University of British Columbia, Vancouver
Department of Computer Science

_____

CPSC 304 Project Cover Page

Milestone #: _____2_____

Date: _____3/1/2023_____

Group Number: _____19_____

| Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Julian Kennedy	32287179	P1g3o	Julian.m.kennedy@gmail.com
Anthony Chen	91931246	F7w3o	anthonyjrchen@gmail.com
Daichi Furukawa	51399111	X1r8k	Daichifg0626@gmail.com

By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

University of British Columbia, Vancouver
Department of Computer Science

2. **Brief Summary**

The domain of our application is gambling/team sports betting. The application's purpose is to provide the users with an interface that allows them to place bets on team sports matches with ease. The database will model that of a sportsbook. It will provide information on sports teams and betting odds. Our project will use the statistics of teams and players to provide betting odds for people to put money on. We will also model the aspect of account management so that each bettor can be uniquely identified and the database will link their bets to their account.

3. **The ER Diagram**
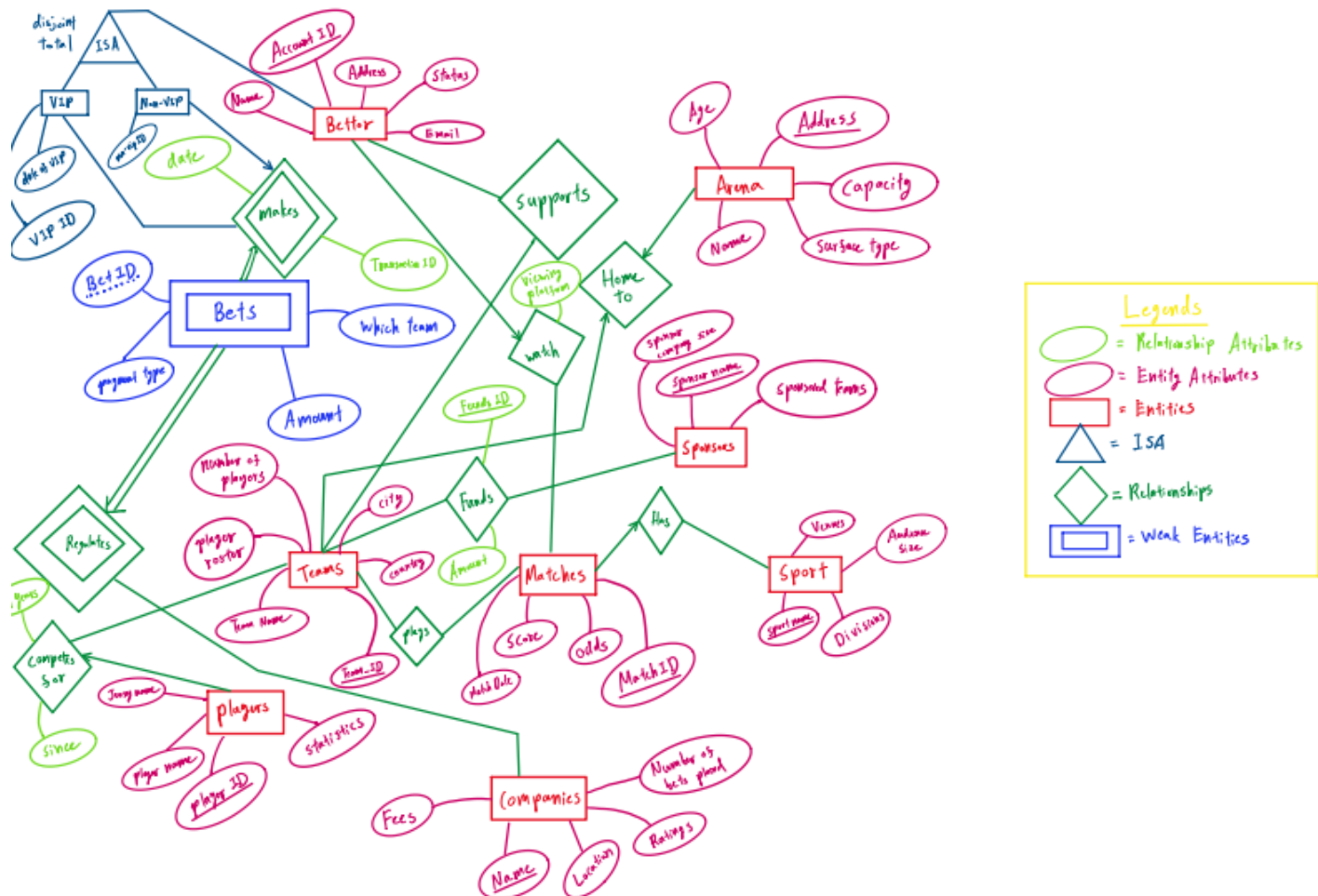
We have moved the ISA relationship from the Team entity to the Bettor entity and we have made the ISA entities into VIP and non-VIP, from Winner and Loser. The VIP and non-VIP entities have their own "makes" relationship with the Bets entity, where non-VIP is one-to-one and VIP is many-to-one. The non-VIP entity has an attribute that is the non-VIP ID and the VIP entity has two attributes: VIP ID and date of VIP. The ISA relationship also has a constraint of disjoint total.

