

Normalization

Normalization is a formal process for assigning attributes to entities which reduces and controls data redundancies, helps eliminate data anomalies where insertions, deletions, updates destroy the integrity of the database and at the end shows a logically correct database.

1 NF - A relation is in 1 NF if and only if the domain of each attribute contains only atomic (indivisible) values, and the value of each attribute contains only a single value from that domain.

- Team (Team id, Team_Name, League_id, games_managed, wins_managed, loss_managed, rank_managed)
- Stadium (park key, Stadium_name, games_managed, wins_managed, loss_managed)
- Player (Player id, Player_name, birth_city, birth_state, birth_country)
- Batsman (Player id, year_played, Team id, League id, hits, home_runs, base_of_ball)
- Fielder (Player id, year_played, Team id, League id, assist, position, error, put_out)
- Pitcher (Player id, year_played, Team id, League id, home_runs, hits, earned_runs_average)
- Hall of Fame (Player id, hall_of_fame_year)
- University (school id, University_name)

2 NF - A relation is in 2NF if it is in 1NF and every non-prime attribute of the relation is dependent on the whole of every candidate key.

- Team (Team id, Team_Name, games_managed, wins_managed, loss_managed, rank_managed)
- League (League id, games_managed, wins_managed, loss_managed, rank_managed)
- Stadium (park key, Stadium_name, games_managed, wins_managed, loss_managed)
- Player (Player id, Player_name, birth_city, birth_state, birth_country)
- Batsman (Player id, year_played, Team id, hits, home_runs, base_of_ball)
- Fielder (Player id, year_played, Team id, assist, position, error, put_out)
- Pitcher (Player id, year_played, Team id, home_runs, hits, earned_runs_average)
- Hall of Fame (Player id, hall_of_fame_year)
- University (school id, University_name)

3 NF - A table is said to be in the Third Normal Form when it is in the 2 NF and it doesn't have Transitive Dependency.

- Team (Team id, Team_Name, games_managed, wins_managed, loss_managed, rank_managed)
- League (League id, games_managed, wins_managed, loss_managed, rank_managed)
- Stadium (park key, Stadium_name, games_managed, wins_managed, loss_managed)
- Location (birth_city, birth_state, birth_country)
- Player (Player id, Player_name, birth_city, birth_state, birth_country)
- Batsman (Player id, year_played, Team id, hits, home_runs, base_of_ball)
- Fielder (Player id, year_played, Team id, assist, position, error, put_out)
- Pitcher (Player id, year_played, Team id, home_runs, hits, earned_runs_average)
- Hall of Fame (Player id, hall_of_fame_year)
- University (school id, University_name)

Dependency Diagram

Team

Team_id	Team_name	Games_managed	Wins_managed	Loss_managed	Rank_managed
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Player

Player_id	Player_name	birth_city	birth_state	birth_country
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Batsman

Player_id	year_played	Team_id	League_id	hits	home_runs	base_of_ball
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Fielder

Player_id	year_played	Team_id	League_id	assist	position	error	put_out
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Pitcher

Player_id	year_played	Team_id	League_id	hits	home_runs	earned_runs_average
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Hall of fame

Player_id	hall_of_fame_year
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University

school_id	University_name
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Stadium

school_id	University_name	Games_managed	Wins_managed	Loss_managed	Rank_managed
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