CS4.301 Data and Applications Project Phase 3

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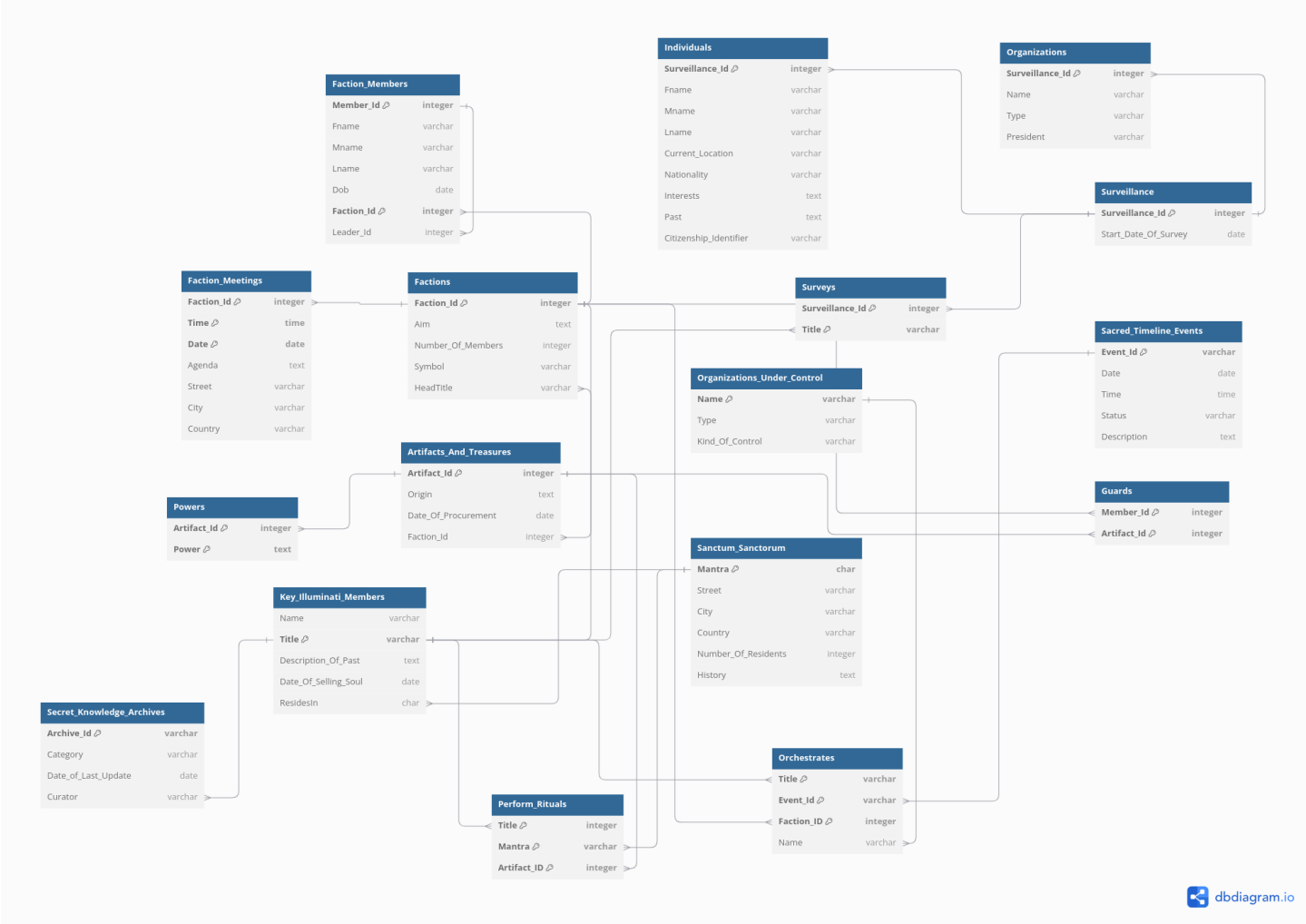
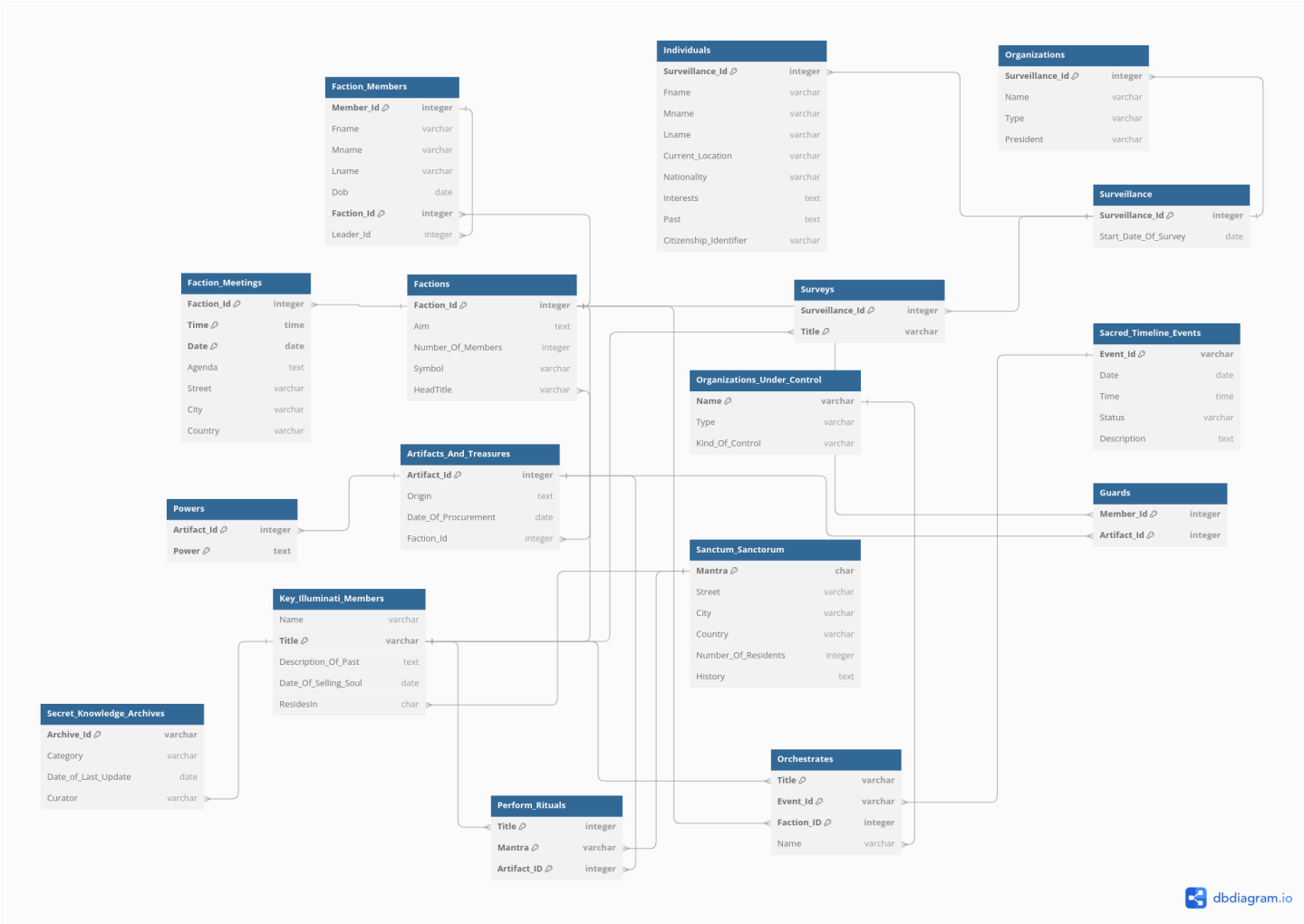
2023113019 2023111001 2023111028 2023101118