_____

We have also removed the transactionID as a primary key because it is the relationship for a weak entity and therefore, the primary key for the relationship is already decided by the primary key of the parent entity and the weak entity's primary key, since the weak entity has a total participation constraint.

We have also created a TeamID attribute in the Team entity and made it the new primary key to uniquely identify a team since teams can have the same name.

4. **Schema**
   - Primary keys are underlined.
   - Foreign keys are bolded

   1. Arena(Address: varchar[20], Name: varchar[20], Capacity: int, Surface_Type: varchar[20], Age: int)

   Primary Key: Address
   Candidate Key: Name
   Unique: Name

   2. Sponsors(Sponsor_Name: varchar[20], Sponsor_Company_Size: int, Sponsored_Teams varchar[20])

   Primary Key: Sponsor_Name

   3. Sport(Sport_Name: varchar[20], Venues: varchar[20], Divisions: varchar[20], Audience_Size: int)

   Primary Key: Sport_Name

   4. Plays(**Match_ID**: int, **Team_ID**: integer)

   Primary Key: (Match_ID, Team_ID)
   Foreign Key: Match_ID references Match
   Foreign Key: Team_ID references Team

   5. Has(**Match_ID**: int, **Sport_Name**: varchar[20])

   Primary Key: Match_ID
   Foreign Key: Match_ID references Match

Foreign Key: Sport_Name references Sport

6. Home_To(**Address**: varchar[20], **Team_ID**: integer)

Primary Key: Address
Candidate Key: Team_ID
Foreign Key: Address references Arena
Foreign Key: Team_ID references Team
Unique: Team_ID
Not NULL: Team_ID

7. Bettor(Account_ID: integer, Bettor_Name: varchar[20], Bettor_Address: varchar[200], Bettor_Status: integer, Email: varchar[50])

Primary Key: Account_ID
Candidate Key: Email
Unique: Email

8. VIP(**Account_ID**: integer, VIP_ID: integer, Date_Of_VIP: Date)

Primary Key: Account_ID
Foreign Key: Account_ID references Bettor
Candidate Key: VIP_ID
Unique: VIP_ID
Not NULL: VIP_ID

9. NonVIP(**Account_ID**: integer, nonVIP_ID: integer)

Primary Key: Account_ID
Foreign Key: Account_ID references Bettor
Candidate Key: nonVIP_ID
Unique: nonVIP_ID
Not NULL: nonVIP_ID

10. Makes_Bets(**Account_ID**: integer, Bet_ID: integer, Payment_Type: varchar[20], Bet_Amount: Real, Which_Team: varchar[50], Bet_Date: Date, Transaction_ID: integer)

Primary Key: (Account_ID, Bet_ID)

Candidate Key: Transaction_ID
Foreign Key: Account_ID references Bettor
Unique: Transaction_ID
Not NULL: Transaction_ID

11. Bets_Regulates(**Company_Name**: varchar[20], <u>Bet_ID</u>: integer, Payment_Type: varchar[20], Bet_Amount: Real, Which_Team: varchar[50])

Primary Key: (Company_Name, Bet_ID)
Foreign Key: Company_Name references Companies

12. Competes_For(**Player_ID**: integer, **Team_ID**: integer, Since: Date)

Primary Key: Player_ID
Foreign Key: Player_ID from Players
Foreign Key: Team_ID from Team
Not NULL: Team_ID

13. Team(<u>Team_ID</u>: integer, Team_Name: varchar[20], Country: varchar[20], City: varchar[20], Player_Roster: varchar[3000], Number_of_Players: integer)

Primary Key: Team_ID
Candidate Key: Player_Roster, (Team_Name + Player_Roster)
Not Null: Team_Name, Player_Roster
Unique: Player_Roster, (Team_Name + Player_Roster)

14. Players(<u>Player_ID</u>: integer, Player_Name: varchar[30], Statistics: double, Jersey_Number: integer)

Primary Key: Player_ID
Candidate Key: (Player_Name + Jersey_Number)
Unique: (Player_Name + Jersey_Number)
Not NULL: Jersey_Number, Player_Name

15. Matches(<u>Match_ID</u>: integer, Match_Date: date, Score: integer, Odds: double)

Primary Key: Match_ID

16. Companies(Company_Name: varchar[20], Location: varchar[20], Ratings: double, Fees: double, Number_of_Bets: integer)

Primary Key: Company_Name
Candidate Key: (Location + Number_of_Bets + Fee)
Not Null: Location
Unique: (Location + Number_of_Bets + Fee)

