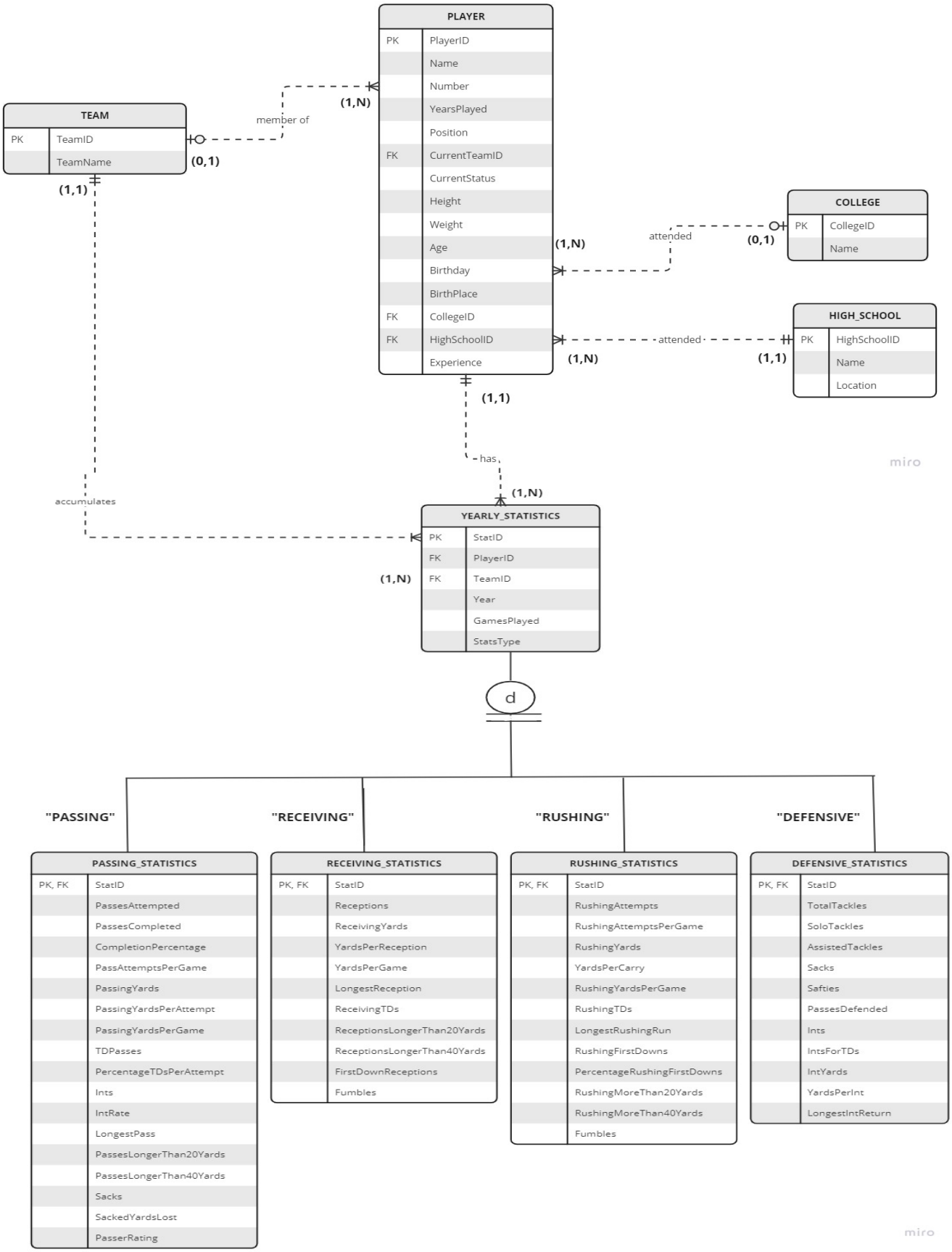
UPDATED ENTITY-RELATIONSHIP DIAGRAM FOR NFL STATISTICS



NOTE:

In the initial design of my ERD, I included 16 tables to comprehensively represent the data structure. Among these, the tables for Game, GameLogs, and Position-Specific Game Logs were integral. However, I encountered a significant challenge in these tables, particularly concerning the mapping of players to their opponent teams.

The primary issue arose from the Position-Specific Game Logs table, which identifies opponents using team abbreviations rather than full team names. This representation proved problematic due to the presence of multiple teams from the same state sharing identical abbreviations, leading to ambiguity in team identification.

To resolve this complexity and maintain the clarity and efficiency of the database structure, I've decided to exclude the Game, GameLogs, and Position-Specific Game Logs tables from my ERD. This update simplifies the relationships and enhances the overall integrity and usability of the database schema. The revised ERD now effectively reflects this change. The relationship between existing tables remains the same.

