Task 10: Normalizing data bases using functional dependencies upto third normal form

Aim:

To normalizing the below relation and create the simplied table with suitable constaint cricket board (board ID, Name, Address-contact us Team ID, Tname, coach, captain, Player ID, Id name, Pl name, Age, P date of birth Playing ID, I t name, PLname

Email: contact no, batting bowling, matched Match-data, time, result

Ground ID: G Name: location, capacity, umpire ID, of name, vlname, vage, vdate of birth, country vemail, v contact-no)

a) Apply the functional dependency, normalization
b) Normalize there relation using fD+ and gt
c) Find the minimal cover central cover
d) Normalize to 2nd, add alter constants if necessary
e) Normalize to 3rd, add, alter, constants of nellesary

Procedure:
Normalize the given relation and create simplified tables with suitable constraints, we need to identify the functional dependencies and separate into different tables

Functional dependency

Board ID → Name, Address, contact no.
Team ID → TName, coach, captain
Player ID → PFname, PLname, Age, P date of birth
Playing role, email contact no.: Batting bowling
Match ID → Match-Date, time, result, ground ID
ground ID → GName, VLName, Vage
country, Vemail, V contact no.

Now, we can create simplified tables

cricket - ND)
cricket - Team (team (team ID (PK), TName, Address, contact no.)
cricket Team (Team (team ID (PK) TName, Coach captain)
Name, P LName, Age, P date of birth
Playing role, email, contact-no., batting bowling
cricket ground (ground ID) GName, Vcle country)

First normal form

The given relation into first normal form (1NF) to need to ensure that each attribute (colum) contains atomic(individual)values and there are no repeating groups(or) arrays

Second normal form

To determine whether the given relation is the second number form(2NF), we need to check two conditions.

The relation must already be in 1NF (first normal form)

It appears that the Potential candidate keys could be

1. Board ID
2. Team ID
3. Player ID
4. Match ID
5. Umpire ID

Next, we need to check if all non-Prime attributes are fully functionaly dependent on their respective candidate key(s).

Thermal normal form

To determine whether the given relation is in the third normal form(3NF) need to check two conditions

1. The relation must be already be in second normal form
2. There should be no transitive dependences b/w non-Prime attributes and candidate keys

Now let's analyze each function dependency and check for transitive

Board ID → Name, Address, contact no.

Player ID → Pl Name, Pl name, Age, DoB
Playing role, email, contact-no,

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|---|---|
| EXAM | 10 |
| PERFORMANCE (5) | 5 |
| RESULT AND ANALYSIS (5) | 5 |
| VIVA VOCE (5) | 5 |
| RECORD (5) | 5 |
| TOTAL (20) | 20 |
| SIGN WITH DATE | |

Result

Thus the normalization of intege relation is created the simplified tables with suitable constrant successfully