DNA - Project Phase 3

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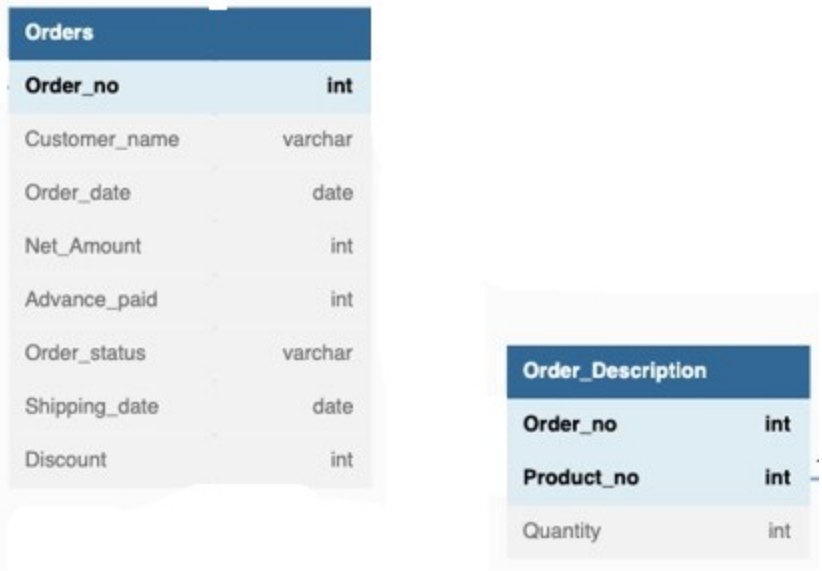
Conversion from ER Diagram to Relational model

Step 1 : Mapping of Regular Entity Types

Mapped the regular entities as specified

Step 2 : Mapping of Weak entities

We map the partial key of the weak entity to the primary key of the parent entity and they are mapped by identifying relation.

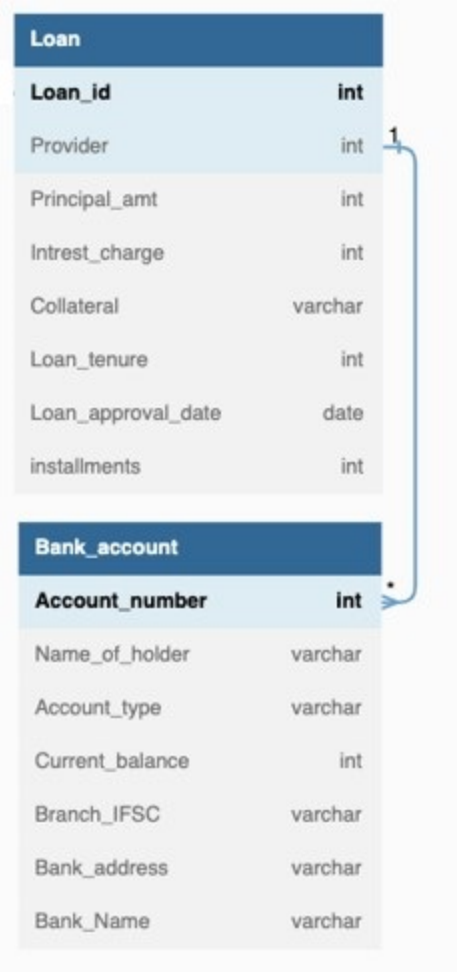


Step 3: Mapping of Binary 1:1 Relationship Types

We link the foreign key of 1 relation to primary attribute of another relation from which it is referenced

