

NATIONAL INSTITUTE OF TECHNOLOGY ,WARANGAL  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

## DBMS PROJECT



International Cricket Council Database

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## **Problem Statement:**

**The database design of International Cricket Council(ICC)**

**In this project we have designed a database for international Cricket Council(ICC) which helps the system to manage the information on 'matches' , 'tournaments' , 'players' etc. This will be managed by ICC.**

**All the approvals and the activities are being headed by the admin of the ICC named as ICCadmin. This will help them to maintain the each players records, information about the tournament, Stats of each and every match which is very well required for the Smooth conduction of the tournaments.**

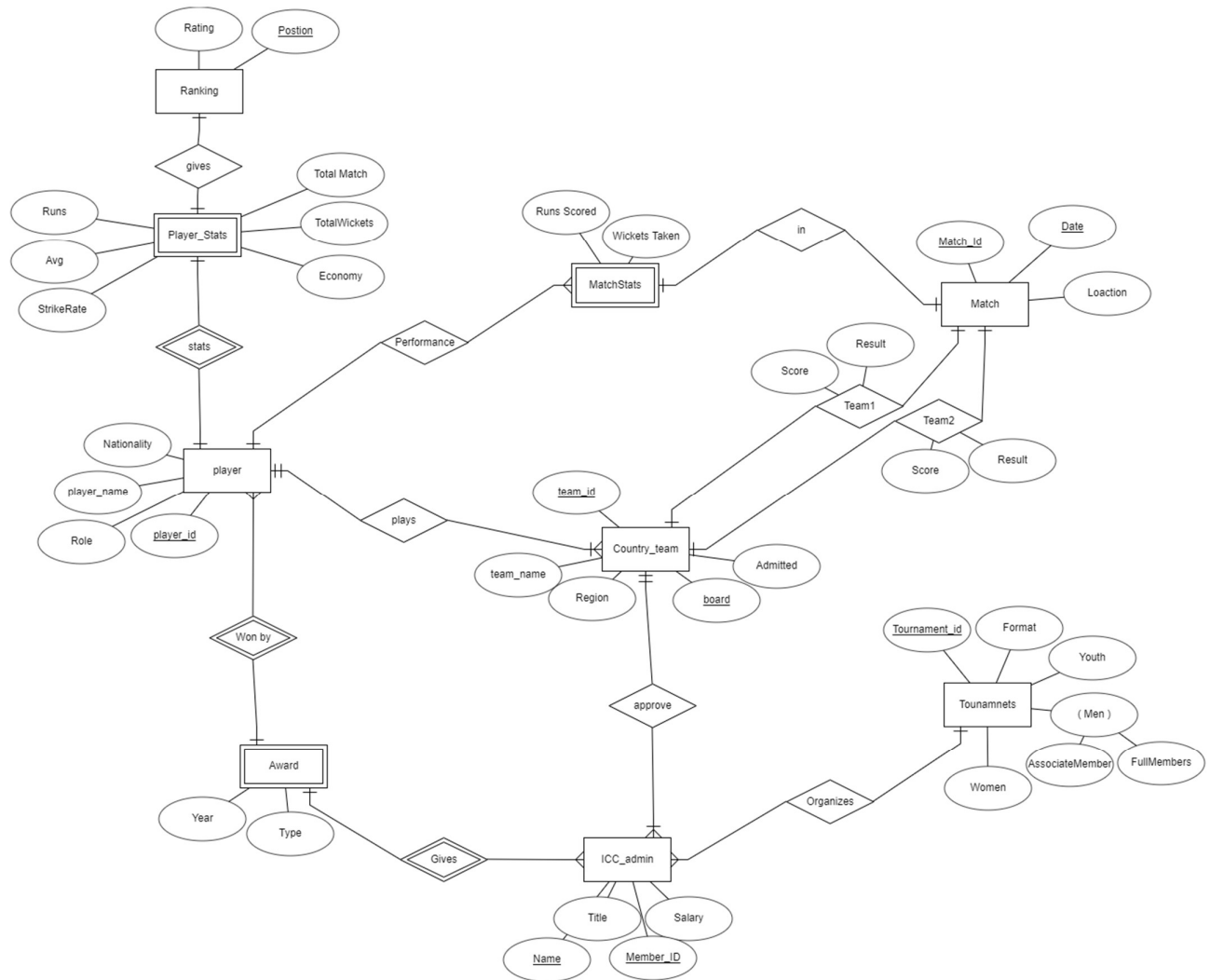
**The database also contains the stats of each and every players by which we can keep track of their rankings and the awards can be distributed accordingly, which must be done by a good database.**

**The database rather working on each player works for the each match also so that we can keep track of each match stats and can improve the ranking of country team by it. It gives us facility to manage tournaments and awards accordingly.**

**The database also contain the information about the board members, Their names, id and other information so as to ease the functioning of the database for the users.**

## ER diagram:

The ER diagram for the database which depicts all the information about how the database is managed by the admin.



