**Normalization in DBMS**

**Normalization :**

* Normalization is the process of organizing data and the attributes of a database.
* It performed to reduce the data redundancy in a database and ensure that data is store logically.
* Normalization is systematic approach of decomposing table to eliminate data redundancy and undesirable characteristics like insertion, update and delete.
* Normalization is multi-step process that puts data in tribular form and remove duplicate data from relation tables.

**Table Of office Employee**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **NAME** | **ADDRESS** | **PROFESSION** |
| 101 | Sonu | Mumbai | Developer |
| 102 | Rohan | Pune | Accountant |
| 103 | Ashu | Nagpur | Scientist |
| 104 | Divya | Nasik | Manager |
| 105 | Aditi | Akola | Clerk |
| 106 | Charan | Ramtek | CA |
| 107 | Shreyash | Shirdi | Office Boy |

In this table, we have data of office employees.

1. **Insertion Anomaly :**

An Insertion anomaly accurse in the relation database when some attributes or data items are inserted into database without existence of other attributes.

1. **Updation Anomaly :**

Updation anomaly accurse when the same data item are repeated with the same values are not linked to each other.

1. **Deletion Anomalies :**

Deletion anomalies accurse when deleting one part of the data deletes the other necessary information from the database.

**Types of normalization**

* 1NF
* 2NF
* 3NF
* BCNF

**Diagram:**

**1NF**

**2NF**

3NF

**BCNF**