



DBMS – IT214

Database Project (Group - 9)

World of International Cricket

❖ Group Members :-

- Vivek Vaghela - 202201197
- Kartavya Akabari - 202201213
- Aaditya Pithadiya - 202201224
- Jaimin Prajapati - 202201228
- Divyesh Ramani - 202201241

❖ Group Representative :-

- Name : Kartavya Akabari (202201213)
- Contact Number : 7567305122

➤ Board:-

- **Attributes** : {Board_ID, Board_Name, Chairman_Name, Country_Name}
- **Functional dependencies** :
 - ❖ **Board_ID** → Board_Name
 - ❖ **Board_ID** → Chairman_Name
 - ❖ **Board_ID** → Country_Name
 - ❖ **Board_Name** → Board_ID
- **{Board_ID}⁺** = {Board_ID, Board_Name, Chairman_Name, Country_Name}
- **{Board_Name}⁺** = {Board_ID, Board_Name, Chairman_Name, Country_Name}
- **Candidate Key** = {Board_ID}, {Board_Name}
- The left side of all the FDs in the minimal FD set of relation “Board” contains the super key only, therefore the relation “Board” is in BCNF.

➤ Matches of Event :-

- **Attributes:** {Match_ID, Event_ID, Date, Venue, Winner, On_field_umpire1, On_field_umpire2, TV_umpire, Team1, Team2}

- **Functional dependencies :**

- ❖ **Match_ID** → Event_ID
- ❖ **Match_ID** → Date
- ❖ **Match_ID** → Venue
- ❖ **Match_ID** → On_field_umpire1
- ❖ **Match_ID** → On_field_umpire2
- ❖ **Match_ID** → TV_umpire
- ❖ **Match_ID** → Team1
- ❖ **Match_ID** → Team2
- ❖ **Match_ID** → Winner

- **{Match_ID}⁺** = {Match_ID, Event_ID, Date, Venue, On _field _umpire1, On_field_umpire2, TV_umpire, Team1, Team2 ,Winner}

- **Candidate Key** = {Match_ID}

- The left side of all the FDs in the minimal FD set of relation “Matches_of_Event” contains the super key only, therefore the relation “Matches_of_Event” is in BCNF.

➤ Stadium:-

- **Attributes:** {Stadium_ID, Stadium_Name , Capacity, Pitch_type, Country}
- **Functional dependencies :**
 - ❖ Stadium_ID → Stadium_Name
 - ❖ Stadium_ID → Capacity
 - ❖ Stadium_ID → Pitch_type
 - ❖ Stadium_ID → Country
 - ❖ Stadium_Name → Stadium_ID
- **{Stadium_Name}⁺** = {Stadium_ID, Stadium_Name , Capacity, Pitch_type, Country}
- **{Stadium_ID}⁺** = {Stadium_ID, Stadium_Name , Capacity, Pitch_type, Country}
- **Candidate Key** = {Stadium_ID}, {Stadium_Name}
- The left side of all the FDs in the minimal FD set of relation “Stadium” contains the super key only, therefore the relation “Stadium” is in BCNF.

➤ Matches of Bilateral series :-

- **Attributes:** {Bilateral_ID, Date, Venue, On_field_umpire1, On_field_umpire2, TV_umpire, Winner}
- **Functional Dependencies:**
 - ❖ **Match_ID** → Bilateral_ID
 - ❖ **Match_ID** → Date
 - ❖ **Match_ID** → Venue
 - ❖ **Match_ID** → On_field_umpire1
 - ❖ **Match_ID** → On_field_umpire2
 - ❖ **Match_ID** → TV_umpire
 - ❖ **Match_ID** → Winner
- **{Match_ID}⁺** = {Bilateral_ID, Date, Venue, On_field_umpire1, On_field_umpire2, TV_umpire, Winner}
- **Candidate Key** = {Match_ID}
- The left side of all the FDs in the minimal FD set of relation “Matches_of_Bilateral_series_” contains the super key only, therefore the relation “Matches_of_Bilateral_series” is in BCNF.

➤ Player:

- **Attributes:**{Player_ID,Player_name,Batting_style,Bowling_style,Gender,DOB}
- **Functional Dependencies:**
 - ❖ **Player_ID** → Player_Name
 - ❖ **Player_ID** → Batting_style
 - ❖ **Player_ID** → Bowling_style
 - ❖ **Player_ID** → Gender
 - ❖ **Player_ID** → DOB
- **{Player_ID}⁺**={Player_ID,Player_name,Batting_style,Bowling_style,Gender,DOB}
- **Candidate Key** = {Player_ID}
- The left side of all the FDs in the minimal FD set of relation "Player" contains the super key only, therefore the relation "Player" is in BCNF.

