**Database Diagrams**

Database diagrams are visual representations of the structure and relationships within a database. They are used to communicate the design of a database to developers, administrators, and users. Database diagrams can also be used to plan and manage changes to a database.

**Why are Database Diagrams Used?**

Database diagrams are used for various purpose, including document the design of a database, communicate the design of a database to others, plan and manage changes to a database, identify and resolve problems with a database, generate code for a database.

**Entity Relationship Diagram (ERD)**

An Entity Relationship Diagram (ERD) is a type of database diagram that shows the relationships between different entities in a database. Entities are the objects that are stored in database, such as customers, products, and orders. Relationships are the links between entities, such as the relationship between a customer and an order. Also, Entity Relational and Entity Relation Diagram are used interchangeably.

**Tools for Creating an ERD**

Various tools are available for creating ERDs, including Microsoft Visio, Lucidchart, Draw.io, Gliffy,

ERBuilder

**Symbols Used in an ERD**

Common symbols used in ERDs include:

Entity: A rectangle represents an entity

Relationship: A line between two entities represents a relationship

Attribute: An oval inside an entity represents an attribute.

Key: A diamond inside an entity represents a key.

Cardinality: The number of relationships between two entities is called cardinality. Cardinality can be one-to-one, one to many, or many to many.

Overall, Database Diagrams are essential tools for visually representing the structure and relationships of a database. They serve multiple purposes such as documentation, communication, planning and management, problem resolution, and code generation.

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