# **NORMALISATION**

## **1. ICC\_Admin**

- **Member\_id**
- **Name**
- **Title**
- **Salary**

All the attributes are atomic which implies that the table is in 1NF.  
The only functional dependency in this table is also only of the primary key.

**Member\_ID -> (Name, Title, salary)**

So, it is assured that the table does not contain any partial or transitive dependencies, which also implies that the table is obeying both 1NF, 2NF, 3NF and BCNF.

## **2. Country\_team**

- **Team\_id**
- **Team\_name**
- **Admitted**
- **Board**
- **Approved\_by**

All the attributes are atomic which implies that the table is in 1NF. The only functional dependency in this table is also only of the primary key.

**Team\_id -> (team\_Name, admitted, board, approved\_by)**

So, it is assured that the table does not contain any partial or transitive dependencies, which also implies that the table is obeying both 1NF, 2NF, 3NF and BCNF.

## **3. Player**

- **Player\_id**
- **Player\_name**
- **Role**
- **Team\_id**

Player table is similar to the lcc\_admin. So, the table Player also obeys 1NF, 2NF, 3NF and BCNF.

#### 4. Tournament

- Tournament\_id
- Format
- Full\_member
- Associate\_member
- Women
- Youth

Tournament table is similar to the Player. So, the table Tournament also obeys 1NF, 2NF, 3NF and BCNF.

- All the identifying relationships in the ER diagram have been merged into the tables of their respective weak-entities since they are redundant.

#### 5. Award

- Type
- Year
- Member\_id
- Player\_id

This table has the only functional dependency as that of the primary key.

(Type,Member\_id,Player\_id)->Year

So, it is in BCNF which implies it also obeys 1NF, 2NF, 3NF.

#### 6. Match

- Match\_id
- Match\_date
- Location
- Team1\_id
- Team2\_id
- Team1\_score
- Team2\_score
- Winning\_team

Match table is similar to the Player. So, the table Match also obeys 1NF, 2NF, 3NF and BCNF.

### 7. Match\_stats

- Match\_id
- Player\_id
- Runs
- Wickets

Here also, FDs are

Match\_id → (Player\_id, Runs, wickets)

So, it is in BCNF.

### 8. Player\_stats

- Player\_id
- Total\_match
- Total\_run
- Avg
- Total\_wicket
- Economy

It is weak entity set so here, there will be no primary key.

Table is already in BCNF.

### 9. Ranking

- Player\_id
- Rating
- Position

FD: Player\_id → (rating, position)

As only primary key is involved in functional dependency. So the criteria of 1NF, 2NF, 3NF and BCNF are satisfied.

# RELATIONAL SCHEMAS

## 1. ICC\_Admin

❖ COLUMN_NAME	❖ DATA_TYPE	❖ NULLABLE	DATA_DEFAULT
MEMBER ID	VARCHAR2 (30 BYTE)	No	(null)
NAME	VARCHAR2 (30 BYTE)	Yes	(null)
TITLE	VARCHAR2 (30 BYTE)	Yes	(null)
SALARY	NUMBER (38, 0)	Yes	(null)

## 2. Country\_team

❖ COLUMN_NAME	❖ DATA_TYPE	❖ NULLABLE	DATA_DEFAULT
TEAM ID	VARCHAR2 (30 BYTE)	No	(null)
TEAM NAME	VARCHAR2 (30 BYTE)	Yes	(null)
ADMITTED	NUMBER (38, 0)	Yes	(null)
BOARD	VARCHAR2 (30 BYTE)	Yes	(null)
APPROVED BY	VARCHAR2 (30 BYTE)	Yes	(null)

## 3. Player

❖ COLUMN_NAME	❖ DATA_TYPE	❖ NULLABLE	DATA_DEFAULT
PLAYER ID	VARCHAR2 (30 BYTE)	No	(null)
PLAYER NAME	VARCHAR2 (30 BYTE)	Yes	(null)
ROLE	VARCHAR2 (30 BYTE)	Yes	(null)
TEAM ID	VARCHAR2 (30 BYTE)	Yes	(null)

