ASSIGNMENT NO.: 2

Convert ER Diagram made in assignment1 of the corresponding project into Relational Schema with proper explanation and using the concepts of Foreign and Primary Keys.

Relation schema defines the design and structure of the relation like it consists of the relation name, set of attributes/field names/column names. every attribute would have an associated domain.

- **Product_Info**

Product_Info is regular entity type For each regular entity type E in the ER schema, we create a relation R that includes all the simple attributes of E. So it's table will have all 5 attributes CP, ModelNo, Remarks, Desc and ProductID (primary key).

- **Order_Dtls**

Order_Dtls is a weak entity type.

Steps for mapping weak entity type

- For each weak entity type W in the ER schema with owner entity type E, create a relation R & include all simple attributes (or simple components of composite attributes) of W as attributes of R.
- Also, include as foreign key attributes of R the primary key attribute(s) of the relation(s) that correspond to the owner entity type(s).
- The primary key of R is the combination of the primary key(s) of the owner(s) and the partial key of the weak entity type W

Owner entity is Order_Info so primary key of Order_Info will also be included and has foreign key attributes.Primary Key will be combination of ItemNo and OrderID.

Mapping relation contains (between Product_Info and Order_Dtls)

It is 1:N relation.

- For each regular binary 1:N relationship type R, identify the relation S that represent the participating entity type at the N-side of the relationship type.
- Include as foreign key in S the primary key of the relation T that represents the other entity type participating in R.

  S-Order_Dtls
  T-Product_Info

  We will include primary key (ProductID) of Product_Info as foreign key in Order_Dtls

- **Order_Info**

  Order_Info is super class whereas Fulfilled and In progress are sub classes.

  Rules for mapping

  Create a relation L for C with attributes Attrs(L) = {k,a1,…an} and PK(L) = k. Create a relation Li for each subclass Si, 1 < i < m, with the attributesAttrs(Li) = {k} U {attributes of Si} and PK(Li)=k.). It also becomes the foreign key to super class relation.

  We will include all of its attribute leaving Total_Price as it is derived attribute. Order_ID is the primary key

  Mapping relation orders (between Client and Order_Info)

  It is 1:N relation.

  - For each regular binary 1:N relationship type R, identify the relation S that represent the participating entity type at the N-side of the relationship type.
  - Include as foreign key in S the primary key of the relation T that represents the other entity type participating in R.

    S-Order_Info
    T-Client

    We will include primary key (ClientID) of Client as foreign key in Order_Info

- **Fulfilled**

  It will include 2 of it's own attribute and also primary key of Order_Info as foreign key and OrderID will be primary key

- **In Progress**

  It will include it's own attribute and also primary key of Order_Info as foreign key and OrderID will be primary key

- **Client**

  It will contain 2 attributes ClientID (primay key) and Login_ID.

  The primary key of the Client relation is the surrogate key.

- **Individual**

  It will include all of its attribute with AddharNo as primary key leaving Age(as it is derived) and it will also not contain MobileNo (as it is multivalued so it will have separate table). It will also contain ClientID which is foreign key

- **Firm**

  It will include all of its attribute with Reg No as primary key leaving Email_ID (as it is multivalued so it will have separate table). It will also contain ClientID which is foreign key

- **MobileNo**

  It is Multivalued attribute.

  Steps:

  - For each multivalued attribute A, create a new relation R.
  - This relation R will include an attribute corresponding to A, plus the primary key attribute K-as a foreign key in R-of the relation that represents the entity type of relationship type that has A as an attribute.
  - The primary key of R is the combination of A and K. If the multivalued attribute is composite, we include its simple components.

  It will have attributes MobileNo and AddharNo (as a foreign key) and primary key will be combination of both.

- **Email_ID**

  It is Multivalued attribute.

  Steps:

  - For each multivalued attribute A, create a new relation R.
  - This relation R will include an attribute corresponding to A, plus the primary key attribute K-as a foreign key in R-of the relation that represents the entity type of relationship type that has A as an attribute.
  - The primary key of R is the combination of A and K. If the multivalued attribute is composite, we include its simple components.

  It will have attributes Email_ID and Reg No (as a foreign key) and primary key will be combination of both.

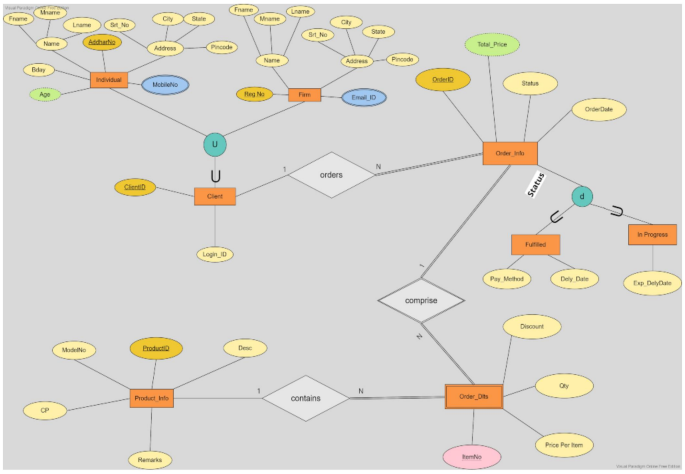
ER Modeling to Relational Schema Mapping

Product_Info

ModelNo	CP	Remarks	Desc	ProductID

Order_Dtls

ItemNo	Qty	Discount	Price Per Item	ProductID	OrderID



Order_Info

OrderDate	Status	OrderID	ClientID

Fulfilled

Pay_Method	Dely_Date	OrderID

In Progress

Exp_DelyDate	OrderID

Client

Login_ID	ClientID

Individual

Bday	Fname	Mname	Lname	Srt_No	City	State	Pincode	ClientID	AddharNo

Firm

Fname	Mname	Lname	Srt_No	City	State	Pincode	Reg No	ClientID

Mobile_No

MobileNo	AddharNo

EmailID

Email_ID	Reg No