Step 4: Mapping of Binary 1: N Relationship Types

It uses same approach as used above

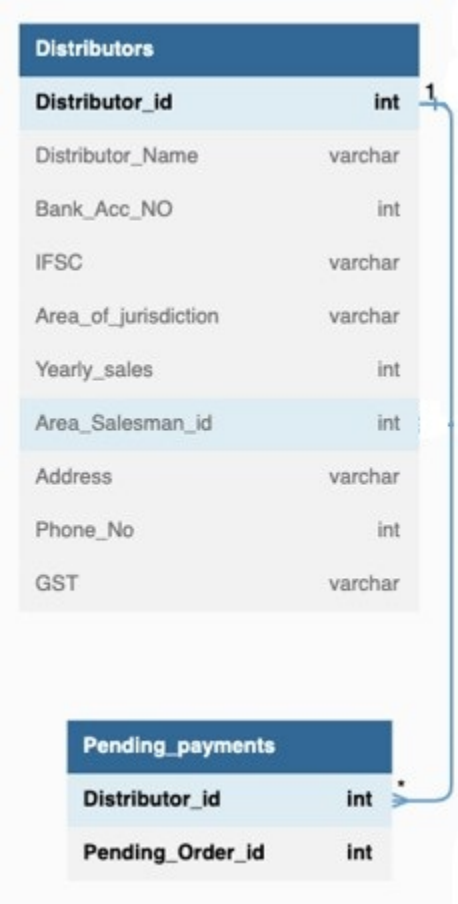


Step 5: Mapping of Binary M:N Relationship Types

No such relation is present in the relational model

Step 6: Mapping of Multivalued Attributes

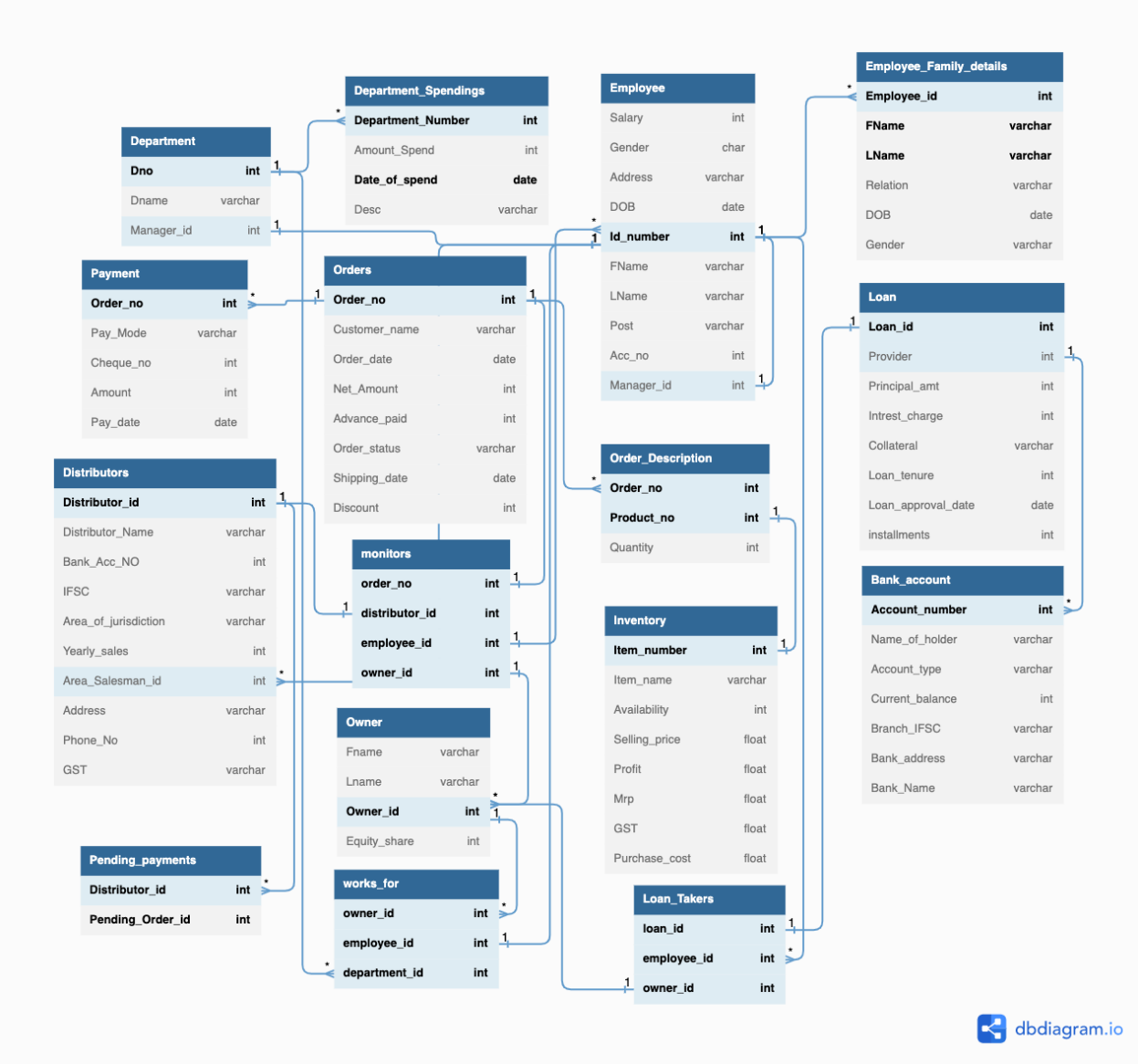
This was done by making separate tables for the multivalued attributes and making them both as foreign key referencing to Distributor relation and the primary key is distributor_id and pending_order_id both.