## 4. Tournament

❖ COLUMN_NAME	❖ DATA_TYPE	❖ NULLABLE	DATA_DEFAULT
TOURNAMENT ID	NUMBER	No	(null)
FORMATE	VARCHAR2 (50 BYTE)	Yes	(null)
FULL MEMBER	VARCHAR2 (50 BYTE)	Yes	(null)
ASSOCIATE M...	VARCHAR2 (50 BYTE)	Yes	(null)
WOMEN	VARCHAR2 (50 BYTE)	Yes	(null)
YOUTH	VARCHAR2 (50 BYTE)	Yes	(null)

## 5. Award

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT
TYPE	VARCHAR2 (70 BYTE)	No	(null)
YEAR	NUMBER (38,0)	Yes	(null)
MEMBER ID	VARCHAR2 (30 BYTE)	Yes	(null)
PLAYER ID	VARCHAR2 (30 BYTE)	Yes	(null)

## 6. Match

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT
MATCH ID	NUMBER (38,0)	No	(null)
MATCH DATE	NUMBER (38,0)	Yes	(null)
LOCATION	VARCHAR2 (30 BYTE)	Yes	(null)
TEAM1 ID	VARCHAR2 (30 BYTE)	Yes	(null)
TEAM1 SCORE	NUMBER (38,0)	Yes	(null)
TEAM2 ID	VARCHAR2 (30 BYTE)	Yes	(null)
TEAM2 SCORE	NUMBER (38,0)	Yes	(null)
WINNING TEAM	VARCHAR2 (30 BYTE)	Yes	(null)

## 7. Match\_stats

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT
MATCH ID	NUMBER (38,0)	Yes	(null)
PLAYER ID	VARCHAR2 (30 BYTE)	Yes	(null)
RUN	NUMBER (38,0)	Yes	(null)
WICKET	NUMBER (38,0)	Yes	(null)

## 8. Player\_stats

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT
PLAYER ID	VARCHAR2 (30 BYTE)	Yes	(null)
TOTAL MATCH	NUMBER (38,0)	Yes	(null)
TOTAL RUN	NUMBER (38,0)	Yes	(null)
AVG	NUMBER (10,5)	Yes	(null)
TOTAL WICKET	NUMBER (38,0)	Yes	(null)
ECONOMY	NUMBER (10,5)	Yes	(null)



## 9. Ranking

⚡ COLUMN_NAME	⚡ DATA_TYPE	⚡ NULLABLE	DATA_DEFAULT
PLAYER ID	VARCHAR2 (30 BYTE)	Yes	(null)
RATING	NUMBER (38, 0)	Yes	(null)
POSITION	NUMBER (38, 0)	Yes	(null)