1. Conversion to Relational Model



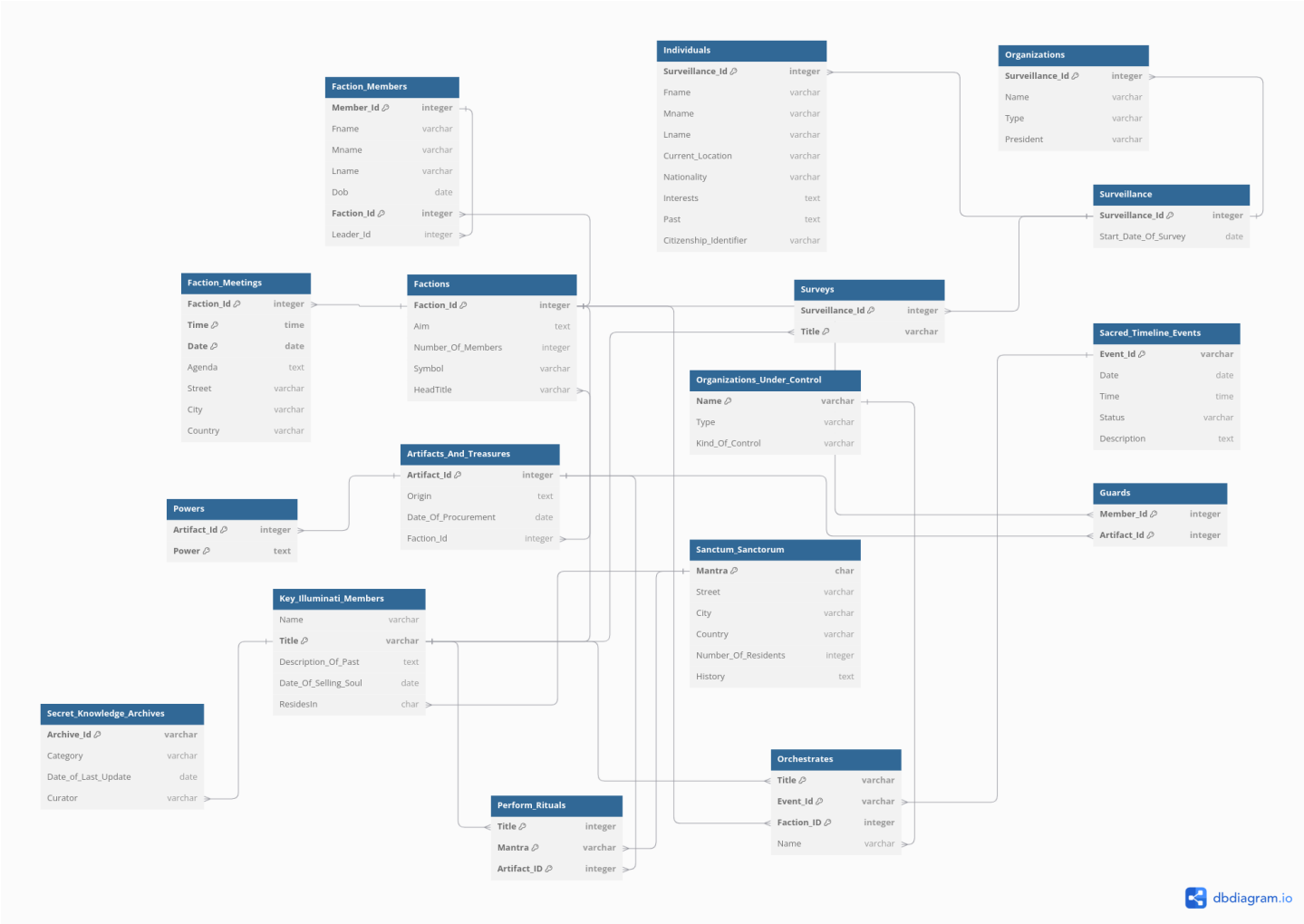
1. The relational model integrates all the entities, attributes, and relationships depicted in the EER diagram ensuring a well-structured and normalized database design
2. Weak entities and their dependencies were carefully handled.
3. Attributes such as Powers of artifacts were separated into their own table, with a foreign key linking back to the Artifacts_And_Treasures table.

2. Conversion to 1NF



The multivalued attribute Power of Artifact was already assigned a separate table in the relational model,no changes were made.