17. Watch(**Match_ID:** integer, **Account_ID:** integer, Viewing_Platform: varchar[30])

Primary Key: Match_ID, Account_ID
Foreign Key: Match_ID references Matches
Foreign Key: Account_ID references Bettor
Not NULL: Match_ID
Not NULL: Account_ID

18. Funds(**Sponsor_Name**: varchar[20], **Team_Name**: varchar[20], Funds_ID: integer, Amount: integer)

Primary Key: Sponsor_Name, Team_Name, Funds_ID
Foreign Key: Sponsor_Name references Sponsor
Foreign Key: Team_Name references Team

19. Supports(**Account_ID**: integer, **Team_Name**: varchar[30])

Primary Key: Account_ID, Team_Name
Foreign Key: Account_ID references Bettor
Foreign Key: Team_Name references Team

5. **Functional Dependencies**

1. Team(Team_ID: integer, Team_Name: varchar[20], Country: varchar[20], City: varchar[20], Player_Roster: varchar[200], Number_of_Players: integer)
   - (Team_ID) -> (Team_Name, Country, City, Record, Player_Roster, Number_Of_Players)
   - (Team_Name, Player_Roster) -> (Team_ID)
   - (City) ->(Country) **(Non PK & CK FD)**

___

- (Player_Roster) -> (Team_Name, Number_of_Players)

2. Players(<u>Player_ID</u>: integer, Player_Name: varchar[30], Statistics: double, Jersey_Number: integer)
    - (Player_ID) -> (Player_Name, Jersey_Number, Statistics)
    - (Player_Name, Jersey_Number) -> (Player_ID)

3. Matches(<u>Match_ID</u>: integer, Match_Date: date, Score: integer, Odds: double)
    - (Match_ID) -> (Match_Date, Score, Odds)
    - (Score, Odds) -> (Match_ID)

4. Companies(<u>Company_Name</u>: varchar[20], Location: varchar[20], Ratings: double, Fees: double, Number_of_Bets: integer)
    - (Company_Name) -> (Location, Ratings, Fees, Number_of_Bets)
    - (Fees, Locations, Number_of_Bets) -> (Company_Name)

5. Watch(**<u>Match_ID</u>:** integer, **<u>Account_ID</u>:** integer, Viewing_Platform: varchar[30])
    - (Match_ID, Account_ID) -> (Viewing_Platform)

6. Funds(**<u>Sponsor_Name</u>**: varchar[20], **<u>Team_Name</u>**: varchar[20], <u>Funds_ID</u>: integer, Amount: integer)
    - (Funds_ID) -> (Amount)

7. Supports(**<u>Account_ID</u>**: integer, **<u>Team_Name</u>**: varchar[30])
    - Trivial ones only.

8. Arena(<u>Address</u>: varchar[20], Name: varchar[20], Capacity: int, Surface_Type: varchar[20], Age: int)
    - (Address) -> (Name,Capacity,Surface_Type,Age)
    - (Name) -> (Address, Capacity, Surface_Type, Age)

9. Sponsors(<u>Sponsor_Name</u>: varchar[20], Sponsor_Company_Size: int, Sponsored_Teams varchar[20])
    - (Sponsor_Name) -> (Sponsor_Company_Size,Sponsored_Teams)

10. Sport(<u>Sport_Name</u>: varchar[20], Venues: varchar[20], Divisions: varchar[20], Audience_Size: int)
    - (Sport_Name) -> (Venues, Divisions, Audience_Size)

11. Plays(**<u>Match_ID</u>**: int, **<u>Team_ID</u>**: integer)
    - (Match_ID,Team_ID) -> (Match_ID,Team_ID)

12. Has(**Match_ID**: int, **Sport_Name**: varchar[20])
    - (Match_ID) -> (Sport_Name, Venues)

13. Home_To(**Address**: varchar[20], **Team_ID**: integer)
    - (Address) -> (Team_Name, Location)
    - (Team_ID) -> (Address, Location)

14. Bettor(Account_ID: integer, Bettor_Name: varchar[20], Bettor_Address: varchar[200], Bettor_Status: integer, Email: varchar[50])
    - (Account_ID) -> (Bettor_Name, Bettor_Address, Bettor_Status, Email)
    - (Email) -> (Account_ID, Bettor_Name, Bettor_Address, Bettor_Status)

15. VIP(**Account_ID**: integer, VIP_ID: integer, Date_Of_VIP: Date)
    - (Account_ID) -> (VIP_ID, Date_Of_VIP)
    - (VIP_ID) -> (Account_ID, Date_Of_VIP)

16. NonVIP(**Account_ID**: integer, nonVIP_ID: integer)
    - (Account_ID) -> (nonVIP_ID)

17. Makes_Bets(**Account_ID**: integer, Bet_ID: integer, Payment_Type: varchar[20], Bet_Amount: Real, Which_Team: varchar[50], Bet_Date: Date, Transaction_ID: integer)
    - (Account_ID, Bet_ID) -> (Payment_Type, Bet_Amount, Which_Team, Date, Transaction_ID)
    - (Transaction_ID) -> (Account_ID, Bet_ID, Payment_Type, Bet_Amount, Which_Team, Date)

