Task-2 Generating design of other traditional database model

Aim: Creating Hierarchical Network model of the database by enhancing the sound abstract data by performing following tasks using forms of inheritance.

A. identify the specificity of each relationship, find and form the surplus relation.

Entity identification:-

- Cricket Board has multiple teams.
- Team 1 consists of multiple players
- match involves multiple teams and is played on a Ground.
- umpire supervise the match.

Specificity Analysis:

- CricketBoard <-> team → one-to-many
- Team <-> player → many-to-many → team_player
- match <-> team → many-to-many → match_team
- match <-> Ground → one-to-one

Surplus Relations (Associative tables)

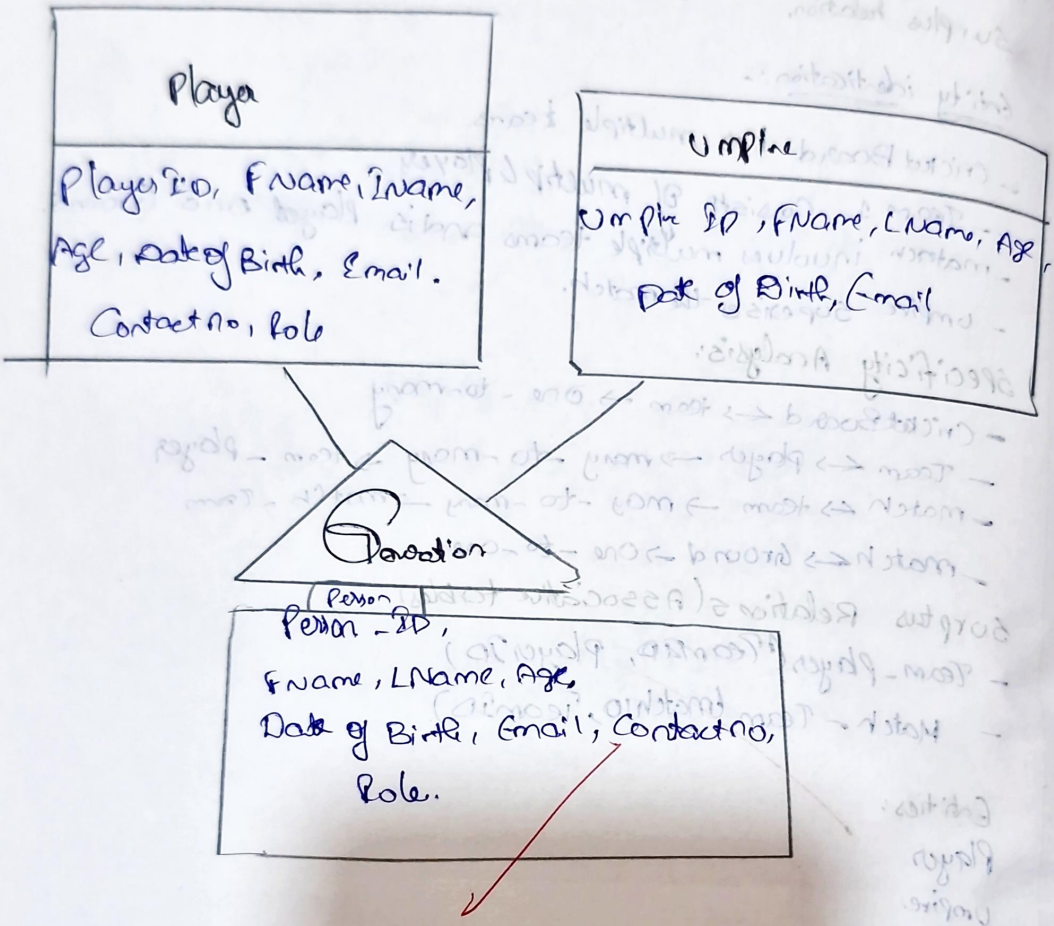
- Team_Player (TeamID, PlayerID)
- Match_Team (MatchID, TeamID)

Entities:
Player
Umpire

Attributes:
the above Entities have common attributes attributes like first_Name, last_Name, Date_of_Birth, age, Contact_No,

Potential Generalization:
Create a superclass called "Person" to represent the common attributes shared by Player and umpire. the "Person" Entity would have the following attributes

Person_ID (Primary key)


Player
PlayerID, FName, LName,
Age, Date of Birth, Email.
Contact no, Role
Umpire
Umpire ID, FName, LName, Age,
Date of Birth, Email
Generation
Person
Person_ID,
FName, LName, Age,
Date of Birth, Email, Contact no,
Role.

first_NAme
last_NAME
Date_of_Birth
Age
Contact_Number
Email

Subclass:

Players: Inherited attributes from "person" and add specific of the attributes like player_id umpire: Inherited attributes from "person" and specific attributes like umpire_id.

