

On Business Rules Implications in ORM

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Some diagrams in this lecture are based on [1]

Keywords: subtype, subclass, subset, concept, instance, Rules, Business Rules, Business logic derivation rules, integrity constraints

Conceptual Schema Design Steps

1. From examples to elementary facts



2. Draw fact types and apply population check



3. Combine entity types



4. Add uniqueness constraints



5. Add mandatory constraints



6. Add subtype relations and other constraints



7. Final checks, & schema engineering issues



Constraint Implications (Examples)

Some rules may imply each other.

The implied constraint should be removed.

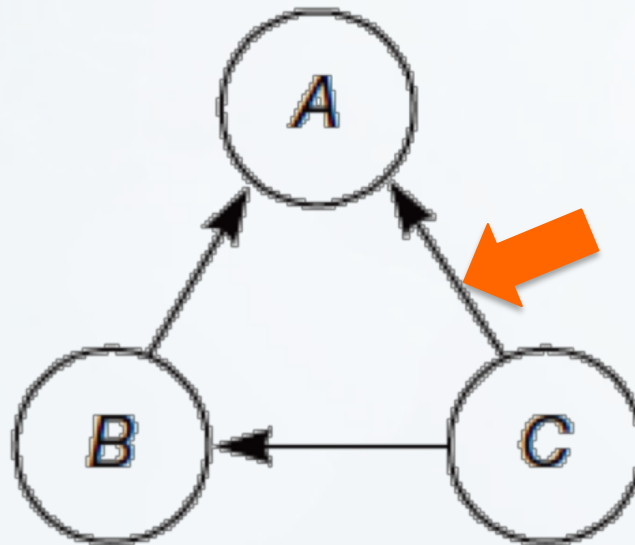
Keeping implied rules is computationally expensive for machines, and conceptually complicates the model -without bringing any value.

There are some reasoning tools nowadays to detect implications automatically (using description logic), but this depends on the modeling language.

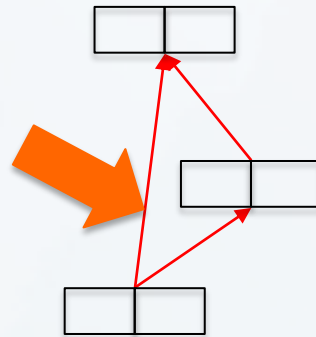
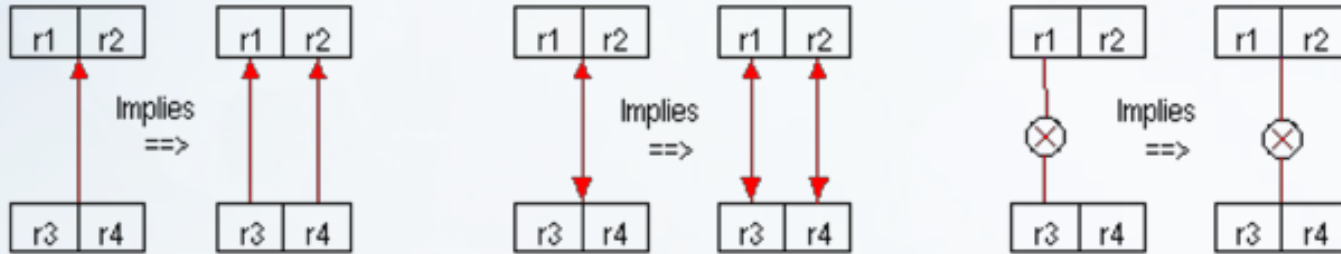
ORM/UML/EER tools currently do not support automatic detection of implications, except some some research prototypes (e.g., DogmaModeler).

→ One should train him/herself to detect implications

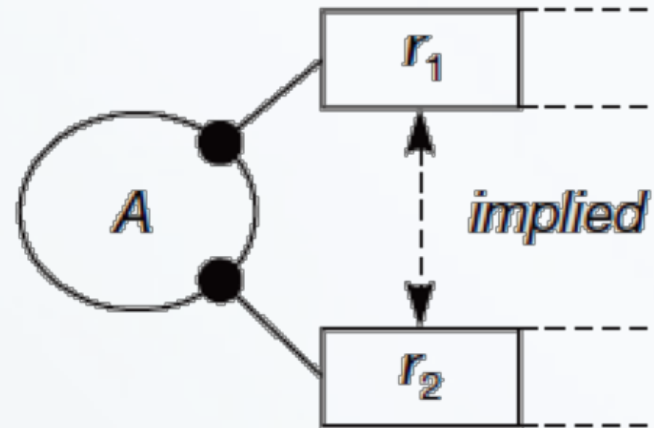
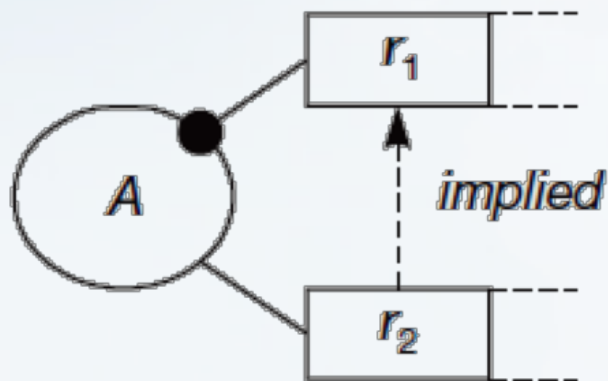
Implication between Subtypes



Implications between set rules



Implications between different Types of Rules



➔ Many different examples are given in previous chapters, and there others...!

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