## Boyce Codd Normal Form

* Developed by Raymond Boyce and Edgar F. Codd.
* Boyce-Codd Normal Form (BCNF) is one of the forms of database normalization.
* Boyce-Codd Normal Form or BCNF is really an extension of the “[Third Normal Form](https://www.studytonight.com/dbms/third-normal-form.php)”, and is also known as “3.5 Normal Form”. And was invented to address certain types of anomalies not dealt with by 3NF as originally defined.

3NF states that all data in a table must depend only on that table’s primary key, and not on any other field in the table.

At first glance it would seem that **BCNF** and **3NF** are the same thing. However, in some rare cases it does happen that a 3NF table is **not BCNF-compliant.** This may happen in tables with two or more overlapping composite candidate keys.

## Rules of BCNF

For a table to satisfy the Boyce-Codd Normal Form, it should satisfy the following two conditions:

* It should be in the **Third Normal Form**.
* And, for any dependency “A → B”, “**A**” should be a **super key**. In other words, it means, that for a dependency A → B, A cannot be a **non-prime attribute**, if B is a **prime attribute**.

A screenshot of a computer

Description automatically generated

Above is an Example Diagram of a Database Structure for Gym Membership App.

* The Database contains 5 tables.
  + 1 for each type of user (Admin & and Members),
  + 1 for the Users’ genders,
  + 1 for the Membership Types
  + and 1 for the Membership Status of the User.

The Members below Table is a perfect example of a table in (BCNF).

A screenshot of a computer

Description automatically generated