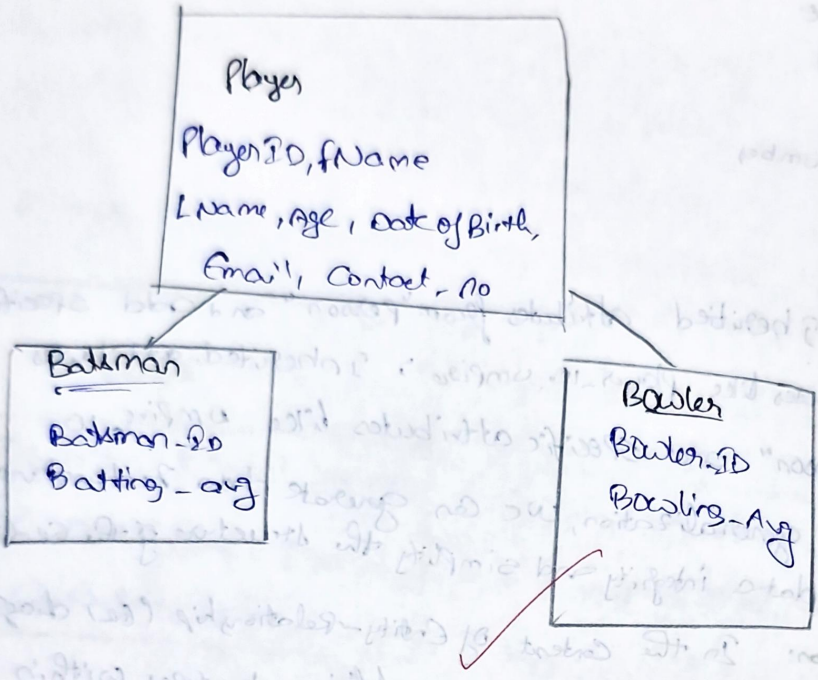
By using generalization, we can generate data redundancy improve, data integrity and simplify the structure of the ER diagram.

Specialization: In the context of Entity-Relationship (ER) diagrams, Specialized refers to the process of defining subtypes within an Entity type of the parent entity.

In the case of Tamil Nadu Cricket Board Association, lets Consider, the specialization of the "Player" Entity into two subtypes: "Batsman" and "Bowler". This specialization is based on the specific roles that players can have in cricket. Here's the modified ER diagram with specialization

2.c Find the domain of the attribute and Perform check constraint to the applicable

Attribute	Domain	Check constraint Example
Age	integer	Check (length(Contact_No) Between 10 and 15)
Email	Varchar	Check (Email like '%@%.%')
Capacity	integer	check (capacity > 0)
PlayingRole	varchar	Check (PlayingRole IN ('Batsman', 'Bowler', 'AllRounder', 'Wicket-Keeper'))


Player
PlayerID, fName
LName, Age, Dob of Birth,
Email, Contact_no
Batsman
Batsman_ID
Batting_avg
Bowler
Bowler_ID
Bowling_Avg

SQL > ALTER Table Player ADD (Constant check - Con CHECK)
(Age > 18);

Table altered

2d. Rename the relations:

Renaming a table (relation) in SQL can be accomplished using the ALTER TABLE statement with the RENAME TO clause. The specific syntax for renaming tables varies slightly between different database management systems.

Here's the syntax for renaming a column in the table.

SQL > Alter table umpire RENAME column Contact_no TO Phone_no; Table Altered.

SQL > DESC umpire

NAME	NULL? Type
UMPIREID	VARCHAR 2
FNAME	VARCHAR 2(30)
LNAME	VARCHAR 2(30)
AGE	NUMBER 2(5,2)
DATE of Birth	~~VAR CHAR 2(30)~~ DATE
COUNTRY	VARCHAR 2(30)
EMAIL	VARCHAR 2(40)
PHONE_NO	NUMBER

2.e perform SQL relations using DDL, DCL commands.

DSL stands for Data Controll language which is a subject of SQL (Structured Query language used to control access to data in a database. DCL commands and responsible for managing user permissions, granting privileges, and controlling data security within a database System There are two primary DCL commands

1. Grant
2. Revoke

Grant: The GRANT command is used to Provide specific Privileges to users of roles, allowing them to perform certain actions on database objects (e.g. views, procedures).
SELECT, INSERT, UPDATE, DELETE, EXUAEUTE, and more

SQL > create user Raj identified by Kumaj;

user created
SQL > grant resource to raj;
Grant succeeded;
SQL > Conn
Enter user-name: raj
Password:
Connected.
SQL > Creak table Emp (eno number ename varchar (10));
Table created.
SQL > ~~Conn~~ Conn system/manager
Connected.
SQL > grant all on umpire to raj;
Grant succeeded.

VEL TECH - CSE	
EX NO.	
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	

Result:
Thus the Hierarchical model and network model has been successfully created.