18. Bets_Regulates(**Company_Name**: varchar[20], Bet_ID: integer, Payment_Type: varchar[20], Bet_Amount: Real, Which_Team: varchar[50])
    - (Company_Name, Bet_ID) -> (Payment_Type, Bet_Amount, Which_Team)

19. Competes_For(**Player_ID**: integer, **Team_ID**: integer, Since: Date)
    - (Player_ID) -> (Team_ID, Since)

6. **Normalization**

Not in BCNF

---

1. Team(<u>Team_ID</u>: integer, Team_Name: varchar[20], Country: varchar[20], City: varchar[20], Player_Roster: varchar[200], Number_of_Players: integer)

   1. (<u>Team_ID</u>) -> (Team_Name, Country, City, Player_Roster, Number_Of_Players)
      Already in BCNF

   2. (Team_Name, Player_Roster) -> (Team_ID)
      {Team_Name, Player_Roster}$^+$ = {Team_Name, Player_Roster, Team_ID, Number_Of_Players, Country, City}
      Already in BCNF

   3. (Player_Roster) -> (Team_Name, Number_of_Players)
      {Player_Roster}$^+$ = {Player_Roster, Team_Name, Number_of_Players}
      Already in BCNF

   4. (City) -> (Country) **Non PK or CK FD**
      {City}$^+$ = {Country, City}
      Not in BCNF
      After *synthesis decomposition*:
      R1(<u>City,</u> Country)
      R1 is now BCNF
      R2 (<u>Team_ID</u>, Country, Player_Roster, Number_of_Players)
      R2 is also BCNF

      R1 is now replaced by the name **Location.**
      Location(<u>City,</u> Country)

      Location(<u>City</u>: varchar[20], Country: varchar[20])
      Primary Key: City

      R2 is now replaced by the name **Team_Info.**
      Team_Info (<u>Team_ID</u>, Country, Player_Roster, Number_of_Players)

      Team_Info(<u>Team_ID</u>: integer, Country: varchart[20], Player_Roster: varchar[200], Number_of_Players: integer)
      Primary Key: Team_ID
      Candidate Key: Player_Roster

No decomposition (Tables already in 3NF or BCNF):

___

2. Players(<u>Player_ID</u>: integer, Player_Name: varchar[30], Statistics: double, Jersey_Number: integer)

1. (Player_ID) -> (Player_Name, Jersey_Number, Statistics)
   Already in BCNF

2. (Player_Name, Jersey_Number) -> (Player_ID)
   Already in BCNF

3. Matches(<u>Match_ID</u>: integer, Match_Date: date, Score: integer, Odds: double)
1. (Match_ID) -> (Match_Date, Score, Odds)
   Already in BCNF

4. Companies(<u>Company_Name</u>: varchar[20], Location: varchar[20], Ratings: double, Fees: double, Number_of_Bets: integer)
1. (Company_Name) -> (Location, Ratings, Fees, Number_of_Bets)
   Already in BCNF

2. (Fees, Locations, Number_of_Bets) -> (Company_Name)
   Already in BCNF

5. Watch(**<u>Match_ID</u>:** integer, **<u>Account_ID</u>:** integer, Viewing_Platform: varchar[30])
1. (Match_ID, Account_ID) -> (Viewing_Platform)
   Already in BCNF

6. Funds(**<u>Sponsor_Name</u>**: varchar[20], **<u>Team_Name</u>**: varchar[20], <u>Funds_ID</u>: integer, Amount: integer)
1. (Sponsor_Name, Team_Name, Funds_ID) -> (Amount)
   Already in BCNF

7. Supports(**<u>Account_ID</u>**: integer, **<u>Team_Name</u>**: varchar[30])
   - Trivial ones only.

8. Bettor(<u>Account_ID</u>: integer, Bettor_Name: varchar[20], Bettor_Address: varchar[200], Bettor_Status: integer, Email: varchar[50])
1. (Account_ID) -> (Bettor_Name, Bettor_Address, Bettor_Status, Email)
   Already in BCNF
2. (Email) -> (Account_ID, Bettor_Name, Bettor_Address, Bettor_Status)
   Already in BCNF

9. VIP(**<u>Account_ID</u>**: integer, VIP_ID: integer, Date_Of_VIP: Date)

_____

1. (Account_ID) -> (VIP_ID, Date_Of_VIP)
   Already in BCNF
2. (VIP_ID) -> (Account_ID, Date_Of_VIP)
   Already in BCNF

10. NonVIP(**Account_ID**: integer, nonVIP_ID: integer)
    1. (Account_ID) -> (nonVIP_ID)
       Already in BCNF

11. Makes_Bets(**Account_ID**: integer, <u>Bet_ID</u>: integer, Payment_Type: varchar[20], Bet_Amount: Real, Which_Team: varchar[50], Bet_Date: Date, Transaction_ID: integer)

