NORMALISATION

What is Normalization ?

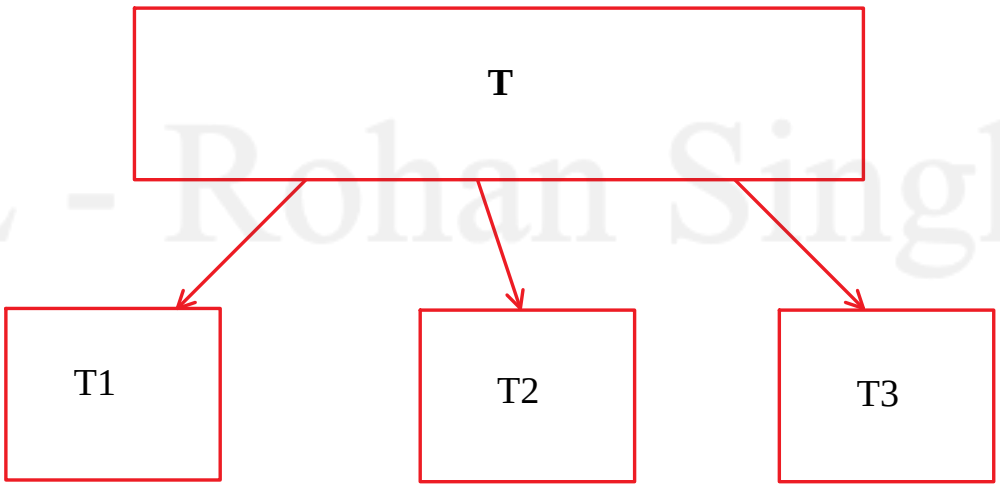
" It is the process of reducing a large table into smaller tables in order to remove redundancies and anomalies by identifying their functional dependencies is known as Normalization . "

Or

"The process of decomposing a large table into smaller table is known as Normalization ."

Or

"Reducing a table to its Normal Form is known as Normalization . "



What is **Normal Form** ?

A table without redundancies and anomalies are said to be in Normal Form .

Levels of Normal From .

1. **First Normal Form (1NF)**
2. **Second Normal Form (2NF)**
3. **Third Normal Form (3NF)**
4. **Boyce - Codd Normal Form (BCNF)**

Note : **If any Table / entity is reduced to 3NF , then the table is said to be normalized.**

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1. ***First Normal Form (1NF) :***

- No duplicates records .
- Multivalued data should not be present .

QSPIDERS

QID	NAME	COURSE
1	A	JAVA
2	B	JAVA , SQL
3	C	MT , SQL
1	A	MT

QID	NAME	C1	C2	C3
1	A	JAVA		MT
2	B	JAVA	SQL	
3	C		SQL	MT

2. ***Second Normal Form (2NF)***

- Table should be in 1NF
- Table should not have Partial Functional Dependency .

EMPLOYEE - (EID , ENAME , SAL , DEPTNO , DNAME , LOC)

Eid	ename	sal	Deptno	dname	Loc
1	A	100	10	D1	L1
2	B	120	20	D2	L2
3	C	320	10	D1	L1
4	D	251	10	D1	L1

Eid - ename ,sal
Deptno - dname , loc

:- (***Eid , deptno***) -> (Ename , Sal , Dname , Loc) composite key attribute results in PFD

R1 - (EID , ENAME , SAL)
R2 - (DEPTNO , DNAME , LOC)

Eid	ename	sal	DNO
1	A	100	10
2	B	120	20
3	C	320	10
4	D	251	10

Deptno	dname	Loc
10	D1	L1
20	D2	L2

3	C	320	10
4	D	251	10

10	D1	L1
20	D2	L2

3. ***Third Normal Form (3NF)***

- Table should be in 2NF .
- Table should not have Transitive Functional Dependency .

Employee - (EID , Ename , Sal , comm , Pin code , state , country)

EID -> ENAME
SAL
COMM
PINCODE -> STATE
COUNTRY

:- Transitive Functional Dep

R1- (eid , ename , comm)
R2- (pincode , state , country)