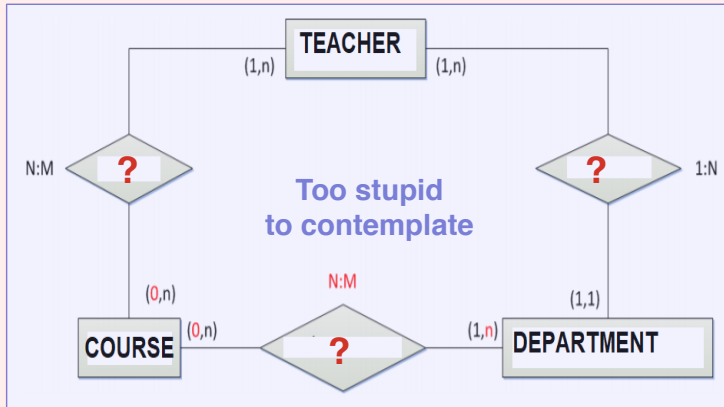
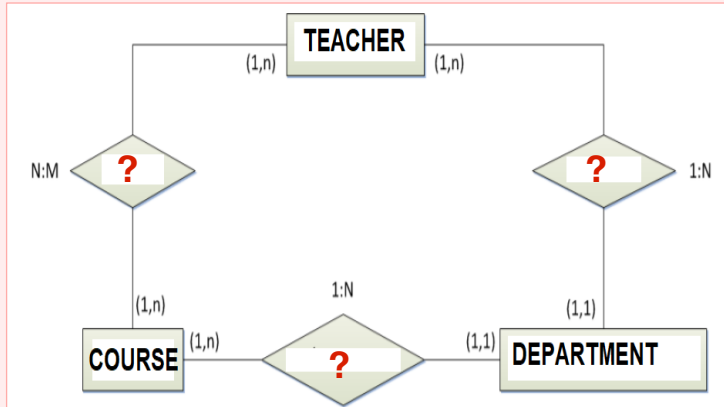
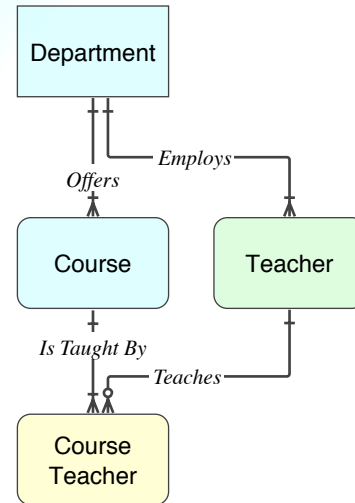


ERD (Obsolete in 1983)



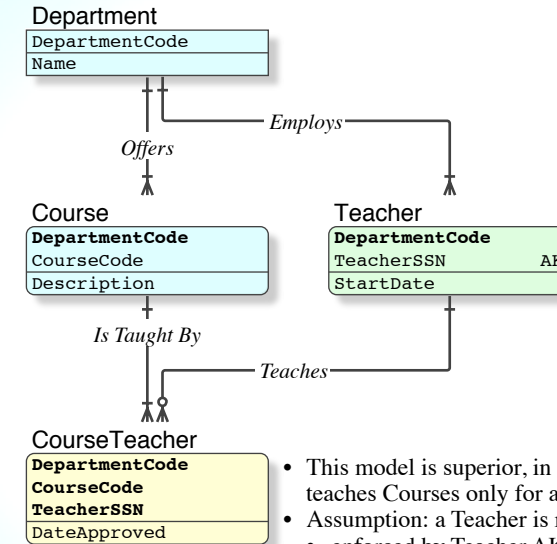
- Really. Since when can a Course be administered; controlled; taught by more than one Department or Faculty.

IDEF1X • Entity Level



- IDEF1X demands the distinction of entities: Independent vs Dependent
- Dependence (ownership) is denoted by an Identifying relation (solid line) and round corners
- A dashed line denotes a Non-Identifying relation.

IDEF1X • [Key &] Attribute Level



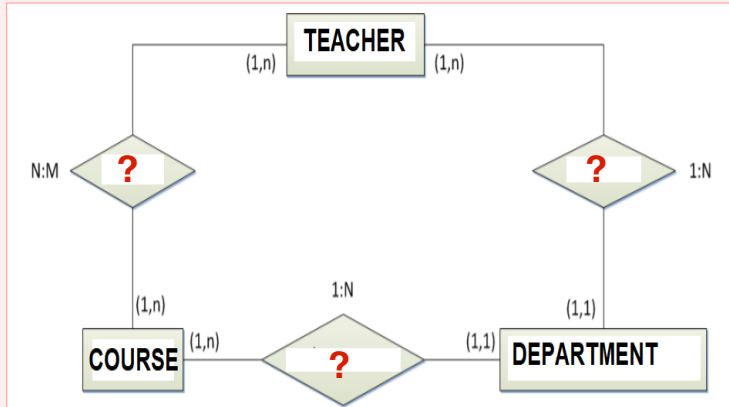
- This model is superior, in that it ensures that a Teacher teaches Courses only for a Department that he is registered in
- Assumption: a Teacher is resgistered to one Department only
 - enforced by Teacher.AK
 - to allow a Teacher to work for more than one Department, simply remove the AK
- This model shows the minimum required to satisfy the exercise