    1. (Account_ID, Bet_ID) -> (Payment_Type, Bet_Amount, Which_Team, Date, Transaction_ID)
       Already in BCNF
    2. (Transaction_ID) -> (Account_ID, Bet_ID, Payment_Type, Bet_Amount, Which_Team, Date)
       Already in BCNF

12. Bets_Regulates(**Company_Name**: varchar[20], <u>Bet_ID</u>: integer, Payment_Type: varchar[20], Bet_Amount: Real, Which_Team: varchar[50])
    1. (Company_Name, Bet_ID) -> (Payment_Type, Bet_Amount, Which_Team)
       Already in BCNF

13. Competes_For(**Player_ID**: integer, **Team_ID**: integer, Since: Date)
    1. (Player_ID) -> (Team_ID, Since)
       Already in BCNF

14. Arena(<u>Address</u>: varchar[20], Name: varchar[20], Capacity: int, Surface_Type: varchar[20], Age: int)
    1. (Address) -> (Name,Capacity,Surface_Type,Age)
       Already in BCNF
    2. (Name) -> (Address, Capacity, Surface_Type, Age)
       Already in BCNF

15. Sponsors(<u>Sponsor_Name</u>: varchar[20], Sponsor_Company_Size: int, Sponsored_Teams varchar[20])
    1. (Sponsor_Name) -> (Sponsor_Company_Size,Sponsored_Teams)
       Already in BCNF

16. Sport(<u>Sport_Name</u>: varchar[20], Venues: varchar[20], Divisions: varchar[20], Audience_Size: int)
    1. (Sport_Name) -> (Venues, Divisions, Audience_Size)
       Already in BCNF

17. Plays(**<u>Match_ID</u>**: int, **<u>Team_ID</u>**: integer)
    1. (Match_ID,Team_ID) -> (Match_ID,Team_ID)
       Already in BCNF

18. Has(**<u>Match_ID</u>**: int, **Sport_Name**: varchar[20])
    1. (Match_ID) -> (Sport_Name, Venues)
       Already in BCNF

19. Home_To(**<u>Address</u>**: varchar[20], **Team_ID**: integer)
    1. (Address) -> (Team_Name, Location)
       Already in BCNF
    2. (Team_ID) -> (Address, Location)
       Already in BCNF

7. **SQL DDL Statements**

1. Bettor Table
CREATE TABLE Bettor (
Account_ID integer PRIMARY KEY,
Bettor_Name VARCHAR(20) NOT NULL,
Bettor_Status integer,
Bettor_Address VARCHAR(200) UNIQUE,
Email VARCHAR(50) UNIQUE
);

2. Team Table
CREATE TABLE Team (
Team_ID integer PRIMARY KEY,
Team_Name VARCHAR(30),
City VARCHAR(20),
Country VARCHAR(20),
Player_Roster VARCHAR(200) UNIQUE NOT NULL,

Number_Of_Players integer,
UNIQUE(Team_Name, Player_Roster)
);

* Came from BCNF Decomposition
CREATE TABLE Team_Info (
Team_ID integer PRIMARY KEY,
Team_Name VARCHAR(30),
Country VARCHAR(20),
Player_Roster VARCHAR(200) UNIQUE NOT NULL,
Number_Of_Players integer
);

* Came from BCNF Decomposition
CREATE TABLE Location (
City VARCHAR(20) PRIMARY KEY,
Country VARCHAR(20)
);

3. Players Table
CREATE TABLE Players (
Player_ID integer PRIMARY KEY,
Player_Name VARCHAR(20) NOT NULL,
Statistics double,
Jersey_Number integer NOT NULL,
UNIQUE (Player_Name, Jersey_Number)
);

4. Matches Table
CREATE TABLE Matches (
Match_ID integer PRIMARY KEY,
Match_Date date,
Score integer,
Odds double
);

5. Companies Table
CREATE TABLE Companies(
Company_Name VARCHAR(20) PRIMARY KEY,
Location VARCHAR(20) NOT NULL,
Rating double,
Fees double,
Number_of_Bets integer,

UNIQUE (Location, Number_of_Bets, Fees)
);

6. Supports Table
CREATE TABLE Supports (
Account_ID integer,
Team_ID integer,
PRIMARY KEY (Account_ID, Team_ID),
FOREIGN KEY (Team_ID) REFERENCES Team(Team_ID),
FOREIGN KEY (Account_ID) REFERENCES Bettor(Account_ID)
);

7. Funds Table
CREATE TABLE Funds (
Sponsor_Name VARCHAR(20),
Team_ID integer,
Funds_ID integer,
PRIMARY KEY (Sponsor_Name, Team_ID, Funds_ID),
FOREIGN KEY (Sponsor_Name) REFERENCES Sponsors(Sponsor_Name),
FOREIGN KEY (Team_ID) REFERENCES Team(Team_ID)
);

