

Strong Entity Sets

- It contains sufficient attributes to form its primary key
- A single rectangle box is used for its representation
- A single line is used for representation of connection of set & the relationship that exists b/w two strong sets (represented by diamond)
- Participation Total may or may not exist in relationship
- Weak Entity Set

a) does not contain sufficient attributes to form its primary key

b) A double rectangle is used for representation

c) A double line is used for representation of weak entity set & the relationship that exists b/w strong & weak entity set (represented by double diamond)

d) Total Participation exists

Extended Entity Relationship Diagram

- It is a high level data model that incorporates the extensions to original ER Model
- These are high level model that represents the requirements & complexities of a complex data base
- In addition to ER model, the concepts that EER includes are

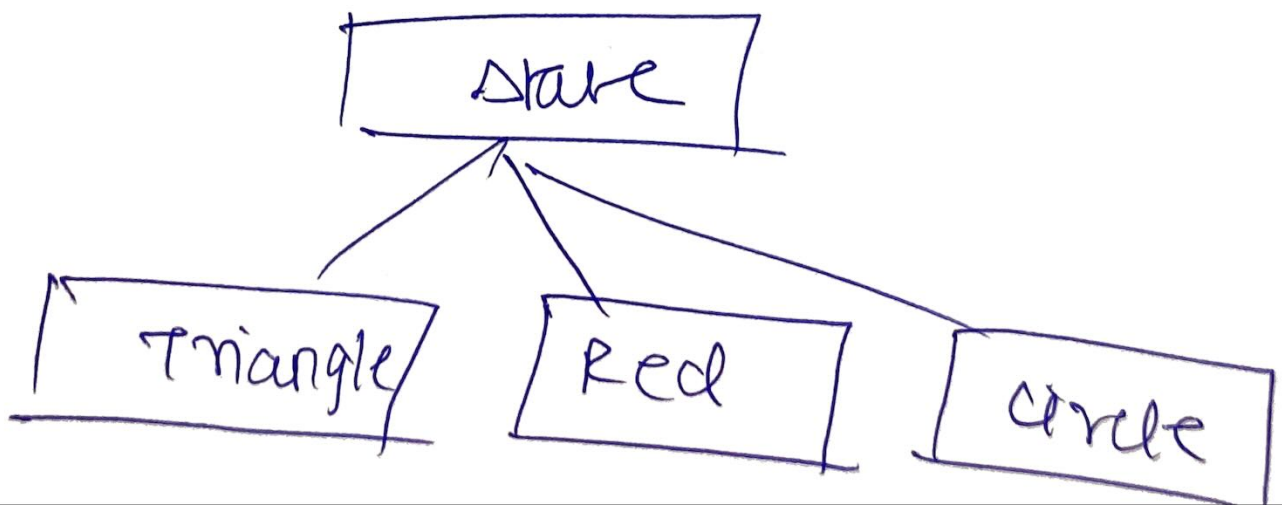
a) Subclasses

↳ entities with unique attributes

↳ it inherits properties & attributes from superclass

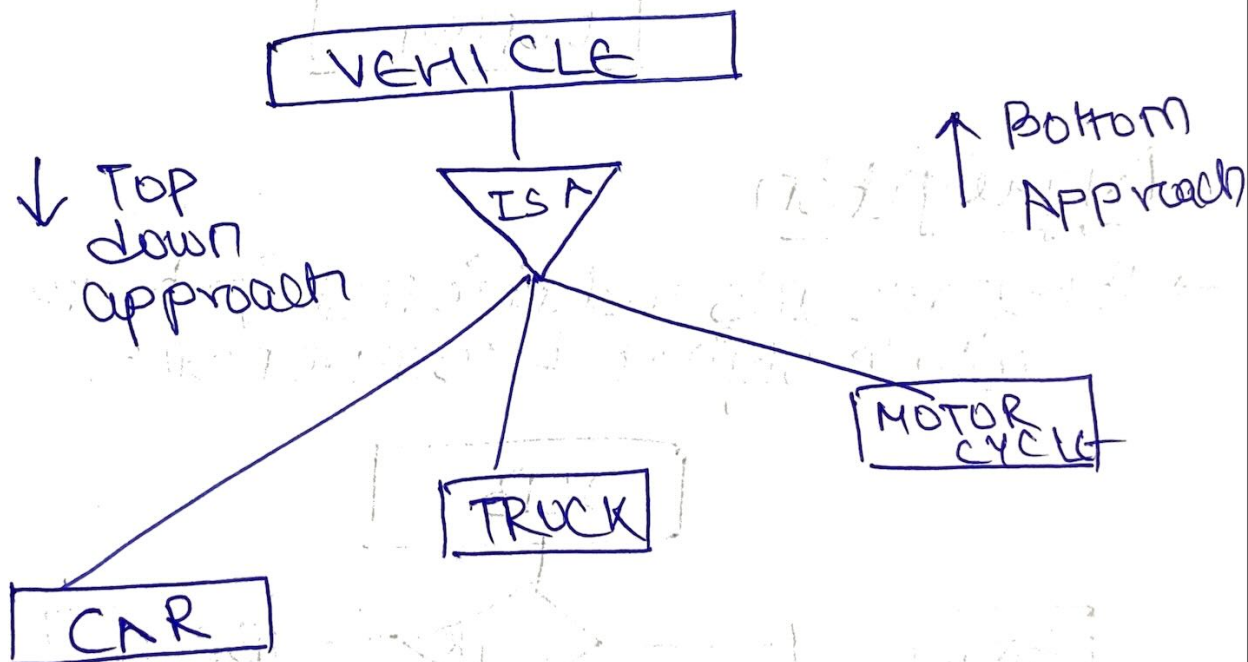
b) Super class

↳ It is an entity that can be divided into further subtypes. While subclass is a derivative of



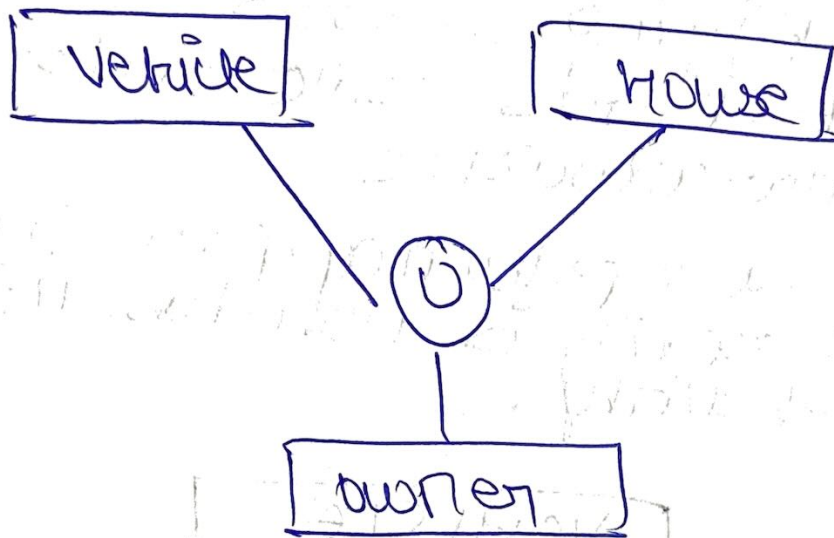
Specialisation & Generalisation

- Generalisation is a process of generalising an entity which contains generalised attributes or properties of generalised entities
- It is a bottom up approach.
- Specialisation is a process of identifying subsets of an entity that shows some different characteristic
- It is a top down approach in which one entity is noted down into low level entity.



