

## DBMS

### Component within a relational data model

Followings are important component . They are : entity, attributes, values, key attributes and records

(a) **Entity** : The entity is a place, person, thing, event etc about which the information is recorded. Examples are customer, bank account etc

(b) **Attributes** : The attribute characterize the entity or describe the entity meaningfully.

Example is that if house is an entity, then its attributes are color, number, owner etc

(c) **Values** : Each attribute of an entity has a value and is known as a data value. The data value could be quantitative or descriptive, depending upon the attributes. That is, the size of the house will be the area and hence quantitative while the construction quality would be qualitative. The attributes could have a single value or multiple values.

(d) **Key attributes** : Some attributes can be a key attributes of an entity. Using this key attribute, we can find the values of other attributes. For example, customer number is an attribute of an entity “customer”. From this key, we can find the name of the customer, his address and account balance.

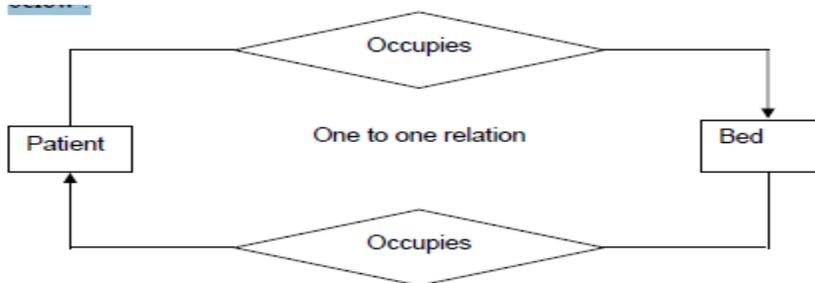
(e) **Record** : The record is a collection of the attributes of an entity. The set of the attribute values is called as a record

## Relationship in Relational Model

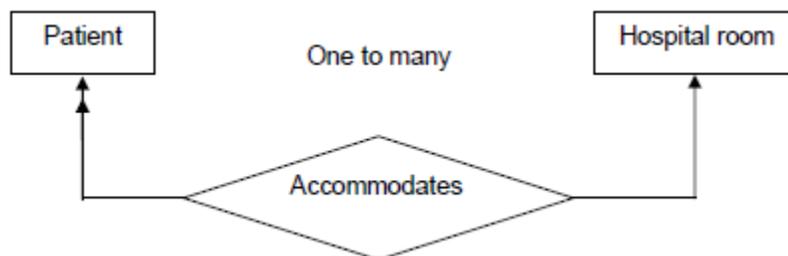
There are 3 types of relationships between entities. They can be shown in an entity-relation diagram. Also known as E-R diagram.

- (a) one-to-one
- (b) one to many
- (c) many to many

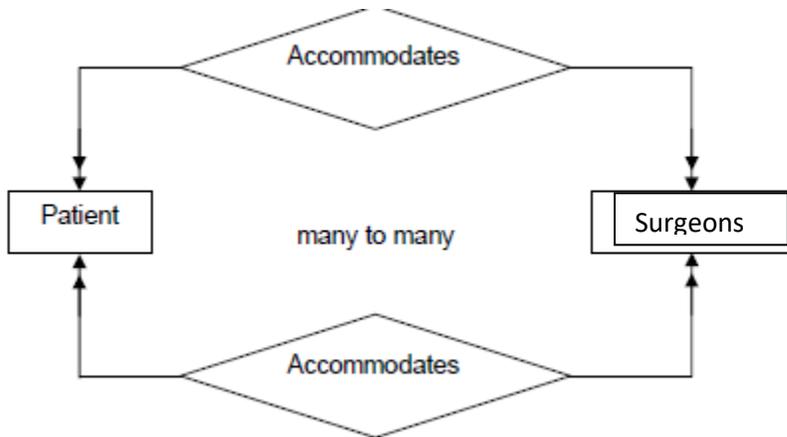
Let us take the hospital environment to understand the relation types. The patient, bed, hospital room and surgeon are the entities in the environment and their relations are as shown below :



At a given point of time, a patient occupies a bed or a bed is assigned to a patient. Since the patient cannot occupy more than one bed, the relationship is one to one.



At a given point of time, one or more patients are assigned to a hospital room, hence the relationship between the hospital room and the patients is one to many.



A surgeon operates on many patients or a patient may have been operated upon by many surgeons. Hence, the relationships both ways is many to many.

The relationships are built on the assumption that the patient, hospital room, surgeon and hospital bed have unique key as the identifiers.

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