2/2/22

First Normal form

→ A table shouldn't have any multivalued attributes.

Not in 1NF

Rollno.	Name	Course
1	Sai	C/C++
2	Kiran	Java
3	Jyoti	C/Java

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The Table contains two values in a Column.

→ Agar table mein ek Column mein ek se jyada value hai matlab voh INF mein nai hai.

So, to solve this or to make our table in first normal form we have 3 methods →

1) Sab data ko jo multivalued usko as an individual kar do.

Ex →

Rollno	Name	Course
1	Sai	C
1	Sai	C++
2	Kiran	Java
3	Jyoti	C
3	Jyoti	Java

Since, we know the concept of Primary key it must be unique, so here any single attribute cannot be a primary key since the values are ~~Unique~~ not unique.

So, here we have the concept of 'Composite Primary Key' in which we combine two attributes so that it can work as a Primary Key.

So, here we will combine → [RollNo Course] (together will work as P.K.)

(2) So are 2nd approach can be that we divide the attribute which contains multiple values.

RollNo	Name	Course1	Course 2
1	Jai	C	C++
2	Kiran	Java	Null
3	Jyoti	C	Java

Here, the Primary Key coulb be 'roll no'

The only Problem we have here is, suppose we have a student enrolled in 'n' no. of courses and other one is enrolled in

only 1 or 2 courses, so the columns created for courses would be null for this student, which is not a good representation.

So, for this let's move to our 3rd approach.

3. Here we will have a base table with Roll no and Name as it's attribute and another table that would be our reference table with Roll no and Course as it's attribute.

Base Table

Rollno	~~Course~~ Name
1	Sai
2	Kiran
3	Jyoti

Primary Key

Reference Table

Rollno	Course
1	C
1	C++
2	Java
3	C
3	Java

{foreign Key}

take reference from P.K. of Base table

Here P.K. would be Rollno + Course