

Here's a breakdown of each table and why it is in the 3rd normal form:

1. users Table:
 - Attributes: User_ID, LoginID, Surname, Fornames, TitleID, Phone
 - 3rd Normal Form (3NF) Explanation: The table is in 3NF because it avoids transitive dependencies. Each attribute is functionally dependent on the primary key (User_ID), and there are no non-prime attributes dependent on other non-prime attributes.
2. Title Table:
 - Attributes: TitleID, Title
 - 3NF Explanation: This table is in 3NF as it has a single primary key (TitleID), and there are no transitive dependencies.
3. Location Table :
 - Attributes : LocationID, LocationName
 - 3NF Explanation: It is in 3NF as it has a single primary key (LocationID), and there are no transitive dependencies.
4. Positions Table:
 - Attributes: PositionID, Position
 - 3NF Explanation: The table is in 3NF as it has a single primary key (PositionID), and there are no transitive dependencies.
5. Email Table:
 - Attributes: EmailID, Email
 - 3NF Explanation: This table is in 3NF with a single primary key (EmailID) and no transitive dependencies.
6. UserLocation Table:
 - Attributes: UserLocationID, UserID, LocationID
 - 3NF Explanation: It is in 3NF as it has a composite primary key (UserLocationID), UserID, and LocationID, with no transitive dependencies.
7. UserPosition Table:
 - Attributes: UserPositionID, UserID, PositionID
 - 3NF Explanation: This table is in 3NF with a composite primary key (UserPositionID), UserID, and PositionID, and no transitive dependencies.
8. UserEmail Table:
 - Attributes: UserEmailID, UserID, EmailID
 - 3NF Explanation: It is in 3NF as it has a composite primary key (UserEmailID), UserID, and EmailID, with no transitive dependencies.
9. LoginAccounts Table:
 - Attributes: LoginAccountsID, LoginID
 - 3NF Explanation: This table is in 3NF with a single primary key (LoginAccountsID), and there are no transitive dependencies.

First Normal Form (1NF):

- All tables have atomic (indivisible) values in each column.
- No repeating groups of columns.

Second Normal Form (2NF):

- All tables are already in 1NF.
- There are no partial dependencies.
- All non-prime attributes are functionally dependent on the entire primary key.

Third Normal Form (3NF):

- All tables are already in 2NF.
- There are no transitive dependencies.
- Attributes are directly dependent on the primary key.

The tables use practices and principles for database design. Here are reasons why this approach is taken:

1. Normalization: The tables are organized in the 3rd normal form, which minimizes data redundancy and dependency issues. This normalization reduces the likelihood of update anomalies and ensures efficient data storage.
2. Use of Primary and Foreign Keys: The use of primary and foreign keys establishes relationships between tables, ensuring data integrity and preventing orphaned records. This relational model allows for efficient querying and retrieval of data across multiple tables.
3. Explicit Relationships: Clear relationships are defined between tables, such as the associations between users and their positions, locations, and emails. This explicit representation makes it easier to understand the data model and how different entities are connected.

In summary, the approach taken in the SQL schema aligns with best practices in relational database design, promoting data integrity and maintainability. Overall, the structure of these tables adheres to the principles of the 3rd normal form, minimizing redundancy and ensuring efficient data management.