

NORMALISATION

What is Normalization ?

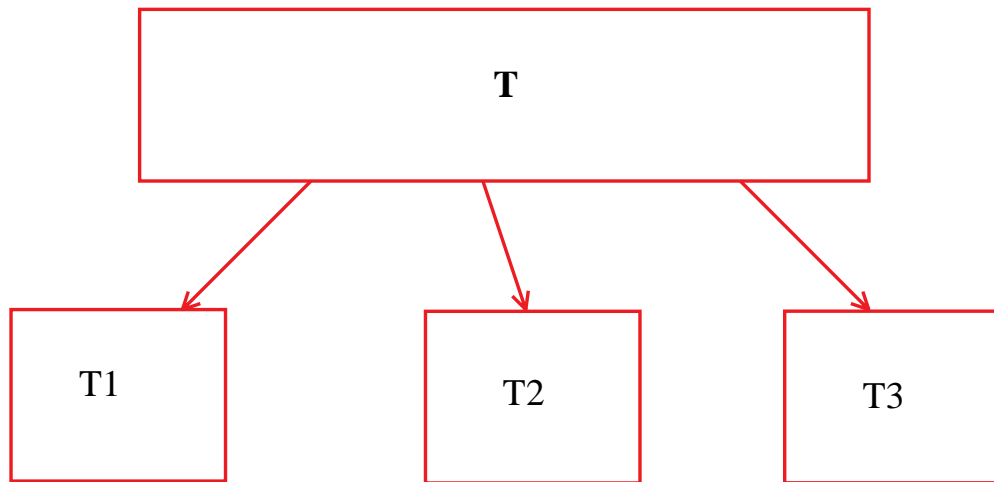
" It is the process of reducing a large table into smaller tables in order to remove redundancies and anomalies by identifying their functional dependencies is known as Normalization . "

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 Form .

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.

1. First Normal Form (1NF) :

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

QSPIDERS

<u>OID</u>	<u>NAME</u>	<u>COURSE</u>
1	A	JAVA
2	B	JAVA , SQL
3	C	MT , SQL
1	A	MT



<u>OID</u>	<u>NAME</u>	<u>C1</u>	<u>C2</u>	<u>C3</u>
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**)

<u>Eid</u>	<u>ename</u>	<u>sal</u>	<u>Deptno</u>	<u>dname</u>	<u>Loc</u>
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)

<u>Eid</u>	<u>ename</u>	<u>sal</u>	<u>DNO</u>
1	A	100	10
2	B	120	20
3	C	320	10

<u>Deptno</u>	<u>dname</u>	<u>Loc</u>
10	D1	L1
20	D2	L2



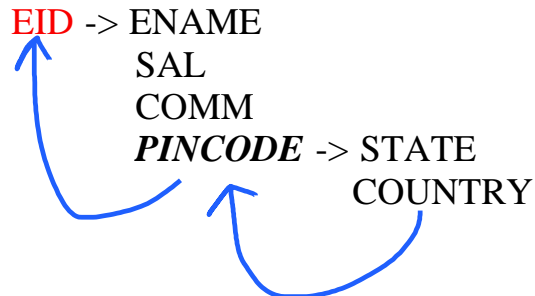
3	C	320	10
4	D	251	10

20	D2	L2
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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)



:- Transitive Functional Dep

R1- (**eid** , ename , comm)

R2- (**pincode** , state , country)

