3rd Normal Form

Let’s summarise what you have learned in this segment.

Consider a table with the following three attributes: <A, B, C>. Consider that A is the primary key. A transitive dependency occurs when a non-prime attribute C is dependent on another non-prime attribute B, which depends on the prime attribute A. In this case, you create a new table with Columns B and C. Column B acts as a primary key for this new table. Then, the two tables are as follows:

<A, B> and <B, C>

The following are the conditions for a table to be in 3NF:

1. Each field of the table must have single values. The table must be in 1NF.
2. Every non-prime attribute must fully functionally dependent on the composite key. The table must be in 2NF.
3. The table must have no transitive dependencies.

The information about Customer, Owner and Car lies in different tables. The transactions are recorded in one table that contains foreign keys to customer and car tables.

More Details

<https://learn.upgrad.com/course/2264/segment/18816/115890/352052/1831321>

Let us summarise what we have learnt in this segment:

* For a table to be in 2NF, there must not be any partial dependency. All non-prime attributes must fully functionally dependent on the composite key.
* Data Normalization is the process of organizing data in a database such that a piece of data is not repeated at various places.
* For a table to be in 1NF, there must not be more than one value in any field. There must be a primary key to uniquely identify each row.
* A transitive dependency occurs when a non-prime attribute A can be determined by another non-prime attribute B and B is fully functionally dependent on the primary key.
* Functional dependency defines if one attribute can be determined by another attribute. If A is functionally dependent on B, B can determine the value of A.
* For a table to be in 3NF, there must not be any transitive dependencies.
* Full Functional Dependency occurs when a non-prime attribute can be determined only by the entire composite key.
* For a table to be in 2 NF, a table must be in 1NF.
* Partial Dependency occurs when a non-prime attribute can be determined only by a part of the composite key.
* For a table to be in 3NF, a table must be in 2NF.