➤ **Umpire:**

- **Attributes:** {Umpire_ID, Umpire_Name, Country, Decision_Accuracy}
- **Functional Dependencies:**
 - ❖ **Umpire_ID** → Umpire_Name
 - ❖ **Umpire_ID** → Country
 - ❖ **Umpire_ID** → Decision_Accuracy
- **{Umpire_ID}⁺** = {Umpire_ID, Umpire_Name, Country, Decision_Accuracy}
- **Candidate Key** = {Umpire_ID}
- The left side of all the FDs in the minimal FD set of relation “Umpire” contains the super key only, therefore the relation “Umpire” is in BCNF.

➤ **Event:**

- **Attributes:** {Event_ID, Host_Country, Year, Match_type, No_of_teams, Player_of_the_tournament}
- **Functional Dependencies:**
 - ❖ Event_ID → Host_Country
 - ❖ Event_ID → Year
 - ❖ Event_ID → Match_type
 - ❖ Event_ID → No_of_teams
 - ❖ Event_ID → Player_of_the_tournament
- **{Event_ID}⁺ =**
{Event_ID, Host_Country, Year, Match_type, No_of_teams, Player_of_the_tournament}
- **Candidate Key** = {Event_ID}
- The left side of all the FDs in the minimal FD set of relation “Event” contains the super key only, therefore the relation “Event” is in BCNF.

➤ **Board Ranking:**

- **Attributes:** {Board_ID, Match_type, Year, Rating, Rank, Gender}
- **Functional Dependencies:**
 - ❖ {Match_type , Year , Rank , Gender } → Board_ID
 - ❖ {Match_type , Year , Rank , Gender } → Rating
- {Match_type , Year , Rank, Gender}⁺ =
{Board_ID, Match_type, Year, Rating, Rank, Gender}
- **Candidate Key** = {Match_type, Year, Rank, Gender}
- The left side of all the FDs in the minimal FD set of relation “Board_Ranking” contains the super key only, therefore the relation “Board_Ranking” is in BCNF.

➤ **Performance:-**

- **Attributes:** {Player_ID, Match_type, Debut_Year, Total_Runs, Batting_Average, Batting_Strike_rate, Fifties, Centuries, Bowling_Average, Bowling_Strike_rate, Total_Wickets, Five_WI, Catches, Runouts, Stumping}
- **Functional Dependencies:**
 - ❖ {Player_ID , Match_type} → Debut_Year

- ❖ {Player_ID , Match_type} → Total_Runs
- ❖ {Player_ID , Match_type} → Batting_Average
- ❖ {Player_ID , Match_type} → Batting_Strike_rate
- ❖ {Player_ID , Match_type} → Fifties
- ❖ {Player_ID , Match_type} → Centuries
- ❖ {Player_ID , Match_type} → Bowling_Average
- ❖ {Player_ID , Match_type} → Bowling_Strike_rate
- ❖ {Player_ID , Match_type} → Total_Wickets
- ❖ {Player_ID , Match_type} → FIVE_WI
- ❖ {Player_ID , Match_type} → Catches
- ❖ {Player_ID , Match_type} → Runouts
- ❖ {Player_ID , Match_type} → Stumping

- {Player_ID , Match_type}⁺=

{Player_ID,Match_type,Debut_Year,Total_Runs,Batting_Average, Batting_Strike_rate,Fifties,Centuries,Bowling_Average,Bowling_Strike_rate,Total_Wickets,Five_WI,Catches,Runouts,Stumping}

- **Candidate Key** = {Player_ID , Match_type}

- The left side of all the FDs in the minimal FD set of relation “Performance” contains the super key only, therefore the relation “Performance” is in BCNF.

➤ Bilateral Participation:-

- **Attributes** : {Bilateral_ID, Board_ID, Most_runs, Most_wicket}
- **Functional dependencies** :
 - ❖ {Bilateral_ID , Board_ID} → Most_runs
 - ❖ {Bilateral_ID , Board_ID} → Most_wicket
- **{Bilateral_ID , Board_ID}⁺** = {Bilateral_ID, Board_ID, Most_runs, Most_wicket}
- **Candidate Key** = {Bilateral_ID , Board_ID}
- The left side of all the FDs in the minimal FD set of relation "Bilateral_Participation" contains the super key only, therefore the relation "Bilateral_Participation" is in BCNF.

