**Entity-Relationship Diagram (ERD)**

An **Entity-Relationship Diagram (ERD)** is a visual representation of the data model for a system, showing the entities , their attributes , and the relationships between them. ERDs are used to model the logical structure of databases, helping to design and understand how data is stored, related, and accessed within the system.

**Components of an ERD:**

1. **Entities (Tables in a database)**: Objects or concepts that store data (e.g.student, teacher, subject, level).
2. **Attributes (Columns in a table)**: Properties or details of an entity, defining the data to be stored(like name, age, gender.)
3. **Primary Key**: A unique identifier for each record in an entity, ensuring data uniqueness. (e.g.student\_id ,)
4. **Foreign Key**: An attribute in one entity that references the primary key of another entity, establishing a relationship.
5. **Relationships (Connections between entities)**: Associations between entities that define how they interact or relate to each other (e.g., one student has many subjects).

**ENTITY RELATIONSHIP DIAGRAM**

TEACHER

ID

STUDENT

name

ID PK

specialisation

Full\_name

timestamp

Student\_id FK

name

Id PK

timestamp

Student\_id FK

name

Id PK

SUBJECT

LEVEL

timestamp

timestamp

age

Level\_id FK

gender

email