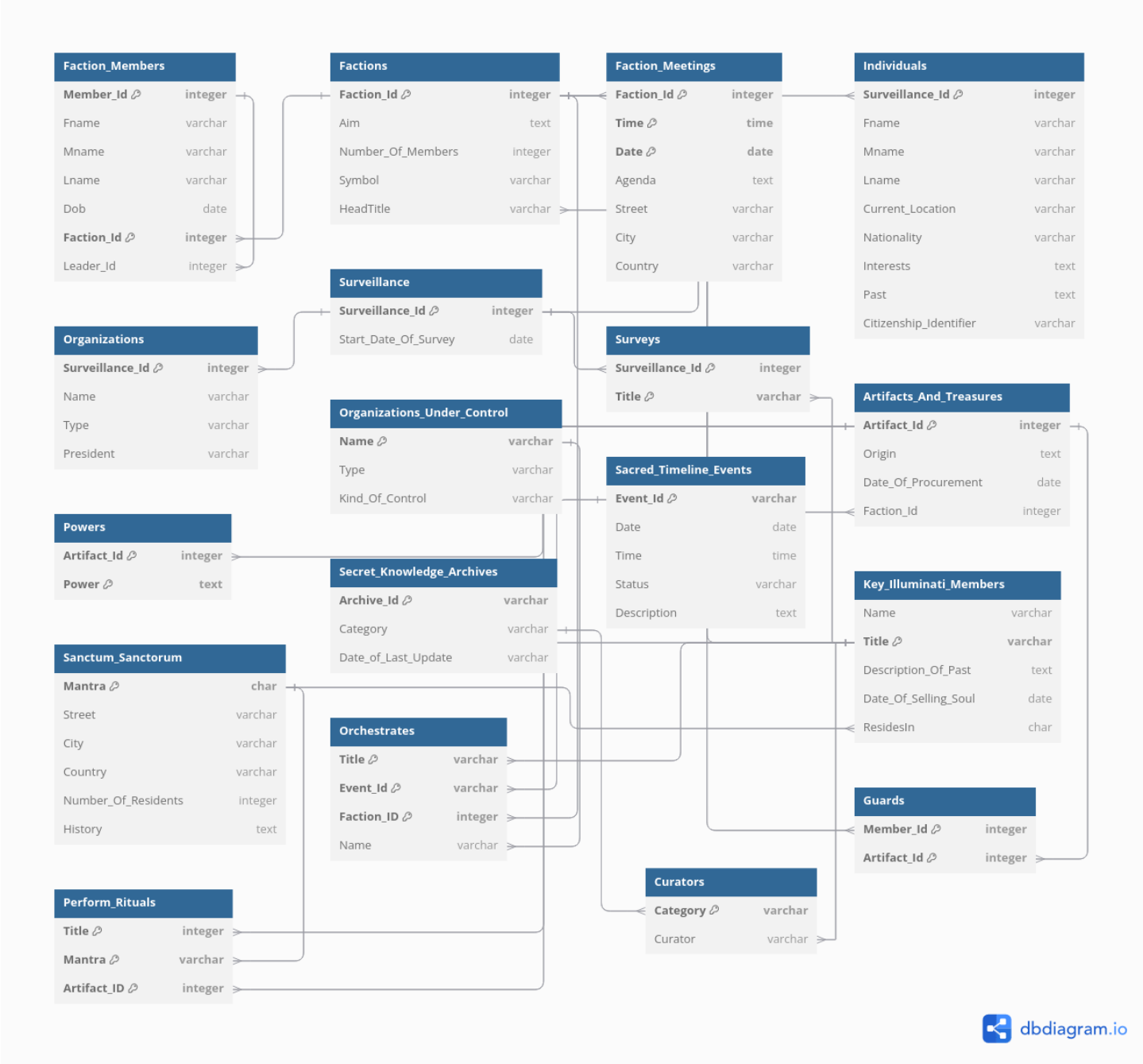
3. Conversion to 2NF



No Changes are Needed Because

1. Most tables already had single-column primary keys.
2. Junction tables (Guards, Perform_Rituals, Head_Of, Orchestrates) were already in 2NF as they contained only key attributes.
3. No other partial dependencies were found.

4. Conversion to 3NF



In Secret Knowledge Archives, each category has a unique curator. Due to this, curator is dependent on category (non-prime attribute). Thus, we have created a separate table for curators and categories.

References Used

Table 9.1 Correspondence between ER and Relational Models

ER MODEL	RELATIONAL MODEL
Entity type	*Entity* relation
1:1 or 1:N relationship type	Foreign key (or *relationship* relation)
M:N relationship type	*Relationship* relation and *two* foreign keys
n-ary relationship type	*Relationship* relation and *n* foreign keys
Simple attribute	Attribute
Composite attribute	Set of simple component attributes
Multivalued attribute	Relation and foreign key
Value set	Domain
Key attribute	Primary (or secondary) key

Figure 1: Convention Used for making Relational Model from an ER Diagram