

## **Experiment 02 – Entity Representation Diagram**

**AIM:** To study ER diagram .

**Theory :** The Entity Relational Model is a model for identifying entities to be represented in the database and representation of how those entities are related. The ER data model specifies enterprise schema that represents the overall logical structure of a database graphically. The Entity Relationship Diagram explains the relationship among the entities present in the database. ER models are used to model real-world objects like a person, a car, or a company and the relation between these real-world objects. In short, ER Diagram is the structural format of the database.

1. **State explain ER diagram :** The Entity Relationship Diagram explains the relationship among the entities present in the database. ER models are used to model real-world objects like a person, a car, or a company and the relation between these real-world objects. In short, the ER Diagram is the structural format of the database.
2. **Define entity & state its type :** An Entity may be an object with a physical existence – a particular person, car, house, or employee – or it may be an object with a conceptual existence – a company, a job, or a university course.

Entity are of two types

1. **Tangible Entity –** Tangible Entities refer to real-world objects or concepts that possess a physical presence and can be perceived through the senses like car , person etc.
2. **Non – tangible Entity –** Intangible Entities, on the other hand, represent abstract concepts, ideas, or elements that lack a physical presence like air , bank account etc.
3. **Define attributes and state its type :** In a database management system (DBMS), attributes represent the characteristics or properties of entities or objects stored in the database. There are several types of attributes in DBMS, each with its unique characteristics and applications. Following are some of the types of attributes-
  - 1.) **Simple Attributes –** Simple attributes are single-valued traits that cannot be further split. In a student database, for example, the student's name can be a simple attribute.

- 2.) Composite Attributes – Composite qualities can be further subdivided into smaller sub-parts. A student's address, for example, can be further subdivided into street, city, state, and zip code.
  - 3.) Key Attributes – Key attributes are those that uniquely identify a database entity. In a student database, for example, the roll number can be the key property that uniquely identifies each student.
  - 4.) Multivalued Attributes – Multivalued characteristics can have numerous values for the same entity. A student, for example, may have many phone numbers or email addresses.
  - 5.) Derived Attributes – Derived attributes are qualities that originate from other attributes in the database. The date of birth feature, for example, can be used to calculate a student's age.
4. **State and explain various types of cardinalities in ER diagram :** In database management, cardinality plays an important role. Here cardinality represents the number of times an entity of an entity set participates in a relationship set. Or we can say that the cardinality of a relationship is the number of tuples (rows) in a relationship. Types of cardinality in between tables are:
- 1.) one-to-one
  - 2.) one-to-many
  - 3.) many-to-one
  - 4.) many-to-many

**Learning Objective:** The student should have ability to understand ER diagram

**Result and Discussion:** ER diagrams are helpful tools for database designers. They allow us to see how different things are connected in a database and how data should be organized. They are user-friendly and can be created without needing a lot of technical knowledge. The study provided valuable information about databases and ER diagrams.

**Conclusion:** In conclusion, the study provided us with valuable insights into different types of databases and the significance of Entity-Relationship (ER) diagrams in database management.

Correction Parameters	Formative Assessment [40%]	Timely completion of Practical [ 40%]	Attendance / Learning Attitude [20%]	
Marks Obtained				