Department Of Information Technology

A.Y. 2023-24
Class: SE-ITA, Semester: III

Subject: **Structured Query Lab**

Experiment – 2: Design a relational model for the chosen system using open source tool.

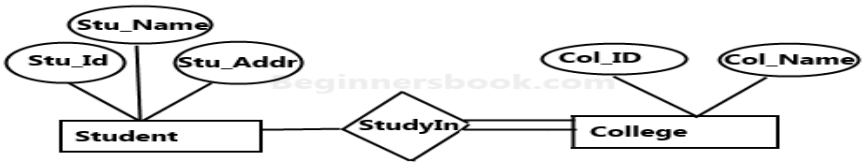
1. **Aim:** To design a relational model for the chosen system using open source tool.

2. **Objective:** The students should be able to clearly identify attributes, entities
- Understand Cardinality
- Identify and apply concepts of Generalization, Specialization and Association
- Mapping of ER/EER to Relational Model

3. **Outcome:** L303.1: Construct the conceptual model for real life application
4. **Prerequisite:** Understanding of entities, attributes, and relationship. Understanding of ER model

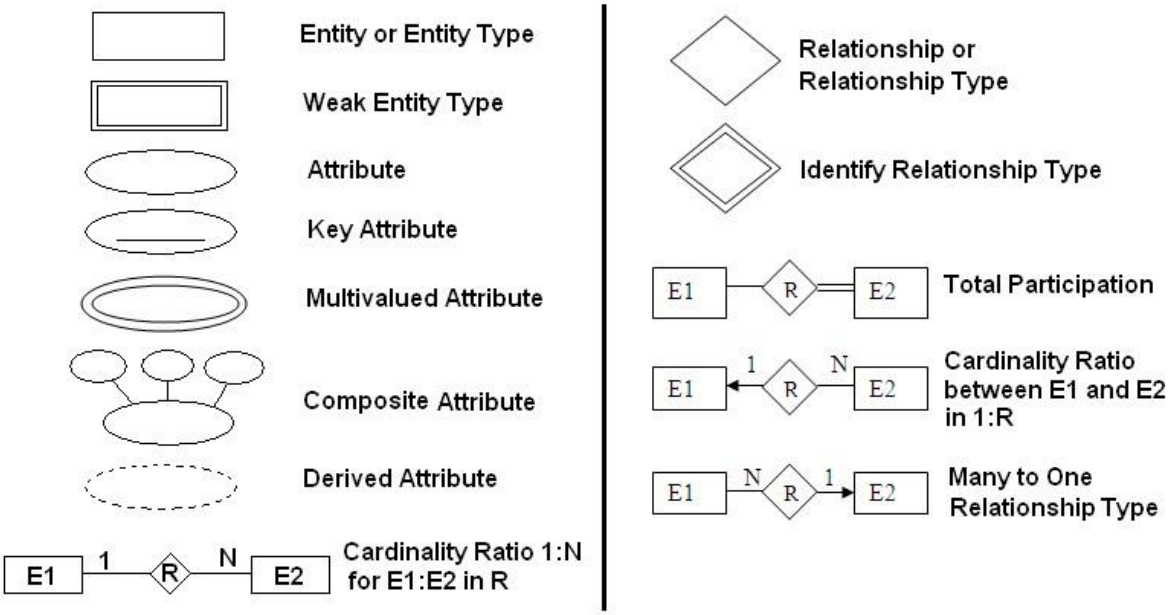
5. **Requirements:**LibreOffice/Draw.io

6. **Pre-Experiment Exercise:**
   Brief Theory
   Entities:
   An **entity** is real-world objects that are represented in database. It can be any object,place,person or class.Data are stored about such **entities**. In **dbms** we store data in the form of table containing information about **entity** type like students,teachers,employees etc
   Weak Entity:
   An entity that does not have a key attribute –
   A weak entity must participate in an identifying relationship type with an owner or identifying entity type –
   Entities are identified by the combination of: – A partial key of the weak entity type – The particular entity they are related to in the identifying entity type



E-R Digram with total participation of College entity set in StudyIn relationship Set - This indicates that each college must have atleast one associated Student.

Attributes:
Give brief description of each attribute with example



Explain basic terms used in Extended Entity Relationship (EER).
Namely Generalization, specialization and aggregation with example

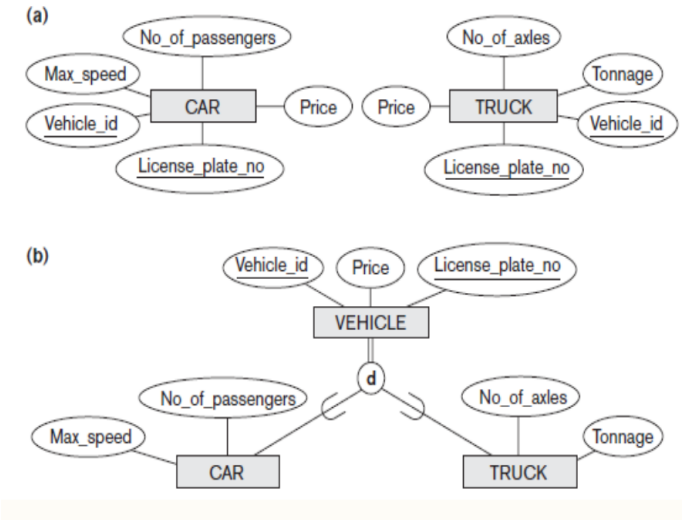


Fig:1 Example of Generalization, Specialization and Aggregation

7. Laboratory Exercise:

A. Procedure:

i) Draw ER diagram for Company Database System.
ii) Draw EER diagram for the Company Database System..
iii) Stepwise design a relational model for Company Database System..

B. Result/Observation/Program code: Attach printouts of above diagram

8. Post Experimental Exercise-

A. Questions:

1. Explain what is a Relational Model is and write down steps to map ER/EER to Relational Model.

2.Draw ER diagram for Railway Reservation System.

3. Draw Relational Model for Railway Reservation System

B. Conclusion:

1. Write what was performed in the experiment
2. Mention few applications of what was studied.
3. Write the significance of the studied topic

C. References:

[1] Elmasri and Navathe, “Fundamentals of Database Systems”, 5th Edition, PEARSON Education.

[2] Korth, Silberchatz, Sudarshan, “Database System Concepts”, 6th Edition, McGraw – Hill