

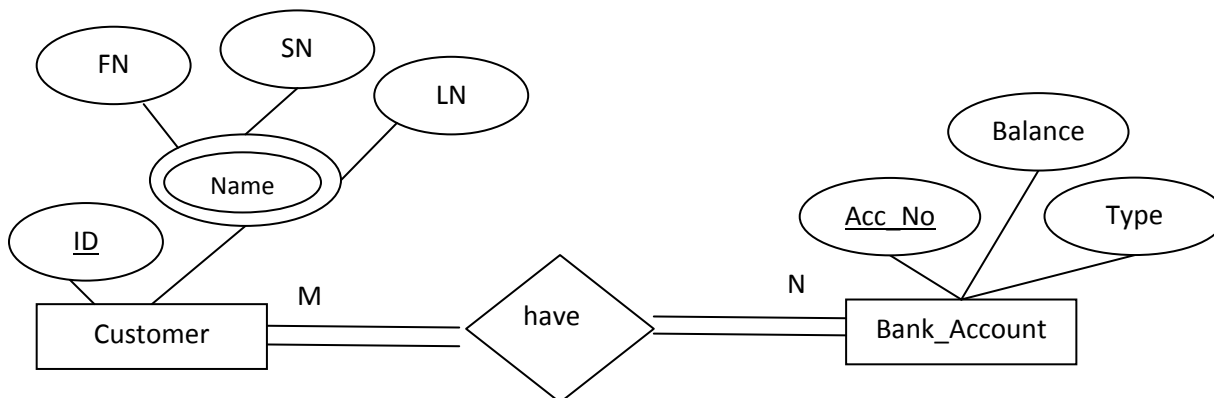
## ER vs. EER

Two modeling techniques are used in conceptual design phase for a relational database. EER can be simply expressed as the next level of ER which supports for inheritance (Specialization/Generalization) and Union. Both of the techniques contain more similarities and few differences as well. Before switch to the differences an idea should be there about characteristics of ER and EER.

## What is ER

ER is the acronym for Entity – Relationship model. The concept was introduced by Peter Chen in 1976. An ER Diagram shows entities with the relationships which each other possess in a particular system. Entity is a real- world or conceptual existing object which is having attributes. Attributes are the data used to describe an entity. Relationships are created according to the interaction between entities. A relationship shows the participation of entities for a particular interaction that can be total or partial. If all the objects of a certain entity type participate for the relationship, then declared as total. If not (at least one object is not participates) become partial. Relationship also includes cardinality ratio which describes no of relationship instances, a linked entity can be participate in. ( 1 : 1 , 1 : M , M : N )

Ex :- Simple Transaction Processing System of a Bank.

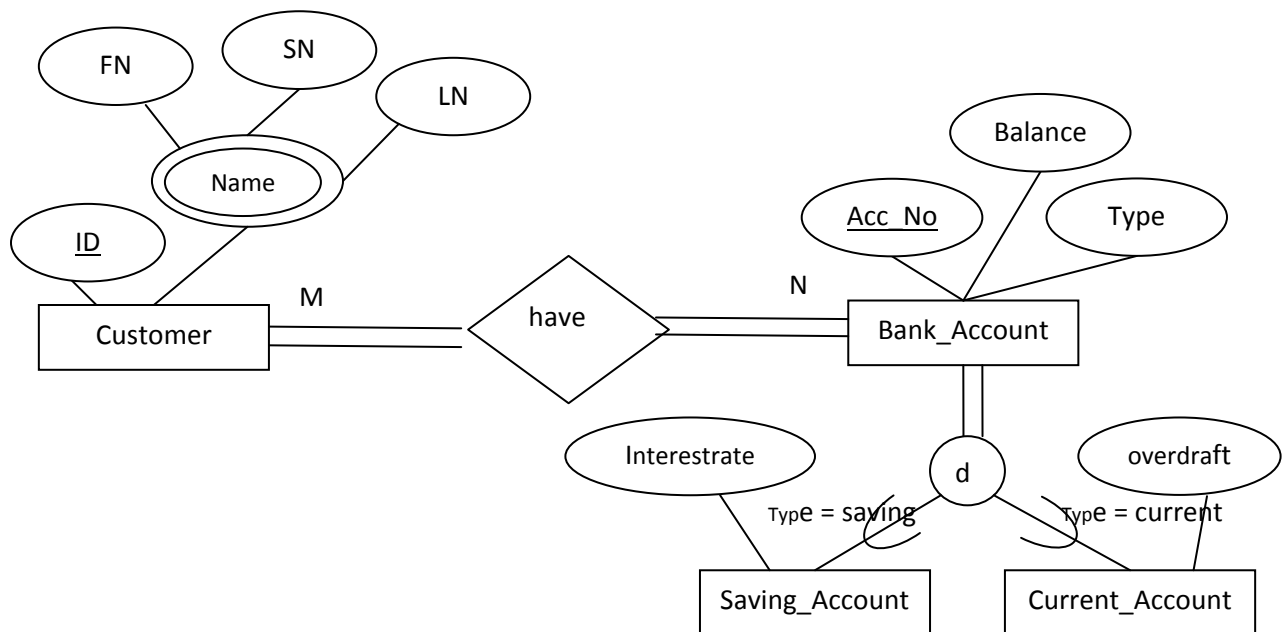


Assumptions: - All customers have Bank Accounts. There is an owner for any Bank Account. A customer may have more accounts and joint accounts are also applicable.

## What is EER

EER stands for Enhanced Entity – Relationship model. EER support for all the features in ER – Model with the concepts of inheritance (Specialization/Generalization) and union (Category). Inheritance can be implemented as specialization or generalization. Specialization means Top – down approach which first creates super class and inherits to sub classes. Generalization is Bottom – Up approach, which creates sub classes occurring first and then into super class. Super class contains common attributes and Sub Classes contain specific attributes according to their scopes. When you declare sub classes you can follow Predicate – Defined, Attribute – Defined or User – Defined approaches. Completeness is also notified in the specialization hierarchy. If all the objects of the super class act as a member of some subclass, it will be declared as total. At least one object not appears in one of the sub classes it is implemented as partial. Disjoint or Overlapping too are mentioned in the specialization. If one object only belongs to one sub class it is disjoint. But some time one entity object can belongs to multiple sub classes. This is known as overlapping.

Union or Category concept support for multiple inheritances which means a sub class can be extended from different entities. In Specialization / Generalization all the attributes of the super class move to the sub class. But in Union it is possible to evolve only the selected attributes.



Assumptions: - All customers have Bank Accounts. There is an owner for any Bank Account. A customer may have more accounts and joint accounts are also applicable. The Bank Account should be a saving account or a current account and no other types. A Bank Account can't belong to both sub classes.

## **Difference between ER and EER**

ER doesn't support for inheritance (Specialization/Generalization)and union. But EER support for these concepts.

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