8. Watch Table
CREATE TABLE Watch (
Match_ID integer,
Account_ID integer,
Viewing_Platform VARCHAR(20),
PRIMARY KEY (Match_ID, Account_ID),
FOREIGN KEY (Match_ID) REFERENCES Matches(Match_ID),
FOREIGN KEY (Account_ID) REFERENCES Bettor(Account_ID)
);

9. Arena Table
CREATE TABLE Arena(
Address VARCHAR(20) PRIMARY KEY,
Name VARCHAR(20) UNIQUE NOT NULL,
Capacity integer,
Surface_Type VARCHAR(20) NOT NULL,
Age integer NOT NULL
);

10. Sponsors Table
CREATE TABLE Sponsors(

_____

```
Sponsor_Name VARCHAR(20) PRIMARY KEY,
Sponsor_Company_Size integer NOT NULL,
Sponsored_Teams VARCHAR(20)
);
```

11. Sport Table
```
CREATE TABLE Sport(
Sport_Name VARCHAR(20) PRIMARY KEY,
Venues VARCHAR(20) NOT NULL,
Divisions VARCHAR(20),
Audience_Size integer NOT NULL
);
```

12. Plays Table
```
CREATE TABLE Plays(
Match_ID integer,
Team_ID integer,
PRIMARY KEY(Match_ID, Team_ID),
FOREIGN KEY(Match_ID) REFERENCES Matches(Match_ID),
FOREIGN KEY(Team_ID) REFERENCES Team(Team_ID)
);
```

13. Has Table
```
CREATE TABLE Has(
Match_ID integer PRIMARY KEY,
Sport_Name VARCHAR(20),
FOREIGN KEY(Match_ID) REFERENCES Matches(Match_ID),
FOREIGN KEY(Sport_Name) REFERENCES Sport(Sport_Name)
);
```

14. Home_To Table
```
CREATE TABLE Home_To(
Address VARCHAR(20) PRIMARY KEY,
Team_ID integer UNIQUE,
FOREIGN KEY(Address) REFERENCES Arena(Address),
FOREIGN KEY(Team_ID) REFERENCES Team(Team_ID)
);
```

15. VIP Table
```
CREATE TABLE VIP(
Account_ID integer PRIMARY KEY,
VIP_ID integer UNIQUE NOT NULL,
Date_Of_VIP Date,
```

_____

```
FOREIGN KEY(Account_ID) REFERENCES Bettor(Account_ID)
);
```

16. NonVIP Table
```
CREATE TABLE NonVIP(
Account_ID integer PRIMARY KEY,
nonVIP_ID integer UNIQUE NOT NULL,
FOREIGN KEY(Account_ID) REFERENCES Bettor(Account_ID)
);
```

17. Makes_Bets Table
```
CREATE TABLE Makes_Bets(
Account_ID integer,
Bet_ID integer,
Payment_Type VARCHAR(20),
Bet_Amount Real,
Which_Team VARCHAR(50),
Bet_Date Date,
Transaction_ID integer UNIQUE NOT NULL,
PRIMARY KEY (Account_ID, Bet_ID),
FOREIGN KEY(Account_ID) REFERENCES Bettor(Account_ID)
);
```

18. Bets_Regulates Table
```
CREATE TABLE Bets_Regulates(
Company_Name VARCHAR(20),
Bet_ID integer,
Payment_Type VARCHAR(20),
Bet_Amount Real,
Which_Team VARCHAR(50),
PRIMARY KEY (Company_Name, Bet_ID),
FOREIGN KEY(Company_Name) REFERENCES Companies(Company_Name)
);
```

19. Competes_For Table
```
CREATE TABLE Competes_For(
Player_ID integer PRIMARY KEY,
Team_ID integer NOT NULL,
Since Date,
FOREIGN KEY (Player_ID) REFERENCES Players(Player_ID),
FOREIGN KEY (Team_ID) REFERENCES Team(Team_ID)
);
```

8. **INSERT Statements**

1. Teams INSERT Statement
INSERT INTO Teams(Team_ID, Team_Name, Country, City, Player_Roster, Number_of_Players)
VALUES
(1, 'Canucks', 'Canada', 'Vancouver', 'Bo Horvat, Daniel Sedin, Roberto Luongo', 3),
(2, 'Raptors', 'Canada', 'Toronto', 'Michael Jordan', 1),
(3, 'Angels', 'United States', 'Los Angeles', 'Ohtani Shohei, Mike Trout, Tyler Anderson, Hunter Renfroe', 4),
(4, 'Whitecaps', 'Canada', 'Vancouver', 'Lionel Messi, Cristiano Ronaldo', 2),
(5, 'Mariners', 'United States', 'Seattle', 'Julio Rodriguez, Jarred Kalenic', 2);

* **Came from BCNF Decomposition**
Location INSERT Statement
INSERT INTO Location(City, Country)
VALUES
('Vancouver', 'Canada'),
('Tokyo', 'Japan'),
('Madrid', 'Spain'),
('Rome', 'Italy'),
('Istanbul', 'Turkey');

