

Normalization TND



Anomaly

Normalization: what??

⇒ It is a technique to remove or reduce redundancy from a table.

* redundancy: multiple copies of same data.

* Duplicacy is of two types —

1. Row level
2. Column level

⇒ Row level: took an example like

	SID	Sname	Age	
Remarks	1	Shivika	20	these two row are same
	2	Vamika	25	
	3	Tanika	20	
	1	Shivika	20	



Here, we do SID is
primary key (unique
⊕
Not NULL)

So we set SID, no two row will
same, so row level duplicacy
removed.

→ Column level: took an example

SID	Sname	Cid	Cname	FID	Fname	Salary
1	Shivika	C1	DBMS	F1	John	300
2	Vanika	C2	JAVA	F2	Bob	400
3	Tanika	C1	DBMS	F1	John	300
4	Himanya	C1	DBMS	F1	John	300

These column are same.

Remarks

here we have three types of
problem —



1. Insertion anomaly
2. Deletion anomaly
3. Updation anomaly

• Insertion

For previous table if we add new course like pharmacy we can't insert it.

Reason: SID because I only said add course not Student ID because after course insert then student register. and

We set SID as primary key and

Primary key can not be NULL.

This is called Insertion anomaly.

Remarks



• Deletion

from previous table,

If we delete $SID=2$

So simply: Delete from student
where $SID=2$

row two will be deleted but
due to deletion we delete all
data of student.

In this extra information also
deleted.

like faculty name, salary etc.

And we can't recover our data

Remarks

• Update

from previous table,

update Sname —

set Sname

So query: UPDATE student ~~where~~
Sname = 'Tarnika Patel'
where SID = 2.

No problem here.

But if we change salary of FL form
300 to 900 then —

in this, it changes all FL
300 to 900

but you want to change only
Tarnika Patel faculty salary

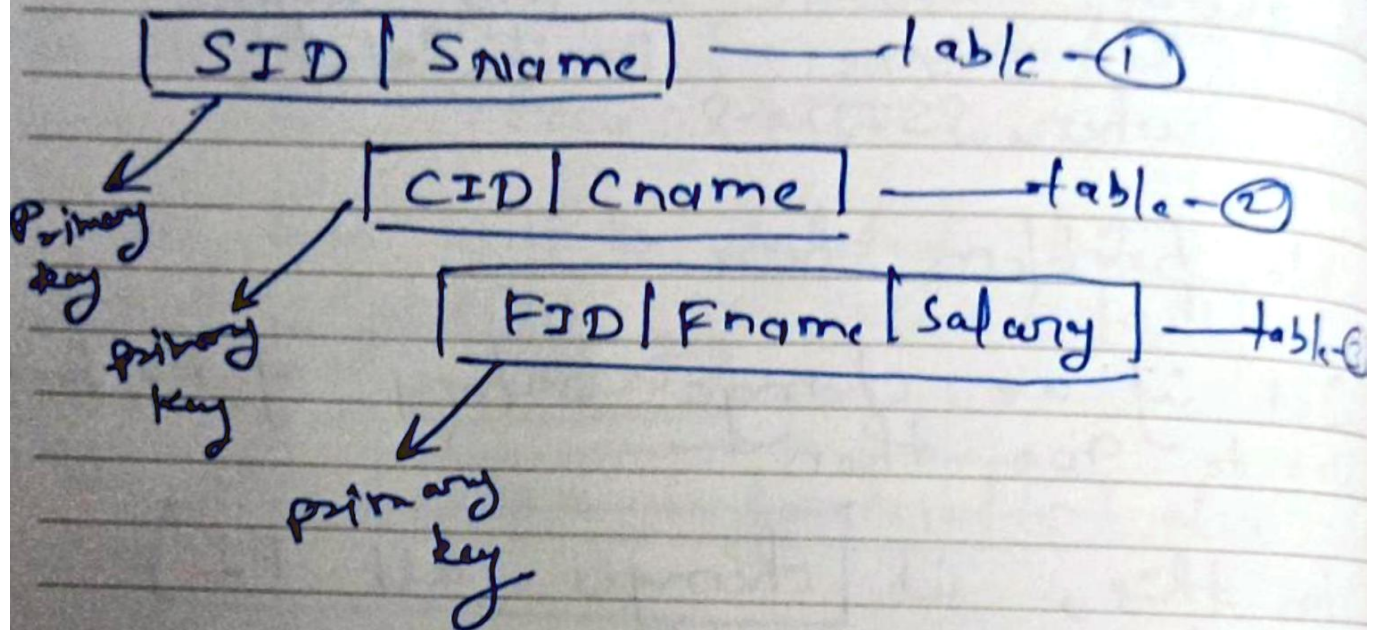
but here it changes all FL so
it create problem.

~~✗~~ Causes due to column level
duplicacy.



How Normalization help form there ??

We can break our table like



Remarks _____