Task-10:- Normalization database using functional dependencies upto third normal form

Aim:- TO normalization the below relation and create the simplified table based suitable constraints.

Cricket board (bno and I.). name, address, contact no, team ID, image, coach, captain, playerID, PF name, PL name, age, playing role, email, gresult no, aname, location, capacity, umpire ID, UFName, ULname, UAge, u date of birth, country, email, u contact no).

Procedure:-

Normalize the give relation and create simplified tables with suitable constraints, we need to identify functional depecies and separate them into different tables

functional dependency:

Board ID - Name, address, contact NO

Team ID - Tname, Coach, Capatain

Player - PF Name, PLName, Age, Date of Birth, playing role, email, Contact NO, batting, bowling

match ID - match date, time, result, ground ID.

ground - g name, Location, Capacity

Now, we can create simplified tables,

cricket board (team (PK), Tname, Coach, Captain).

Cricket Player - (Player ID (PK) team ID (FK) PName, PAge, PDOB.

cricket table all non-prime attributes using ak

Board table : Board ID (PK) name, address, Contact No

Team table : team ID (PK). TName, Coach, Captain

match table : ground ID (FK). TName, Coach, captain

match table : ground ID (FK). team ID (FK). matchdate time, result

ground table :- ground ID (PK). aname location, Capacity

Umpire Table :- Umpire ID (PK), UFname, UFL Name, UAge, udateofbirth, country, email, Contact No

First normal form:-

The given relationship into first normal form (1NF) bo need to ensure that each attribute contain atomic values, and there are no repeating, group or array, based on the provided relation it appear that each attribute already contain atomic values, so there are no repeat group to eliminate

Second normal form:-

To determine whether the given relation in second normal (2NF), we need to check two conditions
the relation must already be in 1NF (First normal form) it appears that potential conditional key 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 attribute are fully function dependent on their respective conditional key (P).

Third normal form:-

To determine whether the given relation is in Third normal form (3NF), need to check two condition

1. The relation must already be in second normal form
2 These, should be no transitive dependencies b/w non prime attribute and condition keys

The given relation satisfies the conditions of second normal form (2NF), now, lets, check for transitive dependent

Board → name. address. Contact no

Team ID → T name. coach. captain

player ID → P name, P name, age. date of birth
playing role, email, contract - a[illegible] batting, bowling
match ID → match date, time, result ground ID
ground ID → Gname, location, Capacity

VEL TECH - CSE	
EX NO.	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 given relation is created the simplified tables with suitable constraint successfully