* **Came from BCNF Decomposition**
Teams_Info INSERT Statement
INSERT INTO Team_Info(Team_ID, Team_Name, Country, Player_Roster, Number_of_Players)
VALUES
(1, 'Canucks', 'Canada', 'Bo Horvat, Daniel Sedin, Roberto Luongo', 3),
(2, 'Raptors', 'Canada', 'Michael Jordan', 1),
(3, 'Angels', 'United States', 'Ohtani Shohei, Mike Trout, Tyler Anderson, Hunter Renfroe', 4),
(4, 'Whitecaps', 'Canada', 'Lionel Messi, Cristiano Ronaldo', 2),
(5, 'Mariners', 'United States', 'Julio Rodriguez, Jarred Kalenic', 2);

2. Players INSERT Statement
INSERT INTO Players(Player_ID, Player_Name, Statistics, Jersey_Number)
VALUES
(1, 'Lionel Messi', 9.8, 10),
(2, 'Cristiano Ronaldo', 9.2, 7),
(3, 'Neymar Jr', 8.5, 11),
(4, 'LeBron James', 9.1, 23),
(5, 'Alexander Burrows', 9.5, 14);

3. Matches INSERT Statement

INSERT INTO Matches(Match_ID, Match_Date, Score, Odds)
VALUES
(1, 19991027, 9.8, 3.5),
(2, 20000628, 9.2, 4.5),
(3, 20020127, 8.5, 9.5),
(4, 20230301, 9.1, 2.3),
(5, 20020428, 40, 7.1);

4. Companies INSERT Statement
INSERT INTO Companies(Company_Name, Location, Rating, Fees, Number_of_Bets)
VALUES
('Caesar's', 'Brussel', 5.0, 3.52, 23),
('BETMGM', 'London', 9.5, 4.56, 1),
('DraftKings', 'New York', 8.5, 9.55, 10),
('BetRiver', 'Tokyo', 9.1, 2.33, 13),
('Bet365', 'Vancouver', 3.1, 7.10, 8);

5. Bettor INSERT Statement
INSERT INTO Bettor(Account_ID, Bettor_Name, Bettor_Address, Bettor_Status, Email)
VALUES
(1, 'Steve', '1234 Main Street', 0, 'johnsmith@yahoo.ca'),
(2,'Albert', '12 Abbott Street',1, 'jessica.johnson@gmail.com'),
(3, 'Mark', '63 Birch Street', 0, 'millan83@gmail.com'),
(4, 'Luke', '39 Pine Street', 0, 'lukepine@aol.com'),
(5, 'John', '18 Kirkvalley Crescent', 1, 'alyshiasoans11@gmail.com');

6. Arena INSERT Statement
INSERT INTO Arena(Address,Name,Capacity,Surface_Type,Age)
VALUES
1. ('800 Griffiths Way, Vancouver', 'Rogers Arena', '18910', 'Ice', '28'),
2. ('40 Bay St., Toronto', 'Scotiabank Arena', '19800', 'Wood', '24'),
3. ('Toronto, ON M5G 1P5, 'Rogers Centre', '49286', 'Grass/Dirt', '34'),
4. ('3 NRG Pkwy, Houston", 'Houston Astrodome', '67925', 'Astroturf', '58'),
5. ('1 E161 St, The Bronx', 'Yankee Stadium', '46537', 'Grass/Dirt', '14');

7. Sponsors INSERT Statement
1. INSERT INTO Sponsors(Sponsor_Name, Sponsor_Company_Size, Sponsored_Teams)
   VALUES ('Nike', '40321000000', 'China, Croatia, Portugal, Canada, Brazil')
2. INSERT INTO Sponsors(Sponsor_Name, Sponsor_Company_Size, Sponsored_Teams)
   VALUES ('Under Armour, '49910000000', 'Samsung Lions, NU Bulldogs')

_____

3. INSERT INTO Sponsors(Sponsor_Name, Sponsor_Company_Size, Sponsored_Teams)
    VALUES ('Adidas', '28260000000', 'Manchester United, Real Madrid, Arsenal')
4. INSERT INTO Sponsors(Sponsor_Name, Sponsor_Company_Size, Sponsored_Teams)
    VALUES ('Puma', '125000000', 'Melbourne City FC., Sichuan Jiuniu F.C.')
5. INSERT INTO Sponsors(Sponsor_Name, Sponsor_Company_Size, Sponsored_Teams)
    VALUES ('Coca-Cola', '258820000000', 'Liverpool FC, Tottenham Hotspur');

