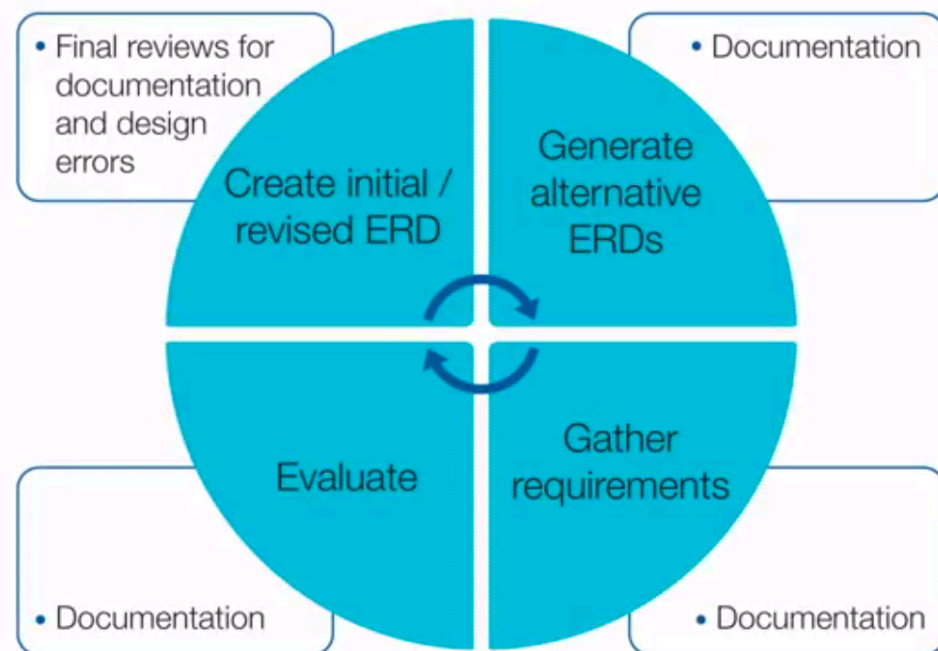


Weak to Strong

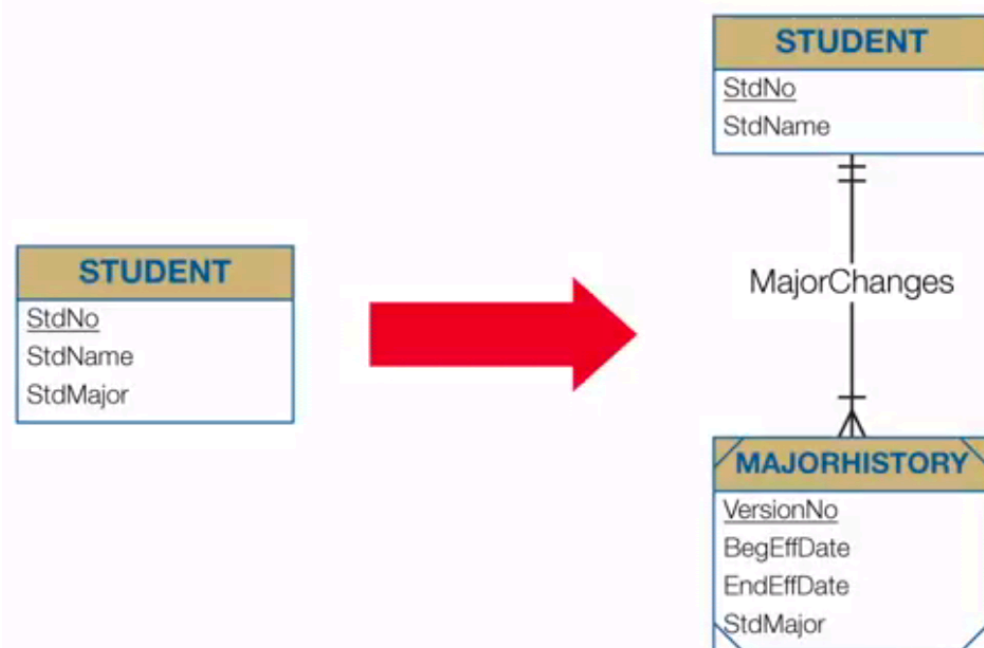


Design Transformations

Diagram Refinement



Attribute History Transformation



Reverse Transformations

- 단순화 작업,
지금까지 했던 변환을 반대로 하면 됨
- Contract Entity Type
↔ Attribute Expansion
- Combine Attributes
↔ Compound Attribute Split
- Contract Entity Type Structure
↔ Entity Type Expansion
- Strong to Weak ↔ Weak to Strong
- Remove History ↔ Add History