

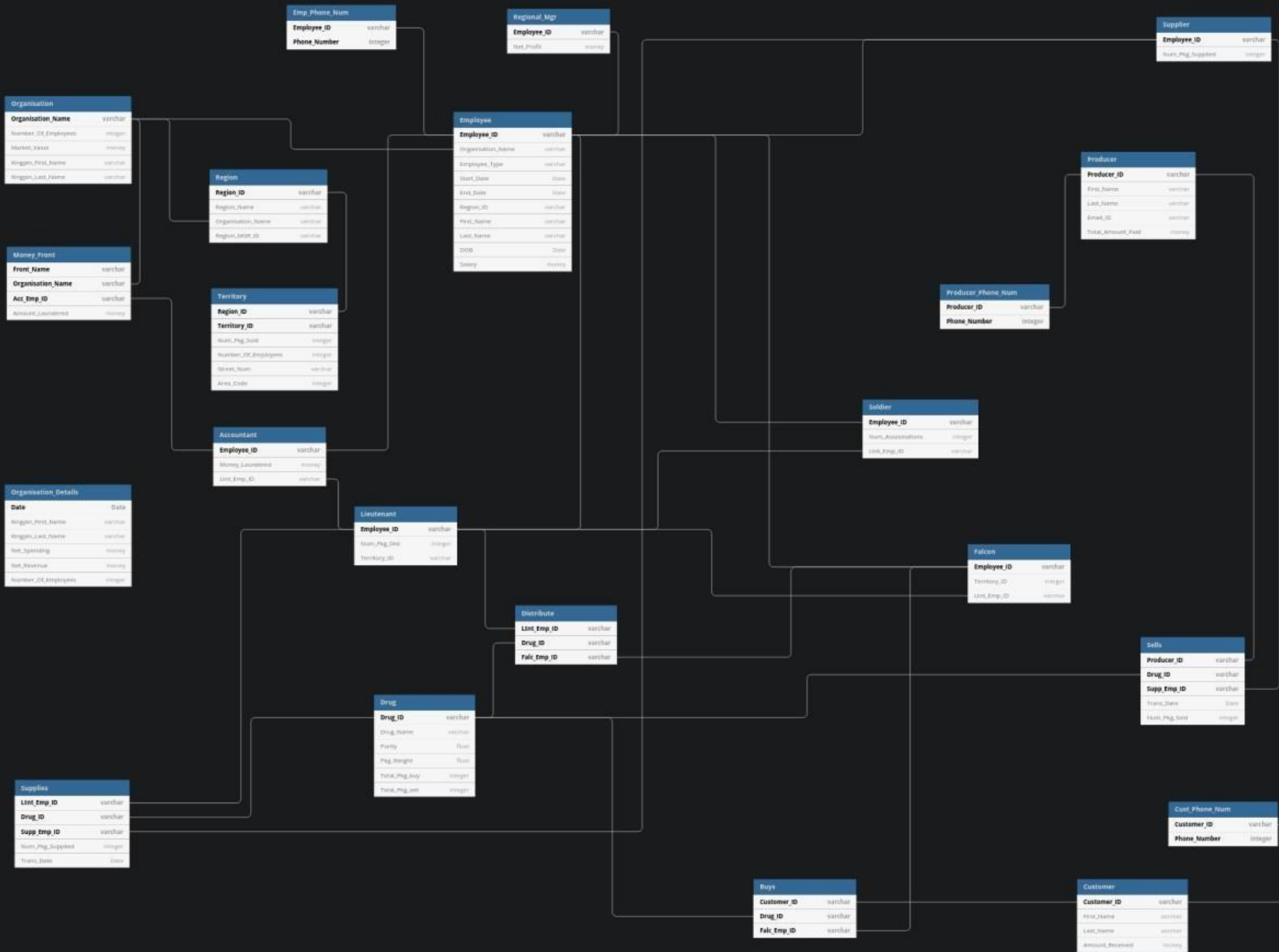
DATA AND APPLICATIONS

PROJECT - PHASE III

EER TO RELATIONAL MODEL

- A table was created for each strong entity type. The bold attributes represent the primary/composite keys in each table.
- Depending on the type of relationship, we either added the primary key of one of the tables as a foreign key in the other table (for 1:1 or 1:N types) or created another table containing the primary keys of each table (for M:N type).
- For $n > 2$ relationship types, we created a new table containing primary keys of each participating table, along with the simple attributes of the relationship. The following tables have been modified to accommodate this:
 - Buys
 - Sells
 - Supplies
 - Distribute
- For each weak entity type W in the EER schema with owner entity type E , we created a new table including all simple attributes of W as attributes of R , along with the primary key of E . The following tables have been modified to accommodate this:
 - Territory
 - Money_Front
- Composite attributes have to be changed to simple attributes. We added each of the simple components of the composite attributes as attributes of the entity. For example, all name attributes in the EER diagram contained First_Name and Last_Name. Hence, we just added these components as attributes in the table. The following tables have been modified to accommodate this:
 - Organization
 - Organization Details
 - Employee • Producer
 - Customer
- For multi-valued attributes, we had to make another table. The two attributes this entity had were the multi-valued attribute and the primary key of the original entity. The primary key of the original entity is a foreign key in this. The following tables were added:
 - Emp_Phone_Num
 - Cust_Phone_Num
 - Producer_Phone_Num

RELATIONAL MODEL



NORMALIZATION

1 NF

Our relational model is already in the 1 NF form as it satisfies the following necessities:

1. There are only Single Valued Attributes
2. Attribute Domain does not change
3. There is a unique name for every attribute in each table
4. The order in which data is stored does not matter

2 NF

Our relational model is already in the 2 NF form as it satisfies the following necessities:

1. The mapping is in First Normal Form
2. Every non-primary-key attribute is fully functionally dependent on the primary/composite key

3 NF

Our relational model is already in the 3 NF form as it satisfies the following necessities:

1. The mapping is in the First and Second Normal Forms.
2. No non-primary-key attribute is transitively dependent on the primary/composite key

Hence, we did not have to modify the relational model to reflect for 1NF, 2NF, and 3NF as our model already satisfied the given constraints.