

ER-Diagrams Definition:

They provide a way to pictorially depict the entities, attributes and relationships. –

These are also called semantic networks.

- There are three elements of the ER-Diagram – Entities are represented by labeled rectangles.

The label is the name of the entity.

- Attributes are represented by oval boxes and contain the name of the entity

- Relationships are represented by a diamond connected to the two entities using solid lines (cardinality of many is represented by an infinity sign, cardinality of 1 is represented by a 1)

- Weak entities are represented by a rectangle curved at the corners and the relationship triangle curved at the corners

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Book Database:

Among book authors there are people who are not primary authors but are contributors. – e.g. illustrators, indexers etc. – Each has a different level based on the contribution

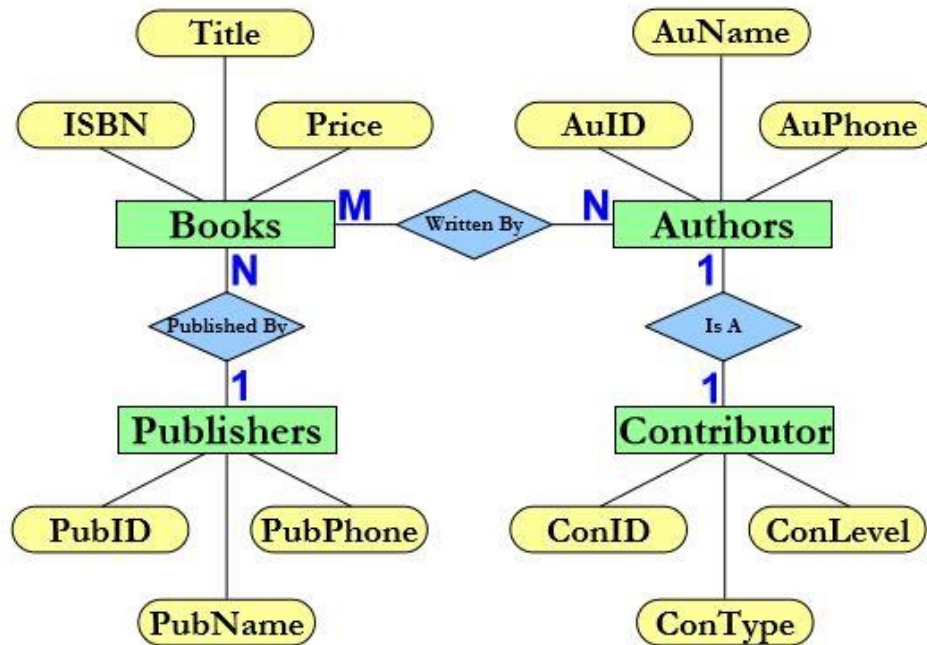
- A separate entity can be used to represent contributors – Attributes: Level and Type.

- Let us now define the relationships. – A Book is written by authors – A Book is published by a publisher – A Contributor is an author

- Once this semantic model is created we need to create a relational database with this semantic model

