

Summary Normalization Lesson

1. Normalization is the process of reducing data redundancy in a table and improving data integrity.
2. The benefit of using Normalization are:
 - Decrement redundancy data
 - We can minimize null values by using normalization.
 - Minimize or avoid data modification problems
 - The database structure is clearer and easier to understand.
3. Problems of database without normalization are:
 - Insert Anomaly: This happens when we cannot insert data into the table without another
 - Update anomaly: This is due to data inconsistency caused by data redundancy and data update.
 - Delete exception: Occurs when some attributes are lost due to the deletion of other attributes.
4. Basic normal form :
 - First normal form rules:
 - Each attribute of table must have only one value.
 - One attribute have the same data type.
 - Each attribute in a table should have unique name
 - The order in the table is not the problems.

Example: table that follow First normal rules:

STUDENT		
STUDENT ID	STUDENT NAME	COURSE ID
1	Senghak chhun	D-1
2	Roth kh	D-2

- Second normal form rules:
 - The table should follow rules of first normal form.
 - None attributes.

Example: table that follow second rules

STUDENT		
STUDENT ID	STUDENT NAME	COURSE ID
1	Senghak chhun	C-1
2	Roth kh	C-2
course		
COURSE ID	COURSE NAME	DURATION
C-1	Database	30 Hour
C-2	leadership	40 hour

➤ Third normal form rules:

- The table should follow rules of second normal form.
- Table no transitive dependencies.

Example: table follow third normal rules:

course		
COURSE ID	COURSE NAME	DURATION
C-1	Database	30 Hour
C-2	leadership	40 hour

SCORE		
STUDENT ID	COURSE ID	SCORE
1	C-1	80
2	C-2	30

STUDENT		
STUDENT ID	STUDENT NAME	COURSE ID
1	Senghak chhun	C-1
2	Roth kh	C-2