TASK 8 - Normalizing database using functional dependencies upto BCNF (Tool: GuiTable normalization Tool, ALM. Jigsaw).

Aim :- To perform normalization upto BCNF based on given dependencies

mobile phone database :

1. identify mobile phone attributes : phone -100, mobile-name, mobile-price, date.

2. Define relations schema. : mobile (phone -ID, mobile name, mobile-data, mobile+price)

3. Determine functional dependencies (FDS) 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 1NF

step 3 : convert to 2NF

* All primary keys are single-column keys, so no partial dependence

output* : The schema. is already in 2NF.

step 4 : convert to 3NF

    Estimate Transitive dependencies

③ Product - ID → category ID → category → Name

→ move category-Name to generate categories valid table

④ Phone -ID → uses → uses Details

④ No redundancy as only use -ID is store in phones

All transitive dependencies removed

steps : convert to BCNF

check if every determinant is a candidate key.

① user. For their respective tables.

② Foreign key like category-ID, user-ID, ex... do not via one
are BCNF rules.

③ If FD's empty with BCNF no further decomposition needed.

using griffitch Tool :

1. Input relational schema. - are functional dependencies

2. Griffitch Tool generates a dependencies group?n.

3. Analyze the graph to identify normalization issues

4. FD's empty with BCNF no further. decrementio
decomposition needed.

5. verify the resulting schema. meets BCNF criteria

Griffitch Tool steps :

1. create a new project in. Griffitch

2. cretate the relational schema, and FD

3. Run the "dependency graph" tool.

4. Analyze the graph for normalization issues

5. Apply transformations using the normalization tool.

6. verify BCNF compare using the BCNF check. tool.

Normalized schema:

• Users (user-ID, Name, Email, Address, categories,

(category ID, name of the category)

mobile (phone-ID, name, category, price)

mobile details (phone-ID, quantity, price, payment-ID, Total-amount #)

Result: Thus the implementation of normalizing one database upto BCNF based on given dependcies was execute. successors successfully