

30/9/25

TASK-8

Normalizing databases using functional dependencies upto
BCNF

:- To implement the normalization database upon relational table
Created in table 2 perform normalization up to BCNF on given
dependence on following in concerned relation specified below

1. Define Employee attributes Employee-ID, name, department, Job-title,
Doctor-id, Home-Date:

2. Define relational Doctor-patient (Patient-ID, Name, Department,
Medicine-ID, Doctor-ID)

3. Determine functional dependence (FD) b/w attributes:

Patient-ID \rightarrow Name, Department, Salary-ID, Doctor-ID,

- Department \rightarrow Doctor-ID

- Doctor-ID \rightarrow Name.

Step 2: Convert into INF

1. Eliminate repeating groups in arrays

2. Create separate tables for each repeating group.

Step 3:- Convert in 2NF

1. Create each non-key attribute depends on the entire primary key.
2. attr depend on only part of primary key. Create department table: Department (Dept-ID,...

Step 4:- Convert to 3NF

1. Ensure then one no transitive department.
2. move non-key attr to separate table they depend on another non key attributes. Create Doctor table: Doctor (Doctor-ID, name)
update department table: Department (Department-ID; Doctor-ID)

Step 5:- Convert into BCNF

1. Ensure Every determinant is a candidate key &
2. Create for Generating Candidate keys.
3. Decompose relation to Eliminate redundancy.

Using Griffith Tool

1. Inspect relational schema & functional dependencies.
2. griffith tool generate a dependency graph.
3. Analyze the graph to plenty normalize insure.
4. Apply normalization rules to transform the schema.
5. Verify the generated schema meets BCNF (griffith tool).

griffith dbt steps

1. Create a new project in griffith
2. Define the relational schema & FDs
3. Run the "Dependency graph" tool.
4. Analyze the graph for normalization issues.
5. Apply transformation using the normalize tool.
6. Verify BCNF Compliance using the 'BCNF check' tool

Normalized Schema

1. Patient (Patient-ID, Name, medicin-name, ~~medicin~~ doctor-ID)
2. Department (Department-ID, doctor-ID)
3. Doctor (Doctor-ID, name).

VEL TECH	
EX NO.	Q
PERFORMANCE (5)	Q
RESULT AND ANALYSIS (5)	Q
VIVA VOCE (5)	✓
RECORD (5)	✓
TOTAL (20)	15
SIGN WITH DATE	80 14/10

Result:- Thus the implementation of normalizing database using functional dependencies upto BCNF has been executed successfully