



Normalization in DBMS



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Normalization is a process of organizing the data in database to avoid data redundancy, insertion anomaly, update anomaly & deletion anomaly.

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First normal form (1NF)

As per the rule of first normal form, an attribute (column) of a table cannot hold multiple values. It should hold only atomic values.

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Second normal form (2NF)

A table is said to be in 2NF if both the following conditions hold:

- 1. Table is in 1NF (First normal form)**
- 2. No non-prime attribute is dependent on the proper subset of any candidate key of table.**

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Third Normal Form

A table is in 3NF if it is in 2NF and for each functional dependency $X \rightarrow Y$ at least one of the following conditions hold:

- 1. X is a super key of table**
- 2. Y is a prime attribute of table**

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Boyce Codd normal form (BCNF)

It is an advance version of 3NF that's why it is also referred as 3.5NF. BCNF is stricter than 3NF.

A table complies with BCNF if it is in 3NF and for every functional dependency $X \rightarrow Y$, X should be the super key of the table.

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