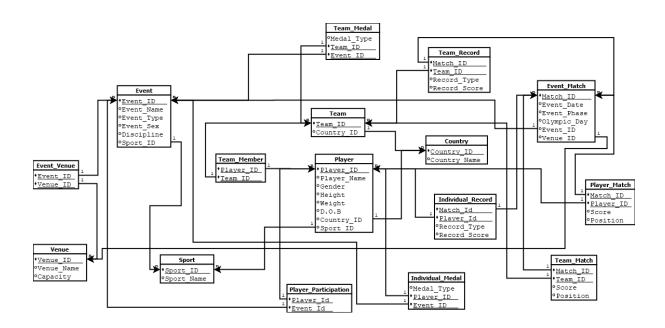## Relational Schema:

Relations :

Country (*Country_Id* , Country_Name)

Sport (*Sport_Id* , Sport_Name)

Player (*Player_Id* , Player_Name, Gender, Height, Weight, D.O.B, Country_Id , Sport_Id)

Event (*Event_Id* , Event_Name, Event_Type, Event_Sex, Discipline, Sport_Id)

Venue (*Venue_Id* , Venue_Name, Capacity)

Team (*Team_Id* , Country_Id)

Player_Participation (Event_Id, Player_Id)

Team_Member (Team_Id, Player_Id)

Event_Venue (Event_Id, Venue_Id)

Individual_Medal (*Event_Id* , *Player_Id,* Medal_Type)

Team_Medal (*Event_Id* , *Team_Id,* Medal_Type)

Event_Match (*Match_Id* , Event_Phase, Event_Date, Olympic_Day, Event_Id , Venue_Id)

Player_Match (Match_Id, Player_Id, Score, Position)

Team_Match (Match_Id, Team_Id, Score, Position)

Individual_Record (Match_Id, Player_Id, Record_Type, Record_Score)

Team_Record (Match_Id, Team_Id , Record_Type, Record_Score)

Country : BCNF

FDs
Country_Id → Country_Name
Country_Name → Country_Id

Primary Key - Country_Id

Sport : BCNF

FDs
Sport_Id → Sport_Name
Sport_Name → Sport_Id

Primary Key - Sport_Id

Player : BCNF

FDs
Player_Id → Player_Name
Player_Id → Gender
Player_Id →Height
Player_Id → Weight
Player_Id → D.O.B
Player_Id → Country_Id
Player_Id → Sport_Id

Primary Key - Player_Id

Event : BCNF

FDs
Event_Id → Event_Name
Event_Id → Event_Type
Event_Id → Event_Sex
Event_Id → Discipline
Event_Id → Sport_Id
Event_Name → Event_Id

Primary Key - Event_Id

Venue : BCNF

FDs
Venue_Id → Venue_Name
Venue_Id → Venue_Capacity
Venue_Name → Venue_Id

Primary Key - Venue_Id

Team : BCNF

FDs
Team_Id → Country_Id
Primary Key - Team_Id

Player_Participation : BCNF

FD's
None

Primary Key - { Event_Id, Player_Id }

Team_Member : BCNF

FDs
None

Primary Key - { Player_Id, Team_Id }

Event_Venue : BCNF

FDs
None

Primary Key - { Event_Id, Venue_Id }

Individual_Medal : BCNF

FDs
{ Event_Id, Player_Id } → Medal_Type

Primary Key - { Event_Id, Player_Id }

Team_Medal : BCNF

FDs
{ Event_Id, Team_Id } → Medal_Type

Primary Key - { Event_Id, Team_Id }

Event_Match : BCNF

FDs
Match_Id → Event_Phase
Match_Id → Event_Date
Match_Id → Olympic_Day
Match_Id → Event_Id
Match_Id → Sport_Id

Primary Key - Match_Id

Player_Match : BCNF

FDs
{ Match_Id, Player_Id } → Score
{ Match_Id, Player_Id } → Position

Primary Key - { Match_Id, Player_Id }

Team_Match : BCNF

FDs
{ Match_Id, Teamr_Id } → Score
{ Match_Id, Team_Id } → Position

Primary Key - { Match_Id, Team_Id }

Individual_Record : BCNF

FDs
{ Match_Id, Player_Id } → Record_Score
{ Match_Id, Player_Id } → Record_Type

Primary Key - { Match_Id, Player_Id }

Team_Record : BCNF

FDs
{ Match_Id, Team_Id } → Record_Score
{ Match_Id, Team_Id } → Record_Type

Primary Key - { Match_Id, Team_Id }

ALL RELATIONS ARE IN BCNF.

Canonical Form of FD's :

1.Venue_ID -> { Venue_Name , Capacity}

2. Event_ID -> { Event_Name, Event_Type , Event_Sex, Discipline ,Sport_Id}

3.Sport_ID -> { Sport_Name}

4.Player_ID -> { Team_ID}

5.{Team_ID,Event_ID} -> { Medal_Type}

6.Team_ID -> {Country_ID}

7.Player_ID -> { Player_Name ,Gender, Height, Weight, D.O.B., Country_ID, Sport_ID}

8.{Match_ID, Team_ID} -> {Record_Type, Record_Score}

9.Country_ID -> {Country_Name}

10.{Match_ID,Player_ID} -> {Record_Type, Record_Score}

11.{Match_ID,Team_ID} -> {Score, Position}

12.{Match_ID, Player_ID} -> {Score, Position}

13.Match_ID -> {Event_Date, Event_Phase, Olympic_Day, Event_ID, Venue_ID}

14.{Player_ID,Event_ID} -> Medal_Type