## CREATION OF TABLE AND INSERTION OF DATA

```
CREATE TABLE icc_admin (  
    member_id VARCHAR2(30) PRIMARY KEY,  
    name      VARCHAR2(30),  
    title     VARCHAR2(30),  
    salary    INT  
)
```

```
CREATE TABLE country_team (  
    team_id    VARCHAR2(30) PRIMARY KEY,  
    team_name  VARCHAR2(30),  
    admitted  INT,  
    board     VARCHAR2(30),  
    approved_by VARCHAR2(30),  
    FOREIGN KEY ( approved_by ) REFERENCES icc_admin ( member_id )  
)
```

```
CREATE TABLE player (  
    player_id  VARCHAR2(30) PRIMARY KEY,  
    player_name VARCHAR2(30),  
    role       VARCHAR2(30),  
    team_id    VARCHAR2(30),  
    FOREIGN KEY ( team_id ) REFERENCES country_team  
)
```

```
CREATE TABLE tournament (  
    Tournament_id NUMBER PRIMARY KEY,  
    formate VARCHAR2(50),  
    full_member VARCHAR2(50),  
    associate_member VARCHAR2(50),  
    women VARCHAR2(50),  
    youth VARCHAR2(50)  
)
```

```
CREATE TABLE award (  
    type VARCHAR2(70) PRIMARY KEY,  
    year INT,  
    member_id VARCHAR2(30),  
    player_id VARCHAR2(30),  
    FOREIGN KEY ( member_id )  
        REFERENCES icc_admin ( member_id ),  
    FOREIGN KEY ( player_id )  
        REFERENCES player ( player_id )  
)
```

```
CREATE TABLE match (  
    match_id INT PRIMARY KEY,  
    match_date INT,  
    location VARCHAR2(30),  
    team1_id VARCHAR2(30),  
    team1_score INT,  
    team2_id VARCHAR2(30),  
    team2_score INT,  
    winning_team VARCHAR2(30),  
    FOREIGN KEY ( team1_id )  
        REFERENCES country_team ( team_id ),  
    FOREIGN KEY ( team2_id )  
        REFERENCES country_team ( team_id )  
)
```

```
CREATE TABLE match_stats (  
    match_id INT,  
    player_id VARCHAR2(30),  
    run INT,  
    wicket INT,  
    FOREIGN KEY ( player_id )  
        REFERENCES player ( player_id ),  
    FOREIGN KEY ( match_id )  
        REFERENCES match ( match_id )  
)
```

```
CREATE TABLE player_stats (  
    player_id VARCHAR2(30),  
    total_match INT,  
    total_run INT,  
    avg NUMERIC(10, 5),  
    total_wicket INT,  
    economy NUMERIC(10,5),  
    FOREIGN KEY ( player_id )  
        REFERENCES player ( player_id )  
)
```

```
CREATE TABLE ranking (  
    player_id VARCHAR2(30),  
    rating INT,  
    position INT,  
    FOREIGN KEY ( player_id )  
        REFERENCES player ( player_id )  
)
```

```
insert into icc_admin values('admin1','Manu Sawhney ','Chairman',1000000);  
  
insert into icc_admin values('admin2','Greg Barclay ','EX-Chairman',950000);  
  
insert into icc_admin values('admin3','Clare Connor ','Chair-Woman',590400);  
  
insert into icc_admin values('admin4','Clive Hitchcock ','Secretary',420000);  
  
insert into icc_admin values('admin5','Ranjan Madugalle ','Chief Refree',40000);  
  
insert into icc_admin values('admin6','Kyle Coetzer ','Associate Repr.',490000);  
  
insert into icc_admin values('admin7','David Kendix ','Statistician',140000);  
  
insert into icc_admin values('admin8','Matthew Mott ','Coach Repr.',306000);  
  
insert into icc_admin values('admin9','Nathalie Germanos ','Media Repr.',50000);  
  
insert into icc_admin values('admin10','David White ','Member Repr.',100000);
```

```
insert into country_team values('IND','India',1926,'BCCI','admin1');  
  
insert into country_team values('AUS','Australia',1909,'CA','admin3');  
  
insert into country_team values('ENG','England',1909,'ECB','admin4');  
  
insert into country_team values('SA','South Africa',1909,'CSA','admin2');  
  
insert into country_team values('WI','West Indies',1926,'WCB','admin4');  
  
insert into country_team values('PAK','Pakistan',1952,'PCB','admin6');  
  
insert into country_team values('SL','Sri Lanka',1981,'SLC','admin7');  
  
insert into country_team values('BAN','Bangladesh',2000,'BCB','admin3');  
  
insert into country_team values('AFG','Afghanistan',2017,'ACB','admin2');  
  
insert into country_team values('ZIMB','Zimbabwe',1992,'ZC','admin6');
```

```
insert into player values('p1','Virat Kohli','Captain','IND');

insert into player values('p2','Tim Paine','Captain','AUS');

insert into player values('p3','Joe Root','Captain','ENG');

insert into player values('p4','Babar Azam','Captain','PAK');

insert into player values('p5','Dimuth Karunaratne','Captain','SL');

insert into player values('p6','Sean Williams','Captain','ZIMB');

insert into player values('p7','Asghar Afghan','Captain','AFG');

insert into player values('p8','Dean Elgar','Captain','SA');

insert into player values('p9','Mominul Haque','Captain','BAN');

insert into player values('p10','Kraigg Brathwaite','Captain','WI');

insert into player values('p11','Rohit Sharma','Vice-Captain','IND');

insert into player values('p12','Pat Cummins','Vice-Captain','AUS');

insert into player values('p13','Ben Stokes','Vice-Captain','ENG');

insert into player values('p14','Shadab Khan','Vice-Captain','PAK');

insert into player values('p15','Dinesh Chandimal','Vice-Captain','SL');

insert into player values('p16','Craig Ervine','Vice-Captain','ZIMB');

insert into player values('p17','Rashid Khan','Vice-Captain','AFG');

insert into player values('p18','Temba Bavuma','Vice-Captain','SA');

insert into player values('p19','Mahmudullah','Vice-Captain','BAN');

insert into player values('p20','Roston Chase','Vice-Captain','WI');
```

```
insert into tournament values(1,'Test','ICC World Test  
Championship','None','None','None');
```

```
insert into tournament values(2,'One-Day','ICC Cricket World Cup','None',' ICC  
Women''s Cricket World Cup','ICC Under-19 Cricket World Cup');
```

```
insert into tournament values(3,'One-Day','None','ICC Cricket World Cup Qualifier','ICC  
Women''s Championship','ICC Under-19 Cricket World Cup');
```

```
insert into tournament values(4,'One-Day','ICC Cricket World Cup Super League','ICC  
Cricket World Cup League 2','None','ICC Under-19 Cricket World Cup');
```

```
insert into tournament values(5,'Twenty20','ICC Men''s T20 World Cup','ICC Men''s T20  
World Cup Qualifier','ICC Women''s T20 World Cup','None');
```

```
insert into award values('ICC Men''s Cricketer of the Year',2018,'admin2','p1');
```

```
insert into award values('ICC Men''s Test Player of the Year',2018,'admin3','p1');
```

```
insert into award values('ICC Men''s ODI Player of the Year',2018,'admin5','p11');
```

```
insert into award values('ICC ODI Team of the Year',2019,'admin7','p4');
```

```
insert into award values('Spirit of the Year',2019,'admin2','p1');
```

```
insert into award values('ICC Captain of the year',2019,'admin2','p1');
```

```
insert into match values(1,1986,'INDIA','IND',256,'AUS',240,'IND');
```

```
insert into match values(2,1975,'LONDON','WI',258,'AUS',174,'WI');
```

```
insert into match values(3,1945,'SOUTH AFRICA','WI',146,'BAN',155,'BAN');
```

```
insert into match values(4,1993,'SRI LANKA','ENG',360,'AUS',325,'ENG');
```

