Task - 8

Normalizing databases using functional dependencies upto BCNF
(TOOL: GU / Table Normalization Tool, ALM : Jigsaw)

upto relational tables created in task-2, perform Normalization
upto to BCNF based on given dependencies as following for the
assumed relations specified below.

1. Identify Mobile phone attributes : phone -ID, Mobile
   - name, mobile -price, Date.

2. Define relations schema: mobile (phone-ID, Mobile - name,
   mobile - Data, mobile - price

3. Determine functional dependencies (FOS) '
   between attributes
   - mobile-Name, phone-ID, mobile-price,
   mobile-Data

step 2: Convert to 1NF

> * No repeating groups or arrays
>
> * All attributes are atomic
>
> * The schema in CNF

step 3: Convert to 2NF

> * All primary keys are single - column keys,
>   so no partial dependencies:

Output: The schema is already in 2NF.

step 4: Convert to 3NF

> Eliminate Transistive Dependencies
> * product = ID → category ID → category - Name
>
> → move category - Name to generate categories
>   table.

→ User → ID → Name, Email, Address, phone.

    → Already inspect user table

• phone → ID → uses → uses Details

→ No redundancy, as only user-ID is stored in phones

All transistive dependencies removed

Step 5: Convert to BCNF

    check if every determinant is a candidate key.

→ uses for their repective tables

    *Foreign keys like category-ID, uses-ID

    Ex ------- do not violate BCNF, rules.

All FD's empty with BCNF No Further decomposition needed

Using Griffith tool:

* INPUT relational schema. and functional dependencies

* Griffith tool generates a dependency graph.

* Analyze the graph to identify Normalization issues

+ All FD's empty with BCNF no Further decomposition. needed.

Griffith tool steps:

1) Crease a new project in Grietich.

2) Define the relational schema and FD;

3) Run the Dependent graph / "tool"

4) Verify BCNF compline using the 'BCNF check" tool

30/9/2

Result: Thus, the normalizing Database using functional dependencies upto BCNF has been completed successfully.