➤ Event Participation:-

- **Attributes:** {Event_ID, Board_ID, Rank, Most_Runs, Most_Wickets}
- **Functional dependencies :**
 - ❖ {Event_ID , Board_ID } → Rank
 - ❖ {Event_ID , Board_ID } → Most_Runs
 - ❖ {Event_ID , Board_ID } → Most_Wickets
- {Event_ID , Board_ID}⁺ =
{Event_ID, Board_ID, Rank, Most_Runs, Most_Wickets}
- **Candidate Key** = {Event_ID , Board_ID}
- The left side of all the FDs in the minimal FD set of relation “Event_Participation” contains the super key only, therefore the relation “Event_Participation” is in BCNF.

➤ Event Player Data:-

- **Attributes:** {Event_ID, Player_ID, Total_Runs, Total_Wickets, Total_Catches, Total_Stumping}
- **Functional Dependencies:**
 - ❖ { Event_ID , Player_ID } → Total_Runs
 - ❖ { Event_ID , Player_ID } → Total_Wickets
 - ❖ { Event_ID , Player_ID } → Total_Catches
 - ❖ { Event_ID , Player_ID } → Total_Stumping
- {Event_ID , Player_ID}⁺ =
Event_ID, Player_ID, Total_Runs, Total_Wickets, Total_Catches, Total_Stumping}
- **Candidate Key** = {Event_ID , Player_ID}

- The left side of all the FDs in the minimal FD set of relation “Event_Player_Data” contains the super key only, therefore the relation “Event_Player_Data” is in BCNF.

➤ Player Ranking:-

- **Attributes:** {Player_ID, Match_type, Year, Rating, Rank, Category, Gender}
- **Functional Dependencies:**
 - ❖ {Match_type , Year, Rank , Category , Gender } → Player_ID
 - ❖ {Match_type , Year, Rank , Category , Gender } → Rating
- **{Match_type , Year , Rank , Category , Gender }⁺ =**
{Player_ID, Match_type, Year, Rating, Rank, Category, Gender}
- **Candidate Key =** {Match_type, Year, Rank, Category, Gender }
- The left side of all the FDs in the minimal FD set of relation “Player_Ranking” contains the super key only, therefore the relation “Player_Ranking” is in BCNF.

➤ **Bilateral Player Data:-**

- **Attributes:** {Bilateral_ID, Player_ID, Total_Runs, Total_Wickets, Total_Catches, Total_Stumping, Total_Runs}
- **Functional dependencies :**
 - ❖ { Bilateral_ID , Player_ID } → Total_Runs
 - ❖ { Bilateral_ID , Player_ID } → Total_Wickets
 - ❖ { Bilateral_ID , Player_ID } → Total_Catches
 - ❖ { Bilateral_ID , Player_ID } → Total_Stumpings
 - ❖ { Bilateral_ID , Player_ID } → Total_Runs

- **{ Bilateral_ID , Player_ID }⁺** =
{Bilateral_ID, Player_ID, Total_Runs, Total_Wickets, Total_Catches, Total_Stumping, Total_Runs}
- **Candidate Key** = {Bilateral_ID , Player_ID}
- The left side of all the FDs in the minimal FD set of relation “Bilateral_Player_Data” contains the super key only, therefore the relation “Bilateral_Player_Data” is in BCNF.

➤ **Bilateral Series:-**

- **Attributes:** {Bilateral_ID, Year, Match_type, Host_Country, Guest_Country, Number_of_Matches, Player_of_the_Series}
- **Functional dependencies :**
 - ❖ **Bilateral_ID** → year
 - ❖ **Bilateral_ID** → Match_type
 - ❖ **Bilateral_ID** → Host_Country
 - ❖ **Bilateral_ID** → Guest_country
 - ❖ **Bilateral_ID** → Number_of_Matches

❖ **Bilateral_ID** → Player_of_the_Series

- **{ Bilateral_ID }⁺** =

{Bilateral_ID, Year, Match_type, Host_Country, Guest_Country, Number_of_Matches, Player_of_the_Series}

- **Candidate Key** = {Bilateral_ID}
- The left side of all the FDs in the minimal FD set of relation “Bilateral_Series” contains the super key only, therefore the relation “Bilateral_Series” is in BCNF.

➤ **Victory:-**

- **Attributes** : {Board_ID, Match_Type, No_of_cups}
- **Functional dependencies** :
 - ❖ {Board_ID , Match_type} → No_of_cups
- **{ Board_ID , Match_type }⁺** =
{Board_ID, Match_Type, No_of_cups}

- **Candidate Key** = {Board_ID , Match_Type}
- The left side of all the FDs in the minimal FD set of relation “Victory” contains the super key only, therefore the relation “Victory” is in BCNF.

➤ There is no function dependency in the “**Awards**” table.