Entity Type

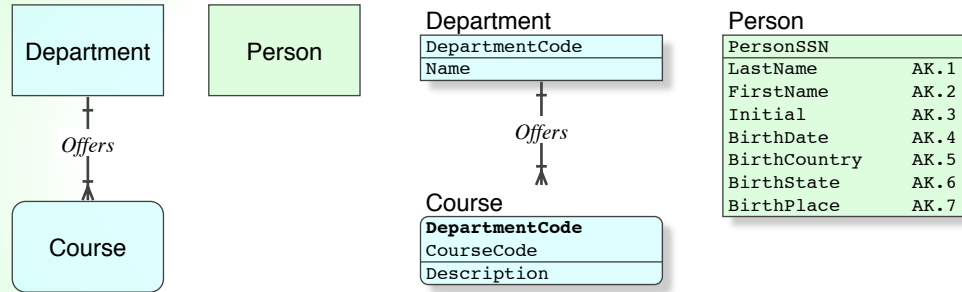
- Reference/Major
- Reference/Simple
- Identifying
- Transaction, Binary
- TransactionDetail

IDEF1X Notation

ERD (Obsolete in 1983)

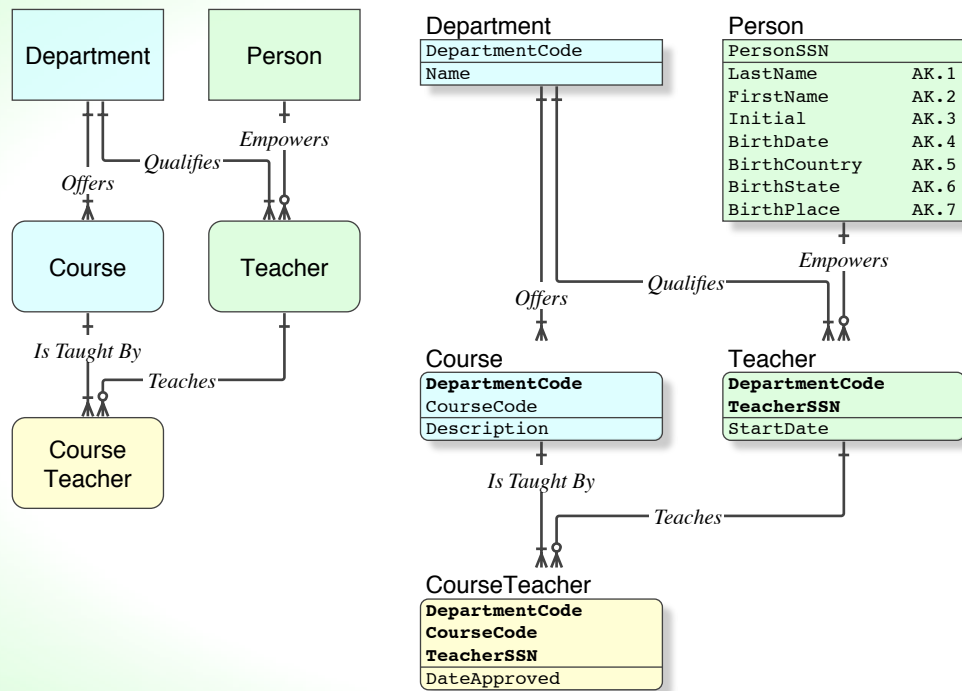


First Wave[Tree] for Understanding



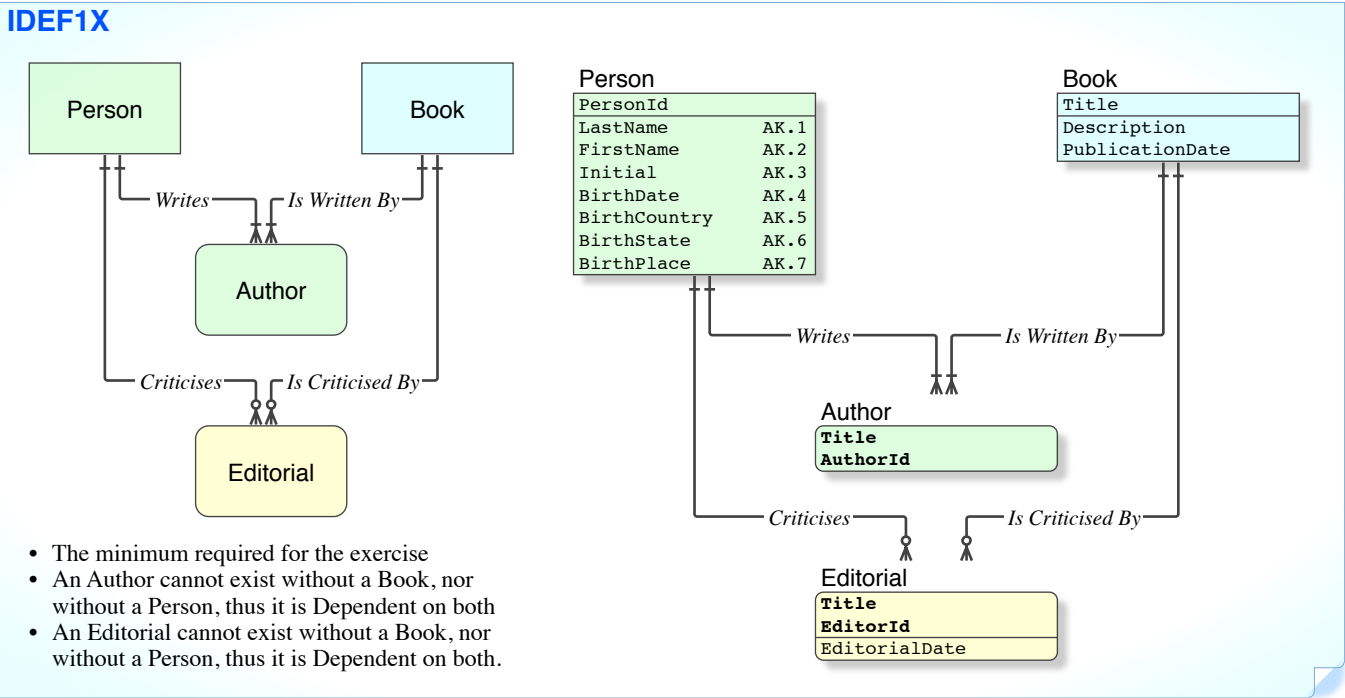
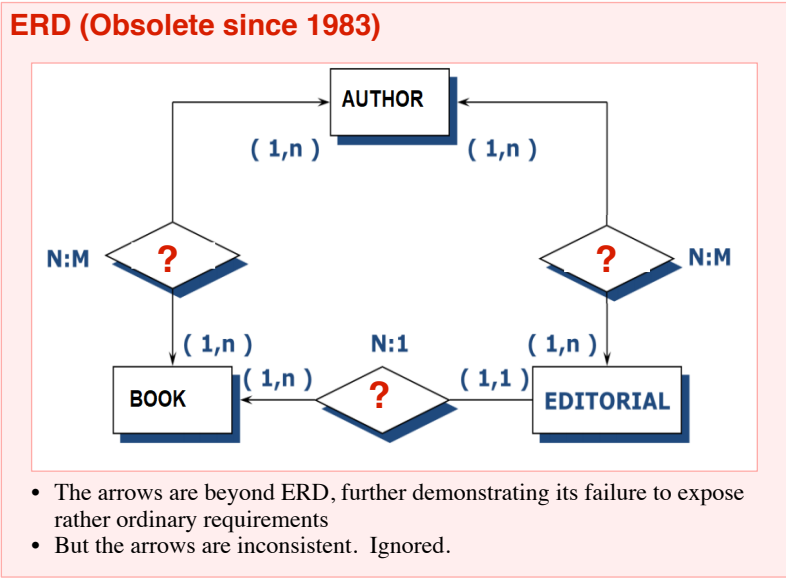
- This model renders the facts in the real world, more correctly than the minimum required to satisfy the exercise
- Complying with the Normal Forms in the *Relational Model*, the first wave consists of establishing the Data Hierarchies, into Tree] (Directed Acyclic Graphs)
- These are the major Identifying articles that later articles will depend upon
- Department and Person exist Independently.
- A Course cannot exist Independently, it exists only in the context of a Department or Faculty. Thus it is Dependent, and the relation is Identifying.

