Task-2

Generating design of other traditional database model.

Aim:

creating Hierarchical / Network model of the database by changing the sound abstract data by enhancing data by performing following task using forms of

a. identify the specificity of each relationship, find and form surplus relations.

b. check is-a hierarchy/has-a hierarchy and performs generalization and/or specialization relationship.

c. Find the domain of the attribute and per form check constaint to the applicable

d. Rename the relations.

e. perform SQL Relations using DDL, DLL commands.

a. Identify the specificity of each relationship, find and form surplus relations

entity Identification:

- cricket Board has multiple teams
- Team consists of multiple players
- match involves multiple teams and is played on a ground

specificity analysis:

- cricket Board ⟷ 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)

b. Check its hierarchy, does it perform generalization and / or specialization relationships

Generalization

In the ER diagram for the Tamil Nadu Cricket Board (TNCA) described earlier, we can identify common attributes or relationship among entities Here's an example of a possible generalization:

Entities:

player

Umpire

Attributes:

The above entities have common attributes like First-Name, Last-Name Date-of-Birth, Age, contact-No and Email,

potential Generalization:

create a super class called 'person' to represent would have the following attributes:

person-ID (primary key)

First-ID (primary key)

last-Name

Date-of-Birth

Age

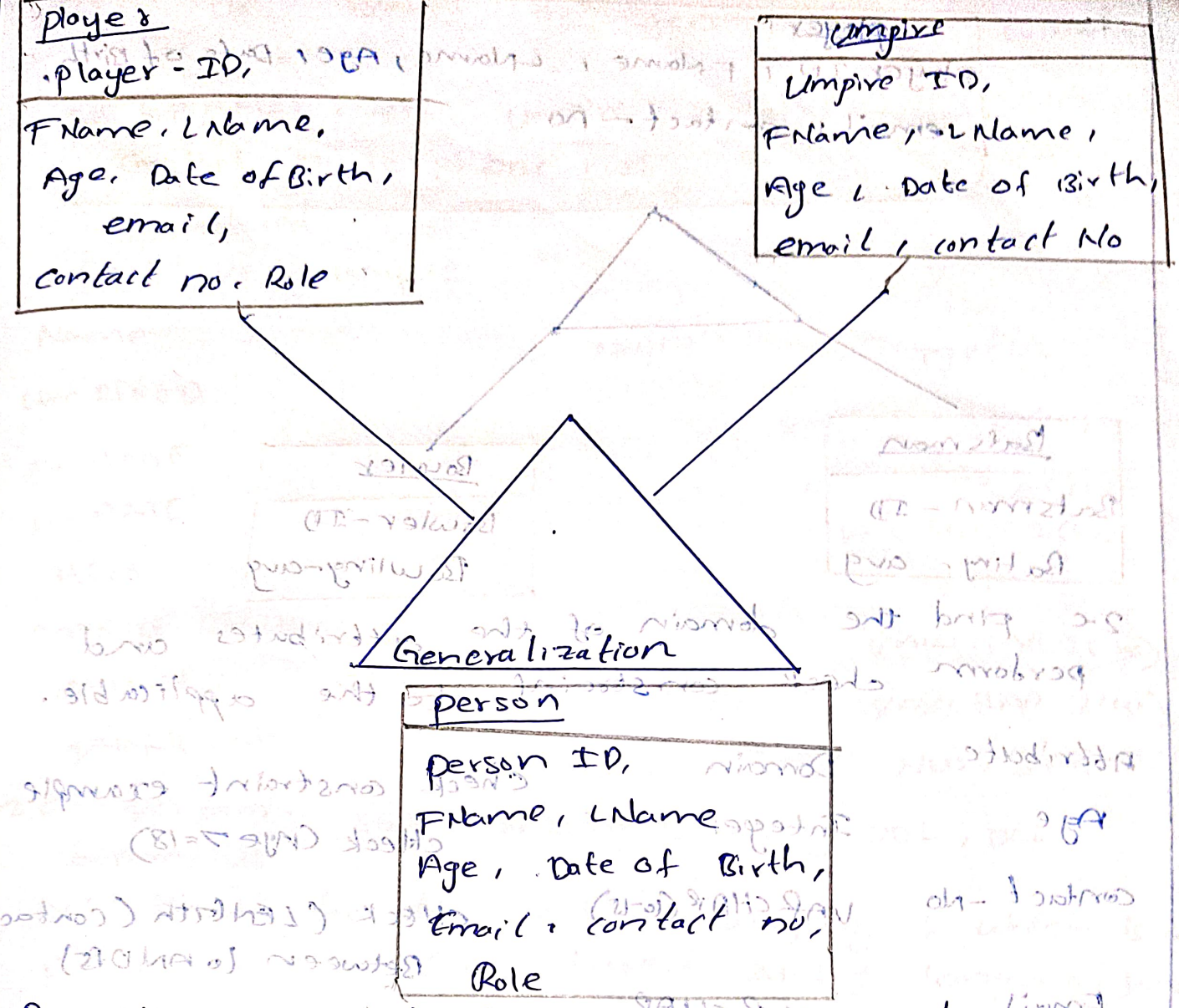
contact-Number

Email

Subclasses:

player: Inherited attributes from "person" and add specific attributes like player-ID

umpire: Inherited attributes from "person" and add specific attributes like umpire-ID

