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Database Systems

Concepts, Languages and Architectures

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Chapter 7

Logical design

Database Systems

Concepts,
Languages
and
Architectures

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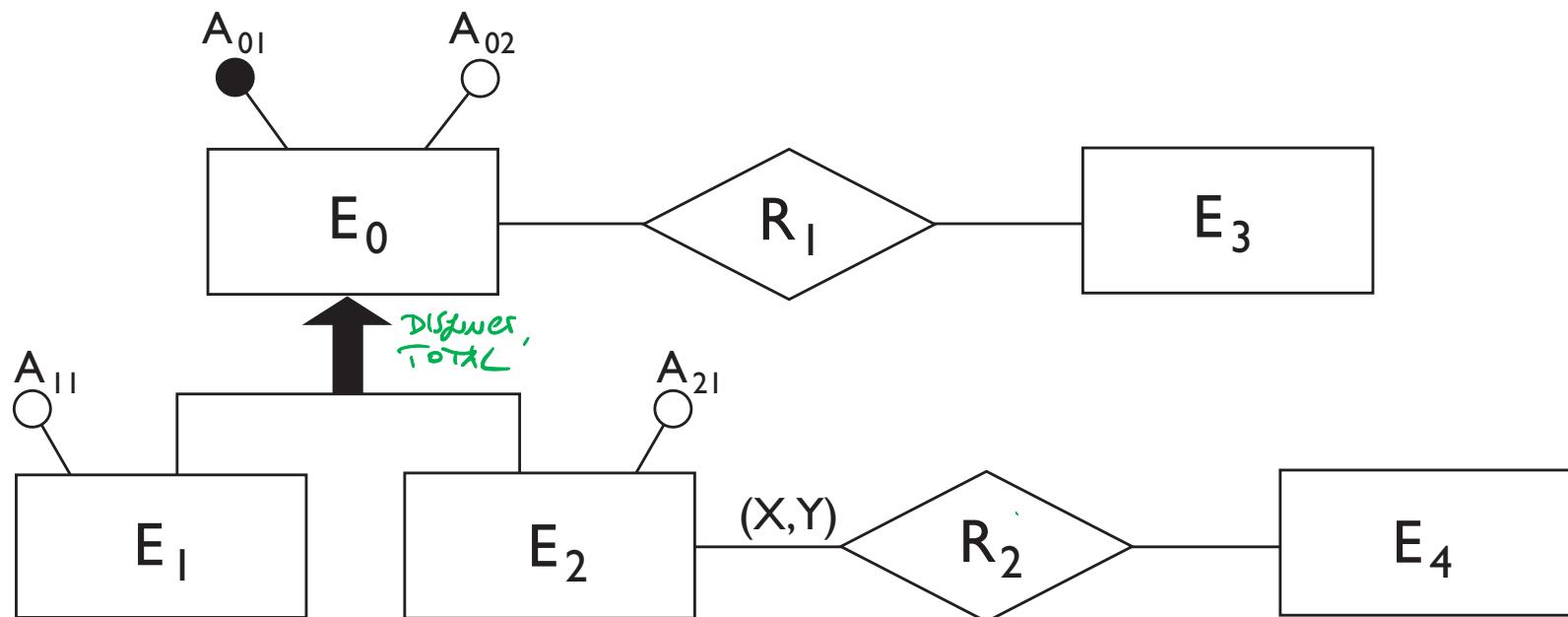


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Removing generalizations

- The relational model does not allow the direct representation of generalizations of the E-R model.
- We need, therefore, to transform these constructs into other constructs that are easier to translate: entities and relationships.