Step 7: Mapping of N-ary Relationship Types

In this mapping we use relationship relations to map N relations and add their prime attribute in this relation

The Relational Model Obtained from the ER



1NF Normalisation

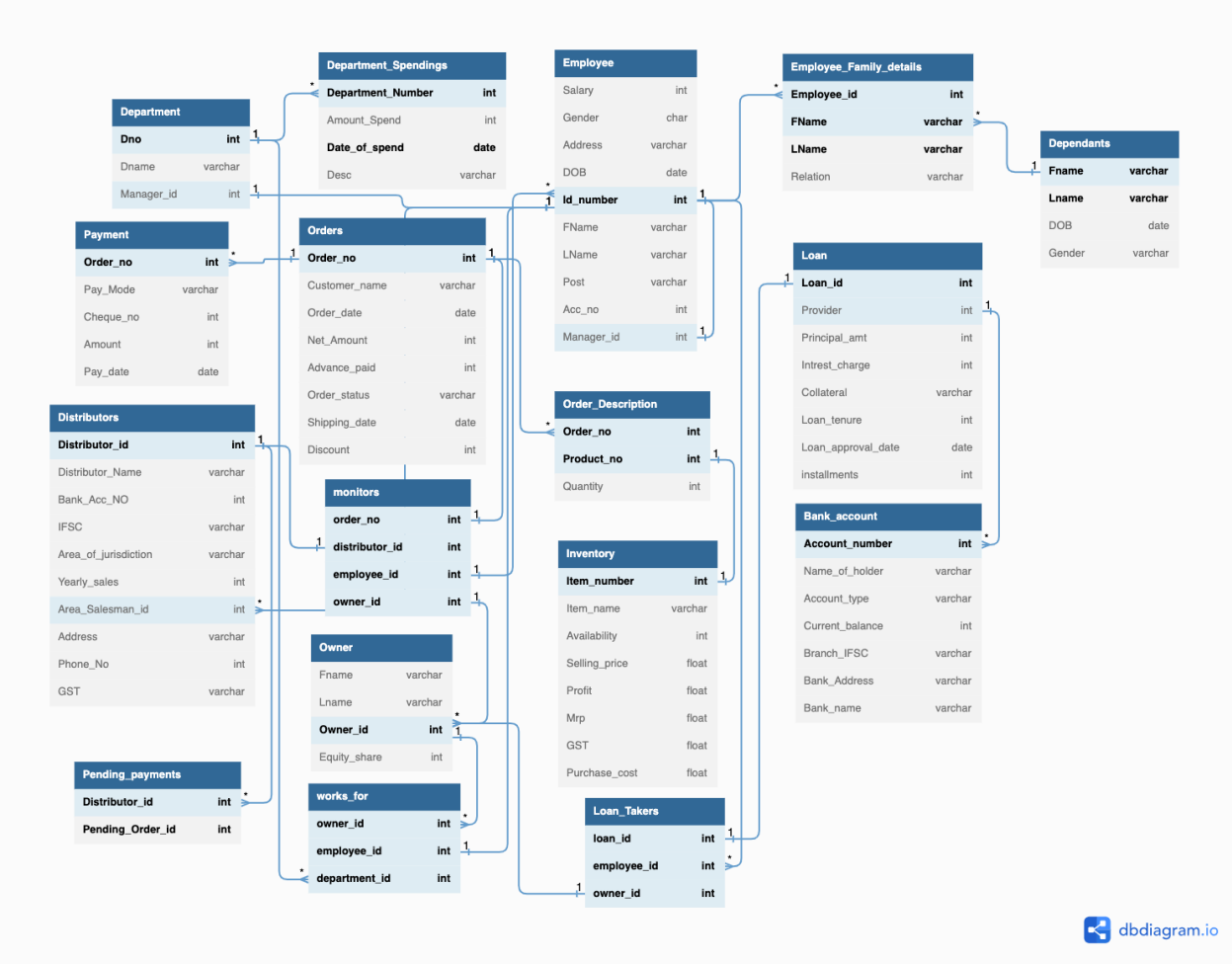
The above relational model is already normalised in 1NF form as it has no-