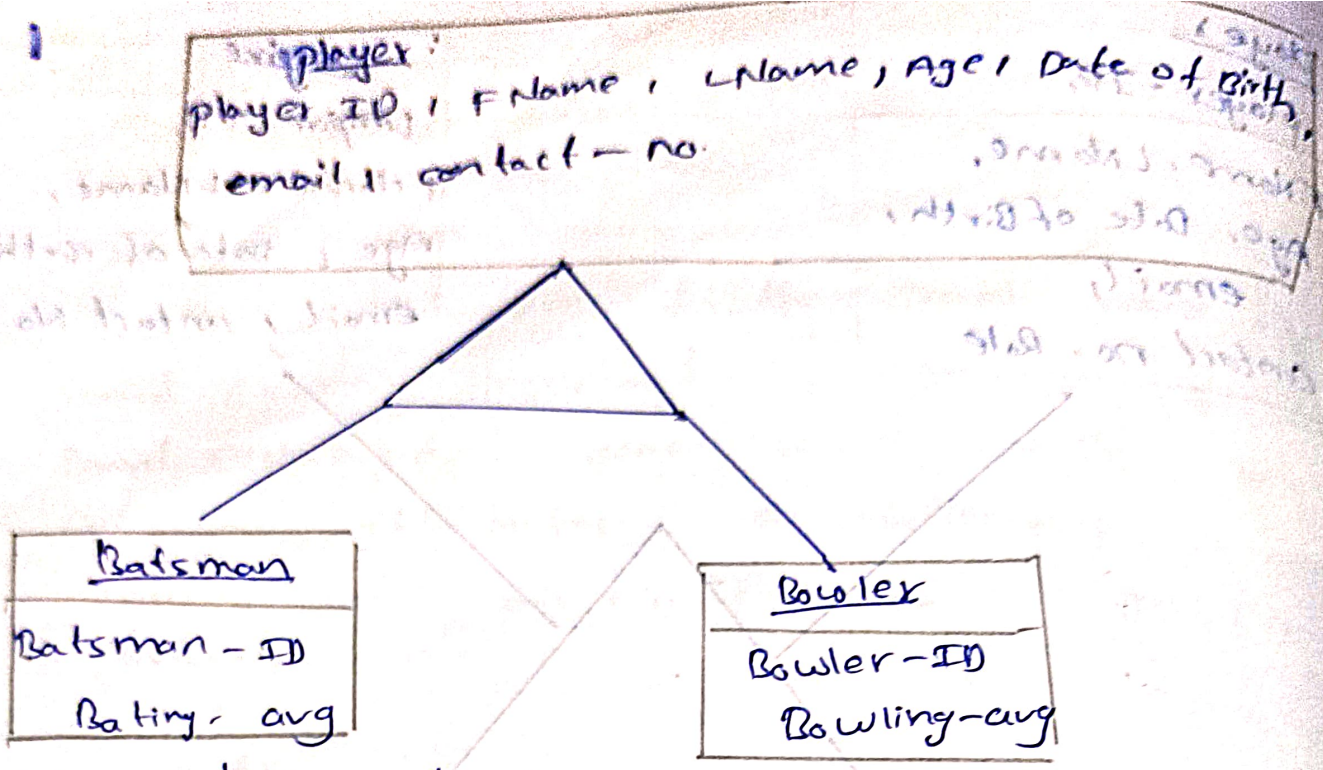


- By using generalization, we can reduce data reducing, improve data integrity, and simplicity the structure of the ER diagram. this approach also allows for easier maintenance and updates as changes made to the attributes shared by all "person" entites will be automatically reflected in the subclasses.

Specialization

In the context of entity-Relationship (ER) diagrams, specialization of the "player" entity into two subtypes: "Batman" and "Bowler". this specialization is based on the specific roles that players can have in cricket.

Here's the modified ER diagram with the specialization:



2.c Find the domain of the attributes and perform check constraint to the applicable.

Attribute	Domain	check constraint example
Age	Integer	check (Age >= 18)
contact-No	VARCHAR(10-15)	CHECK (LENGTH (contact Between 10 AND 15)
Email	VARCHAR	CHECK (Email LIKE '..'
capacity	Integer	CHECK (capacity > 0)
Playing Role	VARCHAR	chck (playing Role IN) ('Batsman', 'Bowler', 'all-Rounder', 'wicket-keeper'))

SQL > ALTER TABLE PlyER ADD CONSTRAINT CHECK - con CHECK (age >= 18);

Table altered

2.d Rename the relations:

Renaming a table (relation) in SQL can be accomplished using the specific syntax for renaming tables varies slightly between

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

```
SQL> After table umpire RENAME column
  contact-no TO phone-no;

Table altered.
SQL> DESC umpire
```

Name	Null?	Type
UMPIRED		VARCHAR2(10)
FNAME		VARCHAR2(30)
LNAME		VARCHAR2(30)
AGE		DATE
DATE OF BIRTH		VARCHAR2(35)
COUNTRY		VARCHAR2(40)
PHONE-NO		NUMBER

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

DCL stands for data Control language; which is a subset of SQL (structured query language) used to control access to data in a database. DCL commands are responsible for manging user permissions, granting privileges, and controlling data security within a data base system. there are two primary

DCL commands:

1. Grant
2. Revoke

The GRANT command is used to provide specific privileges to users or roles, allowing them to perform certain actions on data base objects (eg. tables views, procedures).

privileges may include SELECT, INSERT, UPDATE

DELETE, EXECUTE, and More.

SQL> create user Raj identified by kumar;
User created.

SQL> grant resource to raj;
Grant succeded

SQL> grant create session to raj;
Grant succeeded.

SQL> conn
Enter user-name: raj
Enter password:
connected:

SQL> create table empleno number, ename varchar(10);
Table created.

SQL> conn system/manger
connected

SQL> grant all on umpire to Raj;
Grant succeded.

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EX NO.	2
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	15
SIGN WITH DATE	29/1/25

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