E-R Diagrams

Book Database

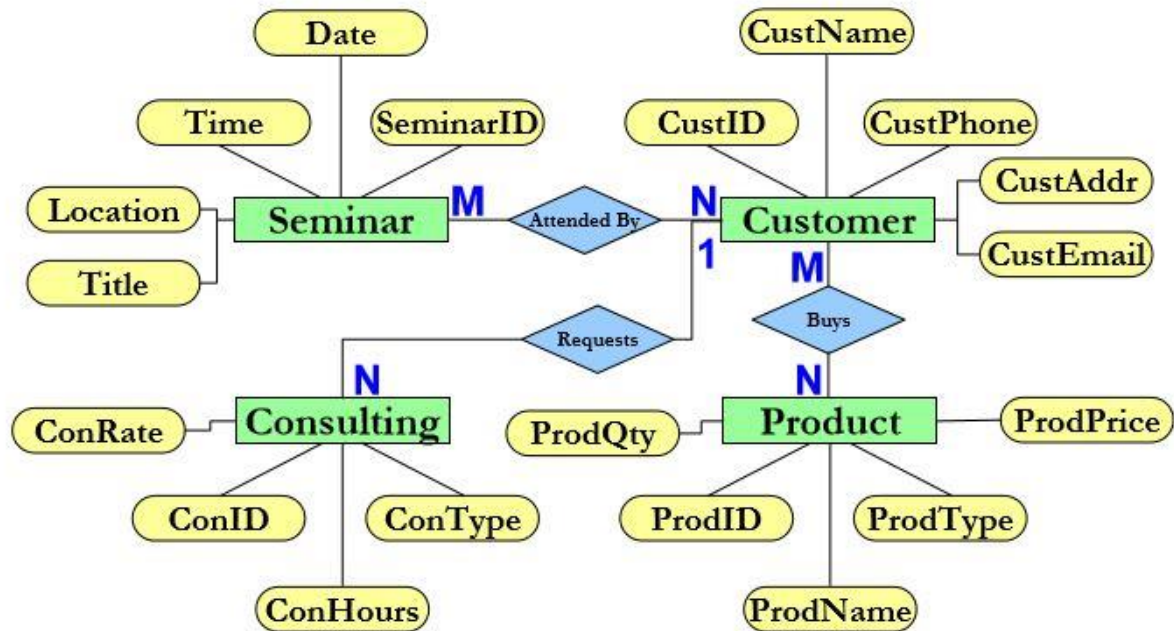


Interior Designer:

An interior designers who specializes in home kitchen designs offers a variety of seminars at home shows, kitchen and appliance stores, and other public locations. The seminars are free; she offers them as a way of building her customer base. She earns revenue by selling books and videos and instructs people on kitchen design. She also offers custom-design consulting services. Her business is in selling products to the attendees at her seminars. She would like to develop a database to keep track of customers, the seminars that they have attended, and the purchases that they have made. Please determine the entities, attributes and relationships that should exist in the database and draw an E-R diagram.

E-R Diagrams

Interior Designer

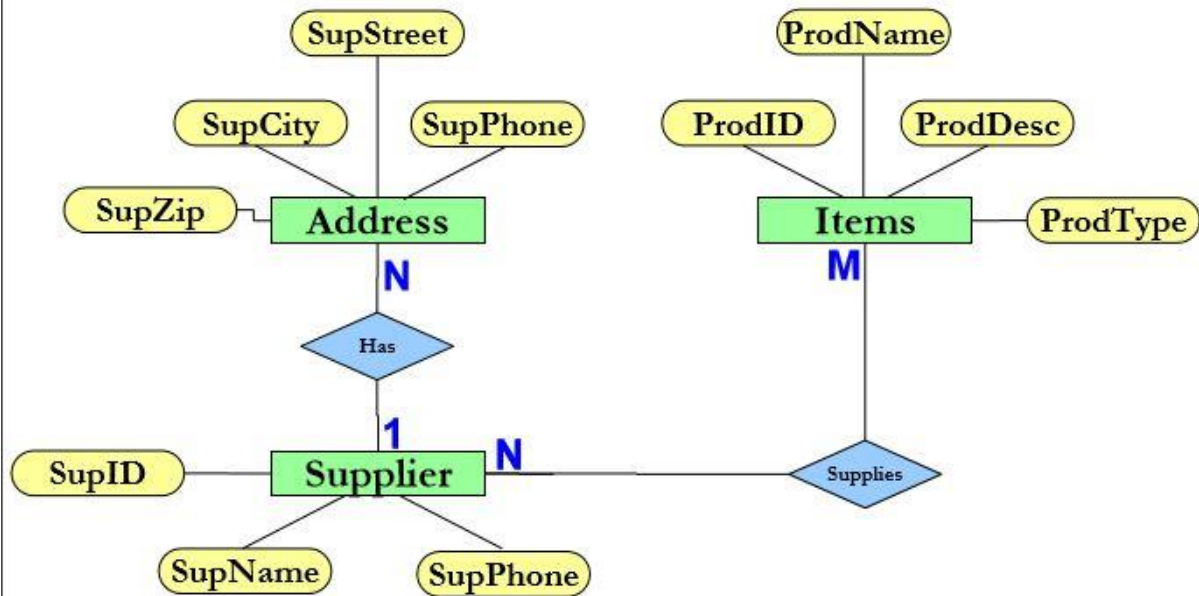


Supplier:

An organization purchases items from a number of suppliers. It keeps track of the items purchased from each supplier, and it also keeps a record of suppliers' addresses. Items are identified by ITEM-TYPE and have a DESCRIPTION. There may be more than one such address for each supplier, and the price charged by each supplier for each item is stored. Suppliers are identified by SUPPLIER-ID.

E-R Diagrams

Supplier (Base)



Hospital:

A hospital stores data about patients, their admission and discharge from departments and their treatments. For each patient, we know the name, address, sex, social security number, and insurance code (if existing). For each department, we know the department's name, its location, the name of the doctor who heads it, the number of beds available, and the number of beds occupied. Each patient gets admitted at a given date and discharged at a given date. Each patient goes through multiple treatments during hospitalization; for each treatment, we store its name, duration, and the possible reactions to it that the patient may have.

Hospital