Second Wave[Binary] for Understanding



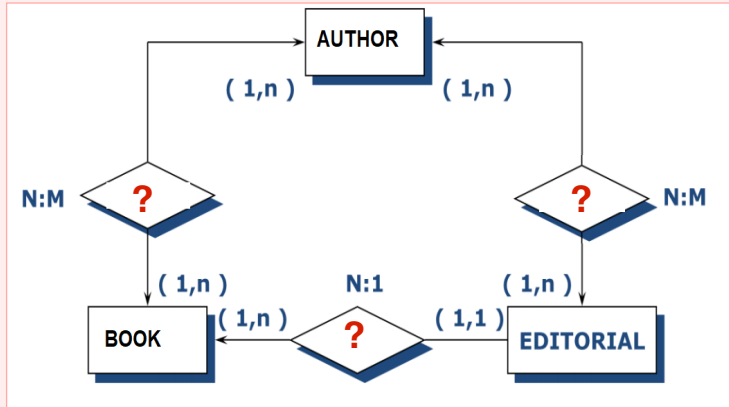
- Once the Data Hierarchies have been established, the Transactions between them can be determined
- These articles are, of course, Binary] that join two Data Hierarchies. As such, compliance with the Tree NF in the First Wave cannot be had, it is not expected
- A Teacher is a Person who is qualified to teach in a particular Department, which may be more than one
- A CourseTeacher is a Course that is taught by a Teacher, who is qualified to teach, in the same Department.

- Entity Type
- Reference/Major
 - Reference/Simple
 - Identifying
 - Transaction, Binary
 - TransactionDetail

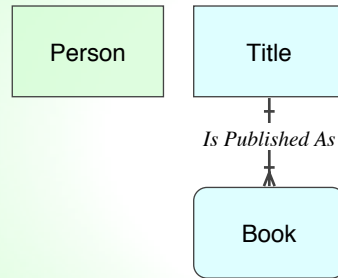


- Entity Type**
- Reference/Major
 - Reference/Simple
 - Identifying
 - Transaction, Binary
 - TransactionDetail

ERD (Obsolete since 1983)



First Wave[Tree] for Understanding



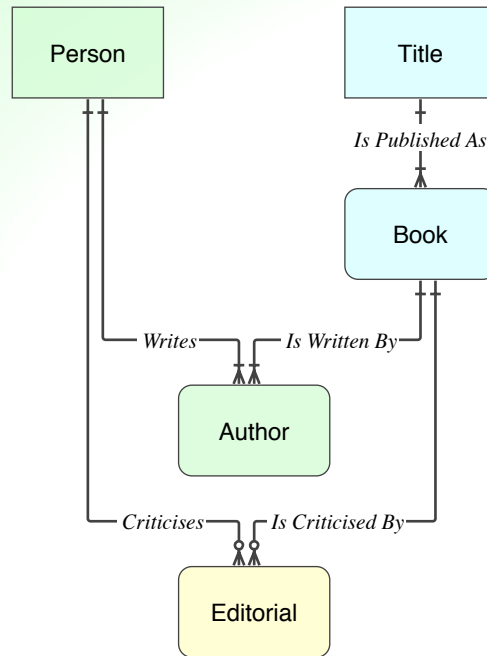
Person	
PersonId	
LastName	AK.1
FirstName	AK.2
Initial	AK.3
BirthDate	AK.4
BirthCountry	AK.5
BirthState	AK.6
BirthPlace	AK.7

Title	
Title	
Description	
PublicationDate	

Book	
Title	
Version	
PublicationDate	

- A bit more real world, this registers the [actual] facts that occur in reality
- Complying with the Normal Forms in the *Relational Model*, the first wave consists of establishing the Data Hierarchies, into Tree] (Directed Acyclic Graphs)
- These are the major Identifying articles that later articles will depend upon
- A Person exists Independently
- A Title may be published in more than one Version. A Book is a particular Version of a Title.

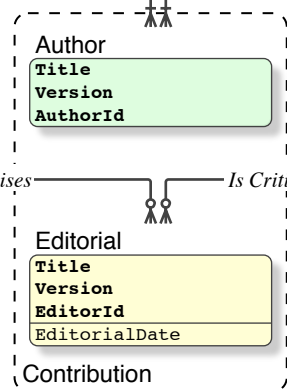
Second Wave[Binary] for Understanding



Person	
PersonId	
LastName	AK.1
FirstName	AK.2
Initial	AK.3
BirthDate	AK.4
BirthCountry	AK.5
BirthState	AK.6
BirthPlace	AK.7

Title	
Title	
Description	
PublicationDate	

Book	
Title	
Version	
PublicationDate	



- Nicola's proposed concept of **Contribution** is a View, the union of Authorship and Editorship, it is not a discrete fact.

- Once the Data Hierarchies have been established, the Transactions between them can be determined
- These articles are, of course, Binary] that join two Data Hierarchies. As such, compliance with the Tree NF in the First Wave cannot be had, it is not expected
- An Author is a Person who writes at least one Book (Person is populated with Authors only). The concept of Author is not Independent
- An Editorial cannot exist Independently, it exists only in the context of a Book [that it is an Editorial of], and a Person [who is an Author]
- The relation Editorial::Book in the broken ERD is Person:Book here.

- Entity Type
- Reference/Major
 - Reference/Simple
 - Identifying
 - Transaction, Binary
 - TransactionDetail