SKILLENABLE

Normalization - 1st Normal Form

Normalization - 1st Normal Form

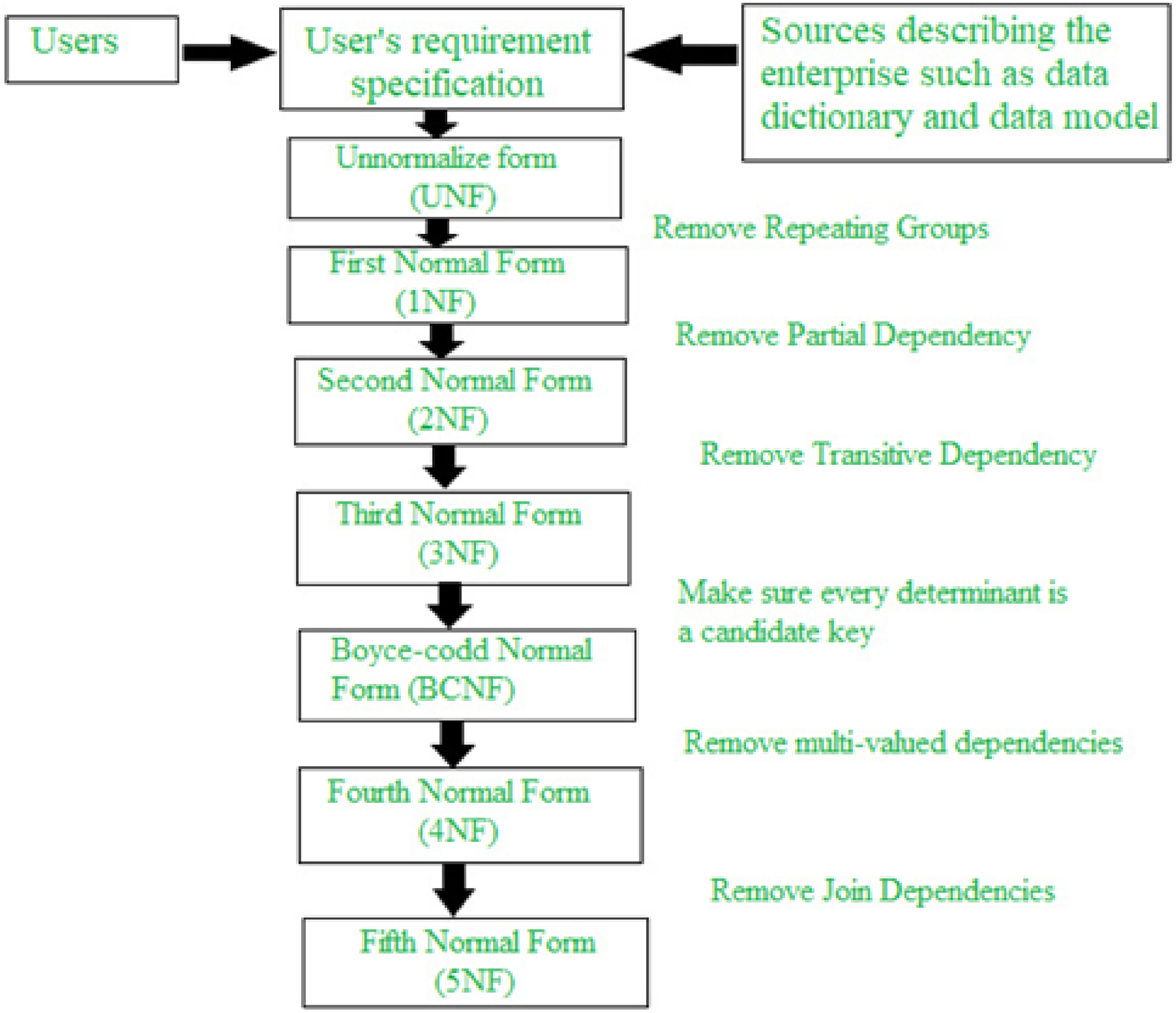
Normalization is the process of minimizing redundancy from a relation or set of relations. Redundancy in relation may cause insertion, deletion and update anomalies. So, it helps to minimize the redundancy in relations. Normal forms are used to eliminate or reduce redundancy in database tables.

- Database normalization is a stepwise formal process that allows us to decompose database tables in such a way that both data dependency and update anomalies are minimized.

- It makes use of functional dependency that exists in the table and primary key or candidate key in analyzing the tables.

- Normal forms were initially proposed called First Normal Form (INF), Second Normal Form (2NF), and Third Normal Form (3NF).

- Subsequently, R, Boyce, and E. F. Codd introduced a stronger definition of 3NF called Boyce-Codd Normal Form. With the exception of 1NF, all these normal forms are based on functional dependency among the attributes of a table.


Users
User's requirement specification
Sources describing the enterprise such as data dictionary and data model
Unnormalize form (UNF)
Remove Repeating Groups
First Normal Form (1NF)
Remove Partial Dependency
Second Normal Form (2NF)
Remove Transitive Dependency
Third Normal Form (3NF)
Make sure every determinant is a candidate key
Boyce-codd Normal Form (BCNF)
Remove multi-valued dependencies
Fourth Normal Form (4NF)
Remove Join Dependencies
Fifth Normal Form (5NF)

- If a relation contains a composite or multi-valued attribute, it violates the first normal form, or the relation is in first normal form if it does not contain any composite or multi-valued attribute.

- A relation is in first normal form if every attribute in that relation is singled valued attribute.

A table is in 1 NF if:

- There are only Single Valued Attributes.
- Attribute Domain does not change.
- There is a unique name for every Attribute/Column.
- The order in which data is stored does not matter.

SKiLLENABLE