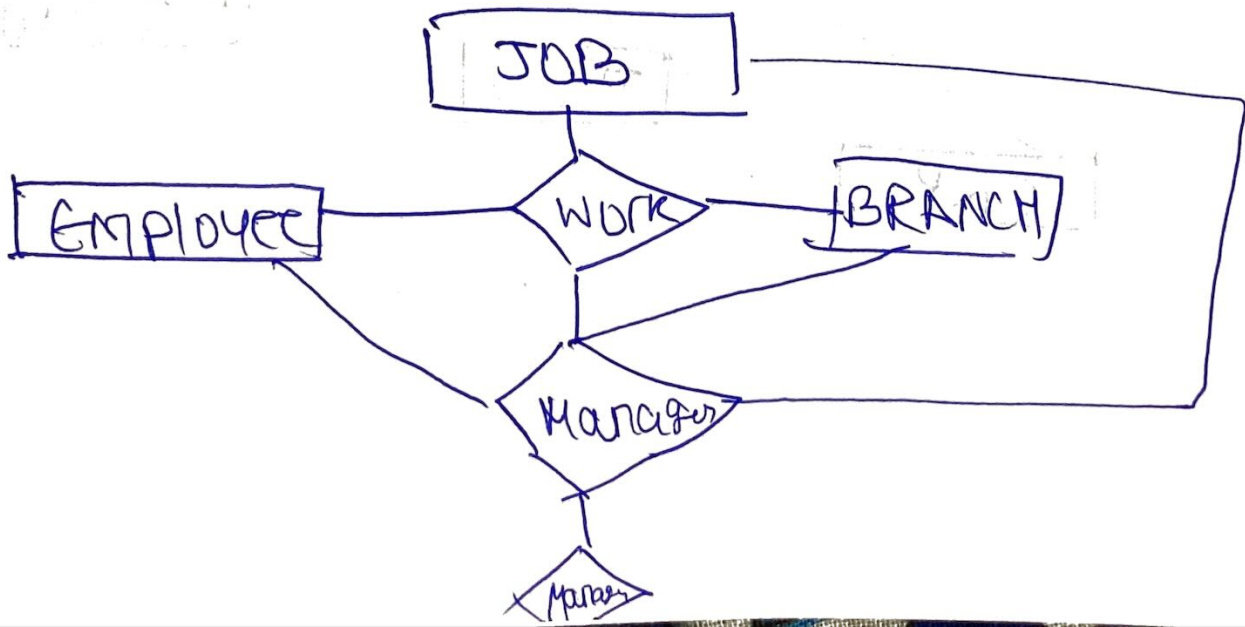
Category or Union

→ Relationship of one super or subclass with more than one superclass. For example, Owner is the subset of two superclass of vehicles House



Aggregation

→ It represents relationship between whole object & component.



ERD Issues

- To use the primary key of an entity set as an attribute of a set
- Instead of using a relationship
- It is not always clear whether an object is best expressed by an entity set or relationship
- Relationship in databases are often binary

Codd's Rule

→ Information Tool

- Guaranteed Access Rule
- Systematic Treatment of null values
- Self Describing Database
- Comprehensive Data Sub-language
- View updating Rule
- High level insert update & delete
- Physical Data Independence
- Logical Data Independence

- Integrity Independence
- Distribution Independence
- Non Subversion Rule

Relational Schema

- The ER Model & RDB Model are abstract, logical representation of real world entities.
- An ER model can be converted into a relational design?
 - a) Representation of strong entity sets with simple attributes
 - b) Representation of strong entity with complex attributes
 - c) Representation of weak entity sets (union)

✱

Relational Modeling BMS

→ can represent a table with row and columns

→ each row is called tuple

→ each table has a name or attribute

→ Characteristics

- domain

- attribute

- relational instance

- relational schema

- relational key

Properties of Relations Are

→ Name of the relation is distinct from all other relation

→ each relation consists one atomic value

→ each attribute contains distinct name

→ attribute domain has no significance

- tuple has no duplicate values.
- order of tuple has different sequence

Reduction of ER diagram through table

- Entity type becomes table
- All single valued attributes becomes a column for the table
- A key attribute of the entity type is represented by primary key
- A multivalued attribute is represented by a separate table
- Composite attributes represented by components
- Derived attributes are not considered in the table

Participation Constraints

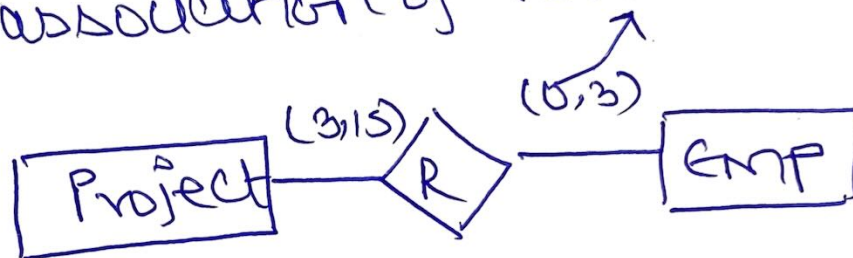
↳ It can be totally

Total Parti

Every entity in the set is involved in some association of the relation

Partial Parti

Not all entities are involved in association of relationship.



