ERD diagram for database design

What is ERD ?

* Structural diagram used in db design
* The major entities , and the relationships among these entities

Entities are business objects 🡪 people, product , Log

Diagram

Description automatically generated

1 shipment ships many or 0 orders

Not feasible to put all orders in the shipment row

So put shipment id in the order row instead

Same for courier

Entity (noun)

Entity attributes (column) – characteristic of the entity

Customer (entity)

ID - integer (10) (name and a type)

First\_name varchar(255)

Primary key - uniquely describes a record in a db table

Foreign key – reference to a primary key in another table (relationships between entities)

Graphical user interface

Description automatically generated

1 manufacturer makes many products

So the manufacturer Primary key is the foreign key of the product table

2 different products can be made by the same manufacturer

Hence it can have the same FK

A picture containing diagram

Description automatically generated

1 UserProfile has 1 user 🡪 user’s PK is the FK in the userprofile

Graphical user interface, text

Description automatically generated with medium confidence

1 department can have 0 or many students

1 student must be associated with a dept

Diagram

Description automatically generated

Many to many cardinality

Many to many must have an intermediate table to show this

Conceptual ERD

Table

Description automatically generated

Diagram

Description automatically generated

Diagram

Description automatically generated

Diagram

Description automatically generated

Diagram

Description automatically generated

Diagram

Description automatically generated

Diagram

Description automatically generated

Normalization

Table

Description automatically generated

Data redundancy – insertion, updation and deletion anomaly

Solution

Table

Description automatically generated with medium confidence

Insertion, deletion, update all solved!

1NF

Table

Description automatically generated

Table

Description automatically generated

2NF

Table

Description automatically generated

3NF

Graphical user interface, website

Description automatically generated with medium confidence

BCNF

Graphical user interface, application, website

Description automatically generated

4NF

A picture containing table

Description automatically generated

5NF

Table

Description automatically generated