- Multivalued Attribute
- Composite Attribute
- Nested Relational Attribute

2NF Normalisation

In this type of Normalisation we Reduce Partial functional depndancy between primary key and non prime attribute

In this we create a relation Dependants having Fname, Lname , DOB , Gender as DOB and Gender in Employee_Family_details relation can be identified only using these two attributes.



3NF Normalisation

In this type of Normalisation we remove Transitive functional dependancies.

Branch_IFSC in Bank_account relation is identified from Account_number and Bank_name and Bank_address are identified from Branch_IFSC thus we create a new relation Banks.


Department
Dno int
Dname varchar
Manager_id int
Department_Spendings
Department_Number int
Amount_Spend int
Date_of_spend date
Desc varchar
Employee
Salary int
Gender char
Address varchar
DOB date
Id_number int
FName varchar
LName varchar
Post varchar
Acc_no int
Manager_id int
Employee_Family_details
Employee_id int
FName varchar
LName varchar
Relation varchar
Dependants
Fname varchar
Lname varchar
DOB date
Gender varchar
Payment
Order_no int
Pay_Mode varchar
Cheque_no int
Amount int
Pay_date date
Orders
Order_no int
Customer_name varchar
Order_date date
Net_Amount int
Advance_paid int
Order_status varchar
Shipping_date date
Discount int
Loan
Loan_id int
Provider int
Principal_amt int
Intrest_charge int
Collateral varchar
Loan_tenure int
Loan_approval_date date
installments int
Distributors
Distributor_id int
Distributor_Name varchar
Bank_Acc_NO int
IFSC varchar
Area_of_jurisdiction varchar
Yearly_sales int
Area_Salesman_id int
Address varchar
Phone_No int
GST varchar
monitors
order_no int
distributor_id int
employee_id int
owner_id int
Order_Description
Order_no int
Product_no int
Quantity int
Inventory
Item_number int
Item_name varchar
Availability int
Selling_price float
Profit float
Mrp float
GST float
Purchase_cost float
Bank_account
Account_number int
Name_of_holder varchar
Account_type varchar
Current_balance int
Branch_IFSC varchar
Owner
Fname varchar
Lname varchar
Owner_id int
Equity_share int
Pending_payments
Distributor_id int
Pending_Order_id int
works_for
owner_id int
employee_id int
department_id int
Loan_Takers
loan_id int
employee_id int
owner_id int
Banks
Branch_IFSC varchar
Name_of_Bank varchar
Bank_Address varchar
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