Film Fiends Project Step 3 Draft

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Overview:

The Film Fiends company would like to expand to include sports media, particularly the National Basketball Association (NBA). They would like to create a website that is driven by a relational database that stores user created NBA game reviews. Users can go into the database and review games that they've watched so others know what the fun matchups and tense finishes are when they go to watch VODs. Users will also be able to choose their favorite team and player. General information about each game, such as the teams that played and the final score, will also be available to users. The database will store information about teams, games, players, users and ratings. The NBA has 30 teams, each team has 12 players, and each team plays 82 regular season games. The postseason can consist of up to 105 games total among 16 teams. The website should be able to support at least 10,000 users.

Outline:

Games: records each game's teams, final score, and if overtime occurred

- gameID: int(12), auto_increment, unique, PK, not NULL
- gameDate: date
- homeTeam: tinyint(2), FK, not NULL
- awayTeam: tinyint(2), FK, not NULL
- homeTeamScore: int(3)
- awayTeamScore: int(3)
- overTime: tinyint (1)
    - NULL if no overtime, number of overtimes otherwise
- postSeason: bool
- 1:M relationships with homeTeam, awayTeam, and ratings
- M:M relationship with players

Teams: records each team's name, coach, and players

- teamID: tinyint(2), auto_increment, unique, PK, not NULL
- teamName: varchar(100), not NULL
- coach: varchar(100)
- currentRecord: varchar(5)
- 1:M relationship with games
- 1:M relationship with players
- 1:M relationship with users

Users: records username, user's favorite player (optional), and user's favorite team (optional)

- userID: int(12), auto_increment, unique, PK, not NULL
- userName: unique, varchar(20), not NULL

- favoritePlayer: int(12), FK
- favoriteTeam: tinyint(2), FK
- M:1 relationship with teams and players
- 1:M relationship with ratings

Players: records player's team, jersey number, height, and weight

- playerID: int(12), auto_increment, unique, PK, not NULL
- playerName: varchar(100)
- teamID: tinyint(2), FK, not NULL
- jerseyNumber: tinyint(2)
- height: varchar(5)
- weight: tinyint(3)
- M:M relationship with games
- M:1 relationship with teams
- M:1 relationship with users

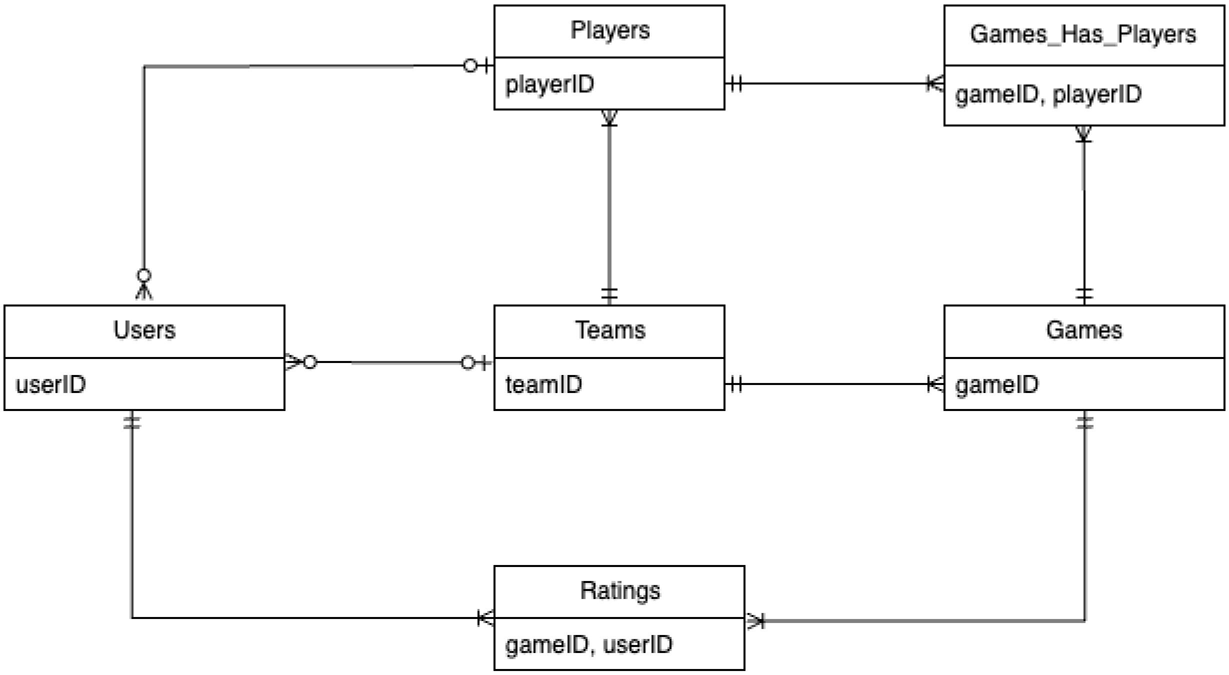
Games_Has_Players: intersection table for Games and Players

- gameID: int(12), FK, not NULL
- playerID: int(12), FK, not NULL
- (gameID, playerID): PK, not NULL

