

These slides are for use with

Database Systems

Concepts, Languages and Architectures

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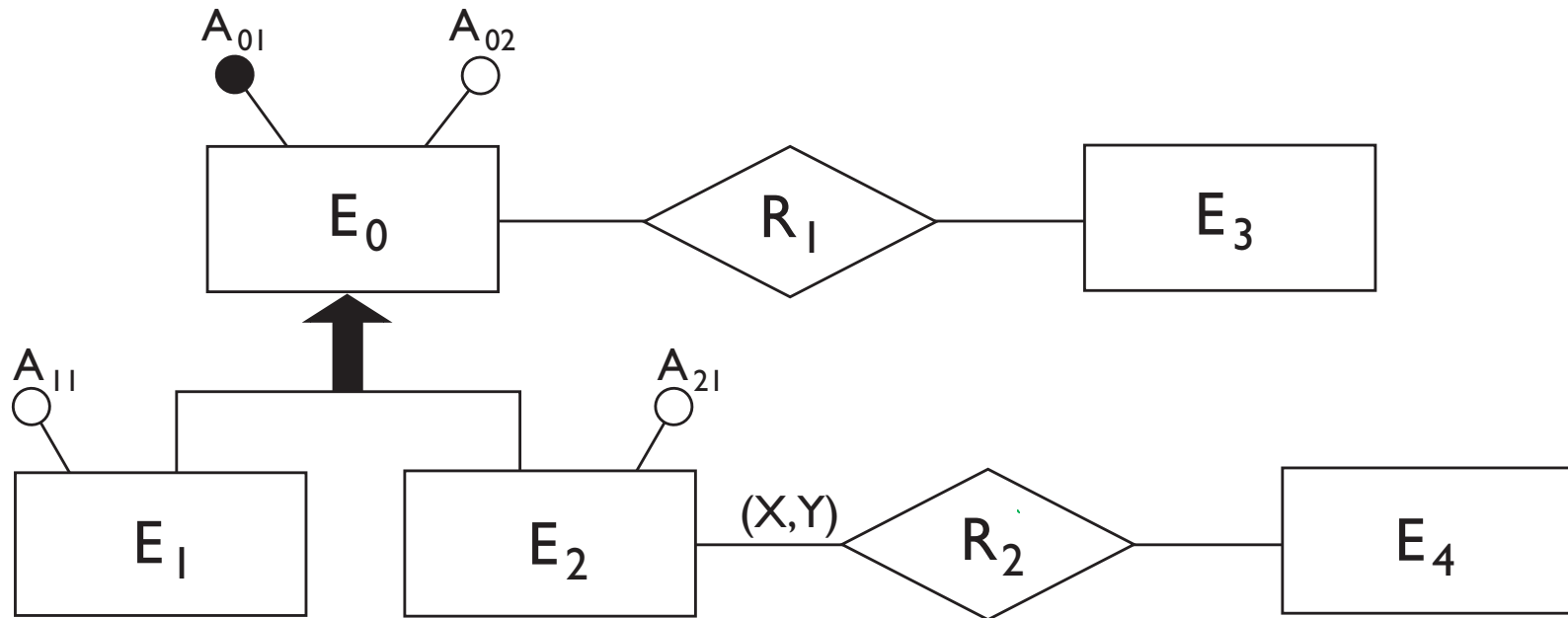
Press the 'return' or 'enter' key to continue . . .



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

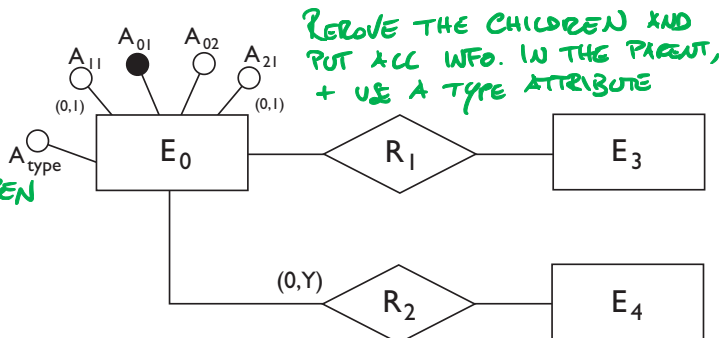


Possible restructurings of the previous schema

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

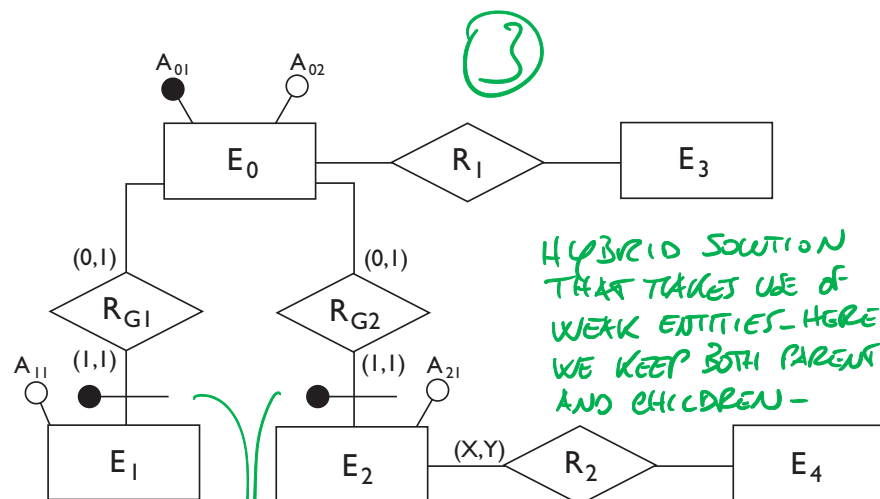
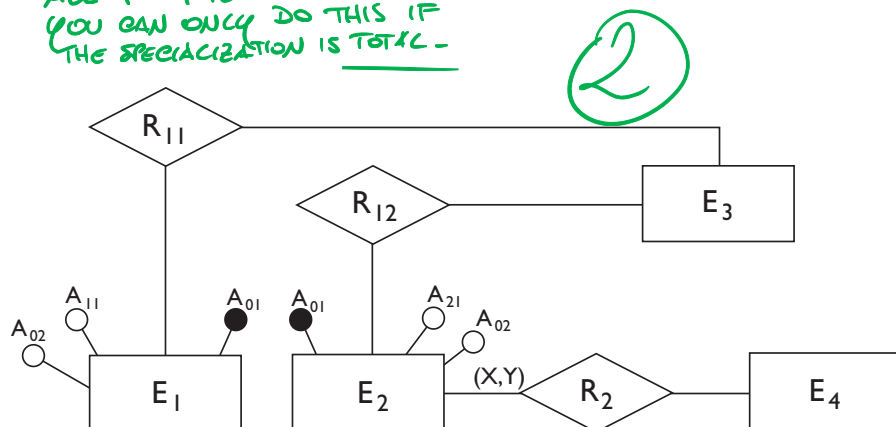
THE QUERIES THAT ARE EXPECTED TO BE PERFORMED ON THE DB

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



①

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



HYBRID SOLUTION THAT TAKES USE OF WEAK ENTITIES - HERE, WE KEEP BOTH PARENT AND CHILDREN -

WE OBSERVE THAT THESE TWO WEAK ENTITIES HAVE NO PARTIAL KEY 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.