All T20 Internationals Dataset (2005 - 2023) | Refinement and Finalization of T20

Internationals Database | Unit 5

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Refinement and Finalization of T20 Internationals Database

Introduction:

This summary encapsulates the evolution of the
"All_T20_Internationals_Dataset_2005_2023," detailing the transition from unit 4 to unit 5,
the refinement of SQL queries for pgAdmin compatibility, and the enhancements made
through graphical ERD evaluation and the addition of new data sources.

Database Creation via pgAdmin:

The database "All_T20_Internationals_Dataset_2005_2023" was constructed using
pgAdmin's graphical interface, adhering to the following steps:

1. Initiated pgAdmin and connected to the PostgreSQL server.

2. Selected the 'Databases' node, right-clicked, and chose 'Create > Database'.

3. Provided the database name "All_T20_Internationals_Dataset_2005_2023" and
   confirmed the creation parameters.

4. Utilized the 'Query Tool' to execute the SQL script, thereby creating the schema's
   tables and relationships.

SQL Query Refinement for pgAdmin Compatibility:

The SQL queries underwent significant refinement to align with PostgreSQL syntax,
transitioning from the **MySQL-oriented AUTO_INCREMENT** attribute to the
PostgreSQL SERIAL data type for primary key auto-incrementation.

*Old vs. New Query Illustration:*

- Sample Old Query:

```sql
CREATE TABLE MatchPlayers (
  MatchPlayersID INT NOT NULL AUTO_INCREMENT,
  MatchID INT NOT NULL,
  PlayerID INT NOT NULL,
  TeamID INT NOT NULL,
  PRIMARY KEY (MatchPlayersID),
  FOREIGN KEY (PlayerID) REFERENCES Player(PlayerID),
  FOREIGN KEY (TeamID) REFERENCES Team(TeamID)
);
```

- Sample New Query:

```sql
CREATE TABLE MatchPlayers (
    MatchPlayersID SERIAL PRIMARY KEY,
    MatchID INT NOT NULL,
    PlayerID INT NOT NULL,
    TeamID INT NOT NULL,
    FOREIGN KEY (MatchID) REFERENCES Match(MatchID),
    FOREIGN KEY (PlayerID) REFERENCES Player(PlayerID),
    FOREIGN KEY (TeamID) REFERENCES Team(TeamID)
);
```

Design Review and ERD Evaluation in PgAdmin:

The ERD generated within pgAdmin affirmed the successful implementation of the database

schema. It provided a clear visual representation, allowing for detailed verification of table