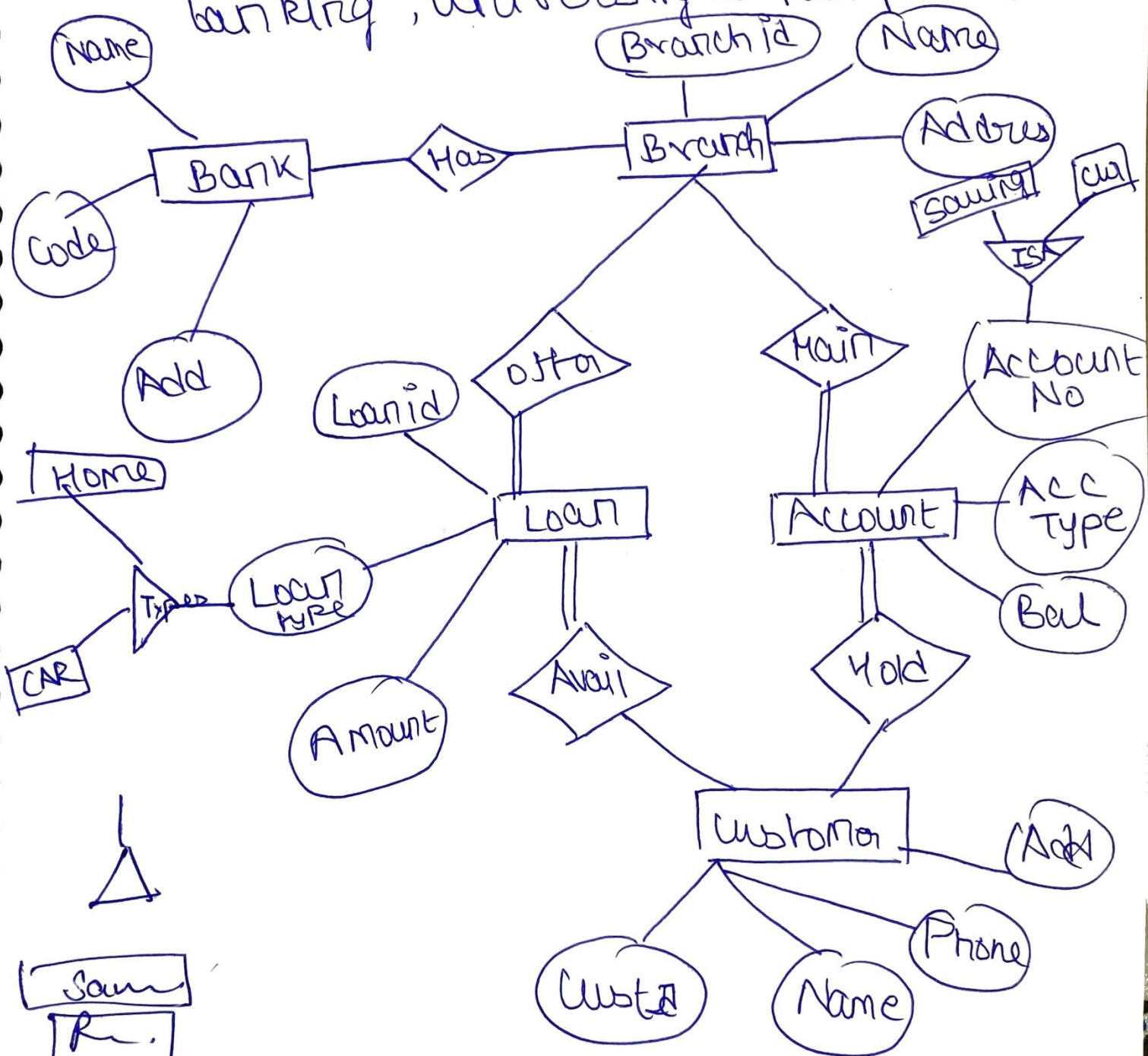
Maximum Cardinality
It defines the max

Min c

It defines the min no. of times



Q Draw extended ER diagram for banking, university & hospital



SG
SS
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