8. Sport INSERT Statements

1. INSERT INTO Sport (Sport_Name, Venues, Divisions, Audience)
    VALUES ('Soccer', 'Stadio Giuseppe Meazza, Shah Alam Stadium', 'MLS, ELC', '1500000000')
2. INSERT INTO Sport (Sport_Name, Venues, Divisions, Audience)
    VALUES ('Rugby', 'Twickenham Stadium, FNB Stadium', 'English Rugby Union System', 400000000')
3. INSERT INTO Sport (Sport_Name, Venues, Divisions, Audience)
    VALUES ('Basketball', 'Philippine Arena', 'Carrier Dome', 'NBA, WNBA', '1600000')
4. INSERT INTO Sport (Sport_Name, Venues, Divisions, Audience)
    VALUES ('Tennis', 'Arthur Ashe Stadium, Centre Court', 'Open,Division A', '97300000')
5. INSERT INTO Sport (Sport_Name, Venues, Divisions, Audience)
    VALUES ('Volleyball', 'Ahoy Rotterdam, Alamodome', 'NCAA, Division 1', '800000000');

9. Watch INSERT Statement
INSERT INTO Watch(Match_ID, Account_ID, Viewing_Platform)
VALUES
(1, 2, 'Mobile'),
(5, 3, 'Mobile'),
(4, 2, 'Computer'),
(3, 1, 'Video Game Console'),
(2, 5, 'Mobile');

10. Supports INSERT Statement
INSERT INTO Supports(Account_ID, Team_ID)
VALUES
(1, 2),
(5, 3),
(4, 2),
(3, 1),
(2, 5);

11. Funds INSERT Statement
INSERT INTO Funds(Sponsor_Name, Team_ID, Funds_ID)

VALUES
('Nike', 4, 0),
('Underarmour', 3, 6),
('Adidas', 2, 7),
('Puma', 1, 8),
('Coca-cola', 5, 9);

12. Has INSERT Statement

INSERT INTO Has(Match_ID, Sport_Name)
VALUES
1. ('1', 'Football'),
2. ('2', 'Rugby'),
3. ('3', 'Soccer'),
4. ('4', 'Basketball'),
5. ('5', 'Volleyball');

13. Home_To INSERT Statement

INSERT INTO Home_To(Address, Team_Name)
VALUES
1. ('400 Snelling Avenue North Saint Paul', 'Minnesota United FC')
2. ('9256 South State Street', 'Real Salt Lake')
3. ('100 Potomac Avenue SW', 'D.C. United')
4. ('800 South Mint Street', 'Charlotte FC')
5. ('777 Pacific Boulevard', 'Vancouver Whitecaps FC')

14. VIP INSERT Statements

INSERT INTO VIP(Account_ID, VIP_ID, Date_Of_VIP)
VALUES
(1, 45, '2002-08-26'),
(2, 7, '2022-11-21'),
(3, 483, '1982-09-02'),
(4, 32, '2014-01-14'),
(5, 16, '1999-04-27');

15. NonVIP INSERT Statements

INSERT INTO NonVIP(Account_ID, nonVIP_ID)
VALUES
(1, 71),
(2, 42),
(3, 802),

(4, 916),
(5, 3);

16. Makes Bets INSERT Statements

INSERT INTO Makes_Bets(Account_ID, Bet_ID, Payment_Type, Bet_Amount, Which_Team,
Bet_Date, Transaction_ID)
VALUES
(1, 293, 'Cash', 10, 'Giants', '2023-01-05', 1),
(2, 751, 'Debit', 85, 'Cardinals', '2023-01-17', 2),
(3, 29, 'Cash', 2.50, 'Maple Leafs', '2020-12-06', 3),
(4, 305, 'Credit', 1.16, 'Canucks', '2021-02-03', 4),
(5, 45, 'Credit', 15, 'Whitecaps', '2023-02-17', 5);

17. Bets Regulates INSERT Statements

INSERT INTO Bets_Regulates(Company_Name, Bet_ID, Payment_Type, Bet_Amount,
Which_Team)
VALUES
('Caesar's', 293, 'Cash', 10, 'Giants'),
('BETMGM', 751, 'Debit', 85, 'Cardinals'),
('DraftKings', 29, 'Cash', 2.50, 'Maple Leafs'),
('BetRivers', 305, 'Credit', 1.16, 'Canucks'),
('Bet365', 45, 'Credit', 15, 'Whitecaps');

18. Competes For INSERT Statements
INSERT INTO Competes_For(Player_ID, Team_ID, Since)
VALUES
(1, 1, '2022-01-01'),
(2, 2,'2022-01-01'),
(3, 3, '2022-01-01'),
(4, 4, '2022-01-01'),
(5, 5, '2022-01-01');

19. Plays INSERT Statements
1. INSERT INTO Plays(Match_ID, Team_Name)
   VALUES ('1', 'Africa, China')
2. INSERT INTO Plays(Match_ID, Team_Name)
   VALUES ('2', 'Japan, Brazil')
3. INSERT INTO Plays(Match_ID, Team_Name)
   VALUES ('3', 'USA, Hong Kong')

4. INSERT INTO Plays(Match_ID, Team_Name)
   VALUES ('4', 'Australia, Korea')
5. INSERT INTO Plays(Match_ID, Team_Name)
   VALUES ('5', 'Russia, Bangladesh')