relationships and constraints. - Link
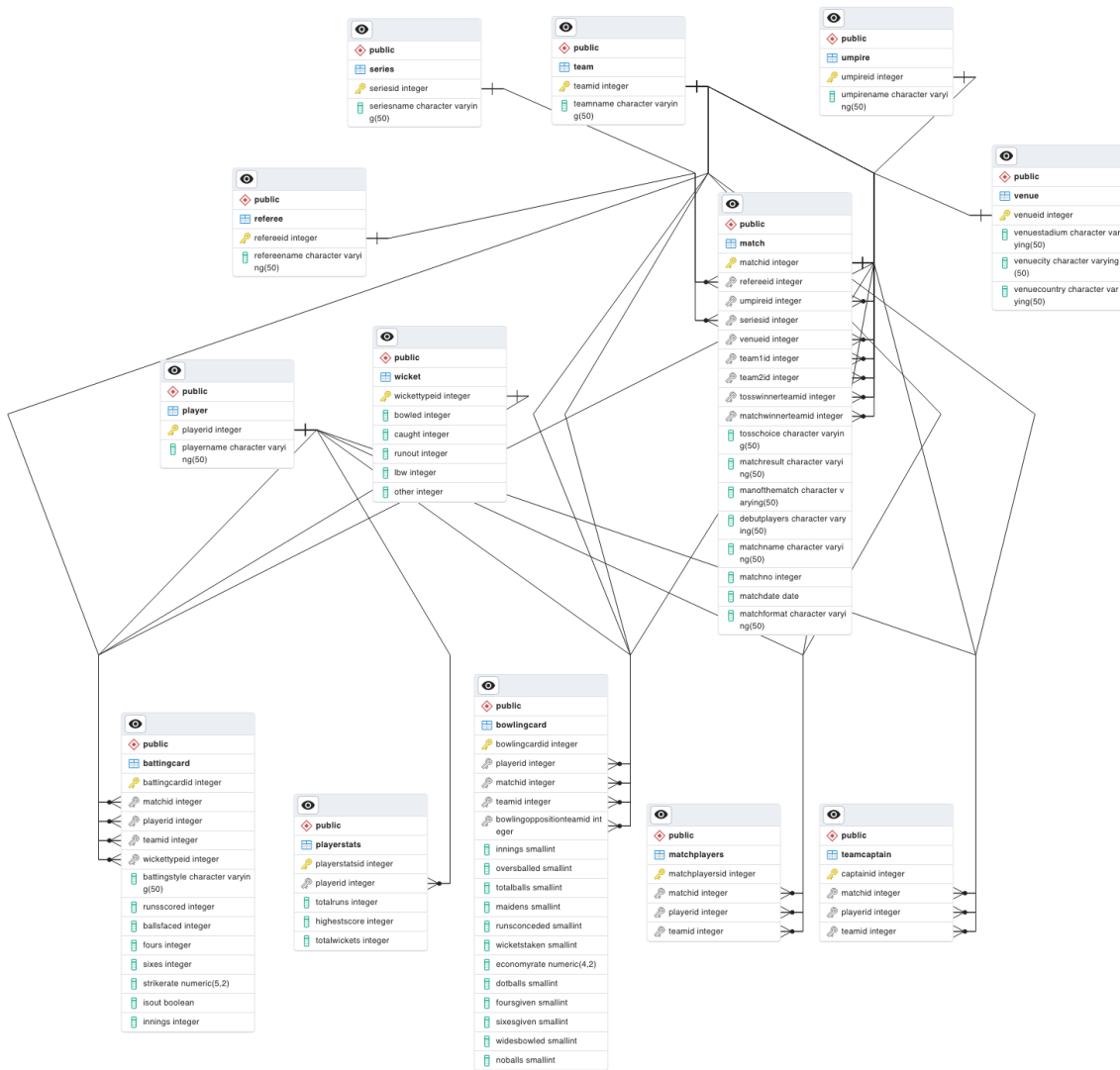
ERD Comparison and Match Confirmation:

A thorough comparison of the initial design and the generated ERD confirmed an excellent

match, with all elements accurately represented and linked.

Inclusion of New Data Source - PlayerStats Table:

A "**PlayerStats**" table was introduced to enrich the database, summarizing players'

performance data thereby providing a comprehensive snapshot of individual achievements.

```
CREATE TABLE PlayerStats (
  PlayerStatsID SERIAL PRIMARY KEY,
  PlayerID INT NOT NULL,
  TotalRuns INT DEFAULT 0,
  HighestScore INT DEFAULT 0,
  TotalWickets INT DEFAULT 0,
  FOREIGN KEY (PlayerID) REFERENCES Player(PlayerID)
);
```

Conclusion:

Completing this project showcases a refined fusion of academic database design with the practical intricacies of PostgreSQL implementation through pgAdmin. The meticulous SQL query refinement illustrates the necessity of adaptable skills in database management, ensuring seamless integration within pgAdmin's framework. The ERD evaluation within pgAdmin validated the design's structural and relational integrity and provided a graphical affirmation of the database's robust architecture. By incorporating the PlayerStats table, the database now boasts an enhanced layer of analytical depth, catering to the nuanced needs of cricket statistics. This journey from a conceptual layout to a fully realized database with a verified ERD is a testament to the evolving landscape of data management, where theoretical designs are brought to life through careful evaluation and strategic enhancements.

Regards,

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Reference:

(n.d.). *ERD Tool*. Pgadmin.

https://www.pgadmin.org/docs/pgadmin4/development/erd_tool.html