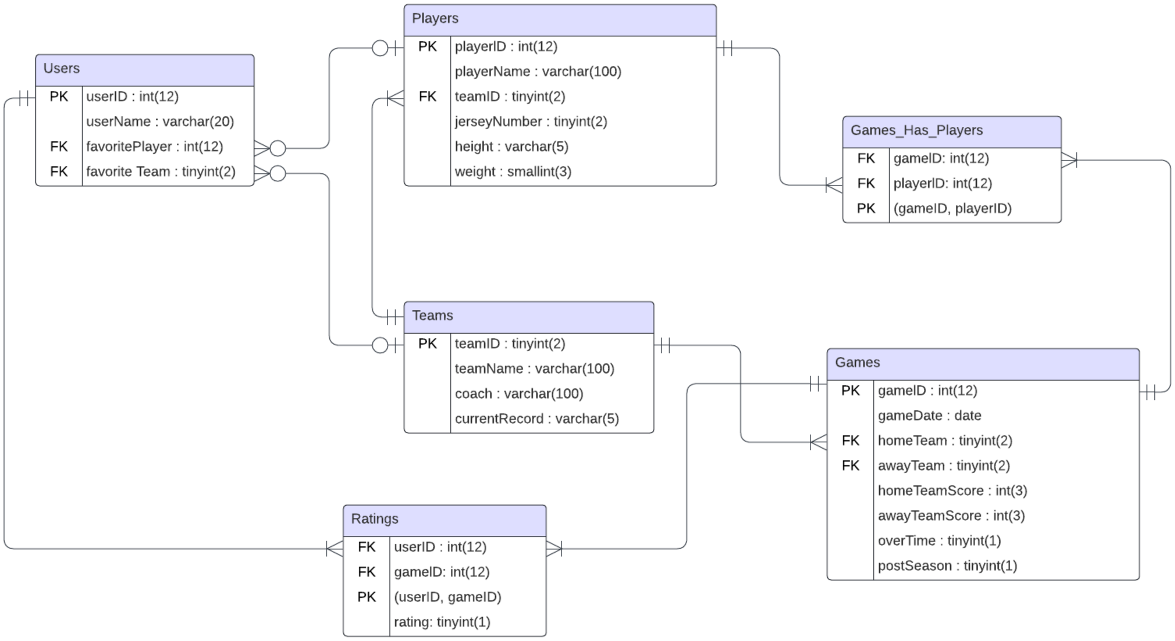
Ratings: records the game rated, the rating, and the user that provided the rating

- userID: int(12), FK, not NULL
- gameID: int(12), FK, not NULL
- (userID, gameID): PK, not NULL
- rating: tinyint(1), not NULL
- M:1 relationship with both users and games

Entity Relationship Diagram:



Schema



Users	
PK	userID : int(12)
	userName : varchar(20)
FK	favoritePlayer : int(12)
FK	favorite Team : tinyint(2)

Players	
PK	playerID : int(12)
	playerName : varchar(100)
FK	teamID : tinyint(2)
	jerseyNumber : tinyint(2)
	height : varchar(5)
	weight : smallint(3)

Games_Has_Players	
FK	gameID: int(12)
FK	playerID: int(12)
PK	(gameID, playerID)

Teams	
PK	teamID : tinyint(2)
	teamName : varchar(100)
	coach : varchar(100)
	currentRecord : varchar(5)

Games	
PK	gameID : int(12)
	gameDate : date
FK	homeTeam : tinyint(2)
FK	awayTeam : tinyint(2)
	homeTeamScore : int(3)
	awayTeamScore : int(3)
	overTime : tinyint(1)
	postSeason : tinyint(1)

Ratings	
FK	userID : int(12)
FK	gameID: int(12)
PK	(userID, gameID)
	rating: tinyint(1)

Example Data

Teams

teamID	teamName	coach	currentRecord
1	Washington Wizards	Brian Keefe	15-67
2	San Antonio Spurs	Gregg Popovich	22-60
3	Charlotte Hornets	Steve Clifford	21-61

Games

gameID	gameDate	homeTeam	awayTeam	homeTeamScore	awayTeamScore	overTime
1	2024-01-20	1	2	127	131	NULL
2	2024-01-29	2	1	118	113	NULL
3	2024-01-19	3	1	124	120	NULL

Players

playerID	playerName	teamID	jerseyNumber	height	weight
1	LaMelo Ball	3	1	6'7	180
2	Grant Williams	3	2	6'6	236
3	Jordan Poole	1	13	6'4	194
4	Kyle Kuzma	1	33	6'9	221
5	Victor Wembanyama	2	1	7'4	210
6	Jeremy Sochan	2	10	6'8	230

Games_Has_Players

gameID	playerID
1	3
1	5
3	1

Users

userID	userName	favoritePlayer	favoriteTeam
1	SlenderMan	5	2
2	RedVelvet	NULL	NULL
3	goat	NULL	NULL

Ratings

userID	gameID	rating
1	2	10
2	1	6
3	3	2

Fixes based on Feedback from Previous Steps:

- We will add a description to each of our entities.
- We will capitalize the ‘d’ in ‘gameId’ and ‘teamId.’
- We will add a CHECK in the Games table to make sure that the homeTeam and awayTeam are not equal.
- We will not require that users have a favorite team and player. It will not introduce any complications to the database, which was confirmed with the TA.
- We will give Ratings a primary key, which will be a combination of two foreign keys (UserID and GameID).
- We will get rid of the ‘x2’ in our ERD since it refers to two teams playing against each other in a game.
- We will add more details and numerical facts in our overview.
- We will add more comments to our SQL file.
- We added playerName attribute to the Players table and gameDate to the Games table. We also split finalScore to homeTeamScore and awayTeamScore in the Games table to make it clear what each team scored.
- We changed some of the datatypes to make sure we can fit all expected data values.
- Peer reviewers mentioned that we did not have CASCADE operations, but we implemented them in Games_Has_Players and Ratings tables.