ENTITIES AND ATTRIBUTES

1. **PLAYER**

- **PK:** PlayerID
- PlayerName
- Number
- YearsPlayed
- Position
- **FK:** CurrentTeamID (refers to TEAM.TeamID)
- CurrentStatus
- Height
- Weight
- Age
- Birthday
- BirthPlace
- **FK:** CollegeID (refers to COLLEGE.CollegeID)
- **FK:** HighSchoolID (refers to HIGH_SCHOOL.HighSchoolID)
- Experience

2. **TEAM (**FK: None**)**

- **PK:** TeamID
- TeamName

3. **COLLEGE (**FK: None**)**

- **PK:** CollegeID
- Name

4. **HIGH_SCHOOL (**FK: None**)**

- **PK:** HighSchoolID
- Name
- Location

5. **YEARLY_STATISTICS**

- **PK:** StatID
- **FK:** PlayerID (refers to PLAYER.PlayerID)
- **FK:** TeamID (refers to TEAM.TeamID)
- Year
- GamesPlayed
- StatsType

6. **PASSING_STATISTICS**

PK, FK: StatID (refers to YEARLY_STATISTICS.StatID)
Columns:

- PassesAttempted
- PassesCompleted
- CompletionPercentage
- PassAttemptsPerGame
- PassingYards
- PassingYardsPerAttempt
- PassingYardsPerGame
- TDPasses
- PercentageTDsPerAttempt
- Ints
- IntRate
- LongestPass
- PassesLongerThan20Yards
- PassesLongerThan40Yards
- Sacks
- SackedYardsLost
- PasserRating

7. **RECEIVING_STATISTICS**

PK, FK: StatID (refers to YEARLY_STATISTICS.StatID)
Columns:

- Receptions
- ReceivingYards
- YardsPerReception

- YardsPerGame
- LongestReception
- ReceivingTDs
- ReceptionsLongerThan20Yards
- ReceptionsLongerThan40Yards
- FirstDownReceptions
- Fumbles

8. RUSHING_STATISTICS

PK, FK: StatID (refers to YEARLY_STATISTICS.StatID)
Columns:

- RushingAttempts
- RushingAttemptsPerGame
- RushingYards
- YardsPerCarry
- RushingYardsPerGame
- RushingTDs
- LongestRushingRun
- RushingFirstDowns
- PercentageRushingFirstDowns
- RushingMoreThan20Yards
- RushingMoreThan40Yards
- Fumbles

9. DEFENSIVE_STATISTICS

PK, FK: StatID (refers to YEARLY_STATISTICS.StatID)
Columns:

- TotalTackles
- SoloTackles
- AssistedTackles
- Sacks
- Safties
- PassesDefended
- Ints
- IntsForTDs
- IntYards
- YardsPerInt
- LongestIntReturn

RELATIONSHIPS AMONG ENTITIES:

TEAM to PLAYER:
This is a one-to-many (1,N) relationship. This indicates that one team can have many players, but each player is associated with at most one team at any given time, as shown by the (0,1) cardinality next to the PLAYER entity, which signifies that a player (retired) could also be without a team.

PLAYER to COLLEGE:
This is a many-to-one (N,1) relationship. Multiple players can be associated with a single college, but each player has attended at most one college, as denoted by the (0,1) cardinality. This means a player may or may not have attended a college.

Note: Attending college is not a mandatory requirement for NFL players.

PLAYER to HIGH_SCHOOL:
This is a many-to-one (N,1) relationship. It means that many players can come from the same high school, but each player has attended only one high school.

Note: Attending highschool is a mandatory requirement for NFL players.

TEAM to YEARLY_STATISTICS:

There is a one-to-many (1,N) relationship between TEAM and YEARLY_STATISTICS. A TEAM can be associated with many YEARLY_STATISTICS records since it has many players, and each player can have multiple yearly statistics records. But each yearly statistic record is associated with only one team.

PLAYER to YEARLY_STATISTICS:

There is a one-to-many (1,N) relationship between PLAYER and YEARLY_STATISTICS. This indicates that a single player can have multiple yearly statistics records (one for each year), but each yearly statistic record is associated with only one player.

YEARLY_STATISTICS to Statistical Entities:

YEARLY_STATISTICS: This is the central entity that stores yearly statistics data for a player in a sports team.
Statistical Entities:

- PASSING_STATISTICS
- RUSHING_STATISTICS
- RECEIVING_STATISTICS
- DEFENSIVE_STATISTICS

There is a one-to-one relationship between YEARLY_STATISTICS and each of the four statistical entities. For each record in YEARLY_STATISTICS, there can be only a single record in one of the four detailed statistical entities.