Example of a schema with generalization

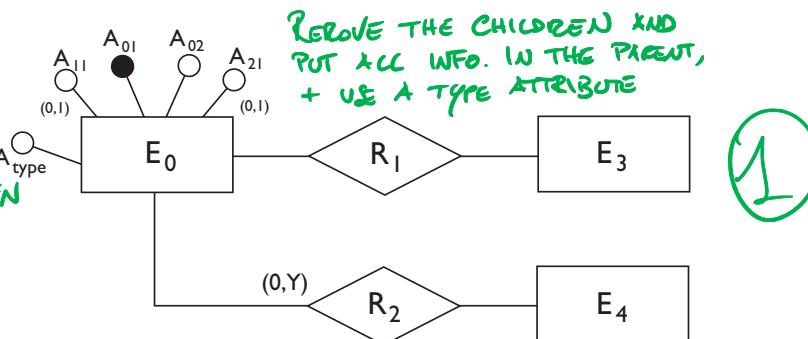


Possible restructurings of the previous schema

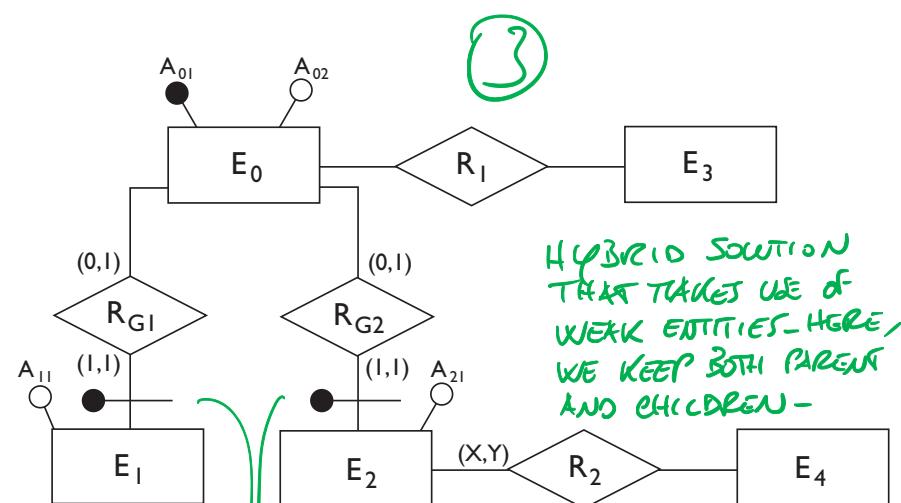
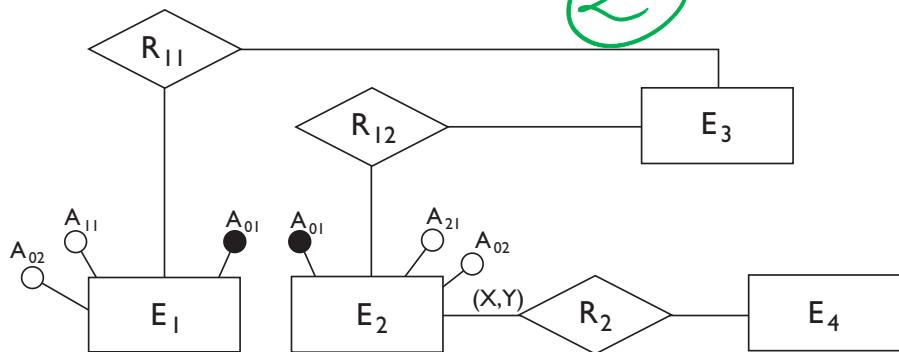
IF THE SPECIALIZATION IS TOTAL I HAVE SEVERAL OPTIONS - THE FINAL CHOICE FOR THE RESTRUCTURING DEPENDS ON

THE OPERATIONS THAT ARE EXPECTED TO BE PERFORMED ON THE DB

THE # OF ATTRIBUTES AND RELATIONSHIPS OF THE PARENT AND THE CHILDREN



REMOVE PARENT AND MOVE ALL TO THE CHILDREN - YOU CAN ONLY DO THIS IF THE SPECIALIZATION IS TOTAL -



OBserve that these two weak entities have no partial view attributes

General rules about generalization removal

- Option 1 is useful when the operations involve the occurrences and the attributes of E_0 , E_1 and E_2 more or less in the same way.
- Option 2 is possible only if the generalization is total and is useful when there are operations that refer only to occurrences of E_1 or of E_2 , and so they make distinctions between these entities.
- Option 3 is useful when the generalization is not total and the operations refer to either occurrences and attributes of E_1 (E_2) or of E_0 , and therefore make distinctions between child and parent entities.
- The various options can be combined.

Possible restructuring of the previous schema