insert into match values(5,1997,'AUSTRALIA','SL',164,'AUS',136,'SL');

insert into match values(6,1998,'NEW YORK','BANG',192,'ZIMB',197,'ZIMB');

insert into match values(7,1999,'ENGLAND','IND',256,'PAK',165,'IND');

insert into match values(8,2005,'INDIA','IND',325,'ENG',340,'ENG');

insert into match values(9,2013,'WEST IDNIES','PAK',148,'AUS',256,'AUS');

insert into match values(10,2015,'ENGLAND','SA',196,'IND',356,'IND');

insert into match\_stats values(1,'p1',56,2);

insert into match\_stats values(2,'p10',89,1);

insert into match\_stats values(3,'p9',46,0);

insert into match\_stats values(4,'p3',35,3);

insert into match\_stats values(5,'p2',96,0);

insert into match\_stats values(1,'p11',78,1);

insert into match\_stats values(4,'p12',36,1);

insert into match\_stats values(7,'p4',45,1);

insert into match\_stats values(8,'p13',93,0);

insert into match\_stats values(3,'p8',16,2);

insert into player\_stats values('p1',243,3535,43.5,27,34.9);

insert into player\_stats values('p6',324,3331,23.5,9,46,35.3);

insert into player\_stats values('p7',543,5435,56.7,17,25.8);

```
insert into player_stats values('p8',353,5633,63.2,27,45.9);  
  
insert into player_stats values('p5',145,2553,64.1,27,63.7);  
  
insert into player_stats values('p9',635,5678,45.9,28,65.9);  
  
insert into player_stats values('p6',134,2456,23.7,37,66.4);  
  
insert into player_stats values('p4',254,6435,24.6,19,56.7);  
  
insert into player_stats values('p3',453,6743,58.1,26,66.5);  
  
insert into player_stats values('p10',145,3543,26.1,29,69.3);
```

```
insert into ranking values('p1',343,1);  
  
insert into ranking values('p3',543,6);  
  
insert into ranking values('p4',643,7);  
  
insert into ranking values('p17',637,25);  
  
insert into ranking values('p5',367,8);  
  
insert into ranking values('p9',274,56);  
  
insert into ranking values('p8',398,23);  
  
insert into ranking values('p12',578,14);  
  
insert into ranking values('p15',389,24);  
  
insert into ranking values('p7',789,34);
```