

Sports play a major role in the entertainment and fitness industry. From the players to audience engagement, they play a significant role in the success of sport teams; especially teams and clubs at universities. With sports having a lot of moving parts, a lot of data is formed and needed to be sorted and analyzed. Sports can include data from member and match information such as health data, emergency contacts, athlete records, game records, and other team records to media and finance data such as expenses, funding, and user engagement on social media platforms. By organizing this data into a database, Managers and players can pull this data and create actionable insights towards future media engagement, finances, and player efficiency. In order to organize a sport organization's data and create actionable insights towards their audience engagement and organization performance, we will create a database management system containing 10 different entities: Member, Team, Membership Type, Finance, Matches, League, Academic Performance, Social Media, Fundraising, and Game records. These relations will have attributes with primary and foreign keys that will help to identify and organize the data. With cardinality relationships, each relation is joined accordingly. For example, Members relation will have student ID as a primary key along with other attributes regarding the individual. The members relation has a 1:1 cardinality relationship with Membership Type and a many to 1 relation with Teams. The Entity-relationship diagram describes connections between relations in greater detail while the Relational Schemas and Functional Dependencies document will provide detail regarding attributes, types, domain, and constraints. The system's functionality is able to provide a result to and distinct schema regarding the sports organization. To ensure the functionality of the system, 20 distinct schemas as listed below were relied on to test each relationship:

1. Display a list of cricket players in alphabetical order

2. Who are top 5 run scorers players?
3. Display a list of cricket match locations
4. Display a list of injured players.
5. Who are top 5 wicket takers?
6. List of awards won by a specific athlete.
7. Who are competing members?
8. Highest attendance for practices.
9. Lowest attendance for games.
10. List of athletes with a specific batting position.
11. Display number of athletes registered to the traveling team.
12. Display average total of money fundraised
13. Display sponsorships and total money sponsored.
14. Which instagram week has the most engagement?
15. Find batting average for each competing player
16. Find weekly twitter engagement per month
17. Display academic performance of each player
18. Display batting average of regular members
19. Display user engagement in event advertisements
20. Compare user engagement of event advertisements with total money fundraised from each event.

Following these distance syntax and EDR, sample data was created that consists of member information, social media data, and organizations info such as matches, leagues, and events.

Normalization was also performed to ensure any error when running the syntax. Using BCNF

each functional dependency was decomposed into simpler relations to get a better idea of how the attributes are connected.