**Dante Caraballo**

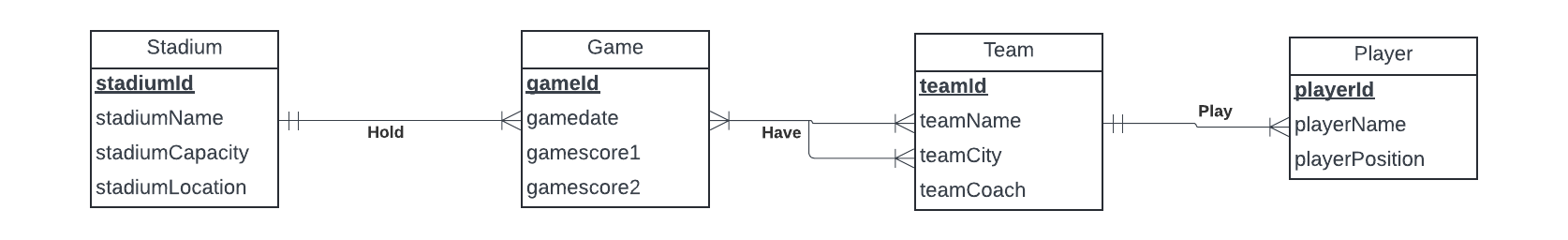
**BUDT702**

Project proposal and example data **(due 10/2)**.

<https://umterps.com/sports/mens-soccer/schedule>

Submit a Microsoft Word in *Project702\_0501\_04\_Proposal.docx:*

* **Determine a meaningful brand name for your project.** 
  + StatArena Incorporation
* **State mission statement(s) and mission objectives for the client.**
  + StatArena is a sports organization that requires a database to manage its teams, players, stadiums, and games. Each team uniquely identifies and stores the team name, city, and the coach's name. Players are assigned unique identifiers and must have their full name, position, and date of birth recorded. Additionally, each player belongs to a specific team. The organization also tracks various stadiums, each having a unique identifier, name, capacity, and location. Games are organized with a unique game ID, and the database must store the game date, scores for both teams and which teams participated. Each game is associated with a specific stadium. The database will help manage the logistics and records for all teams, players, stadiums, and games within the organization.
* **Perform database analysis on entities and relationships:**
  + Identify at least three entities.
    - * Team
        + teamId, teamName, teamCity, teamCoach
      * Stadium
        + stadiumId, stadiumName, stadiumCapacity, stadiumLocation
      * Player
        + playerId, playerName, playerPosition, teamId
      * Game
        + gameId, gameDate, gameScore1, gameScore2, teamId1, teamId2, stadiumId
  + Identify relationships including at least one many-to-many or higher-degree.
    - * **Team**
        + A team can *play* in one-to-many games
        + A team can *play* in one-to-many players
      * **Stadium**
        + Stadium can *hold* one-to-many games
      * **Player**
        + Player *belongs* to one-to-many teams
      * **Game**
        + A game is *held* at a one-to-one stadium
        + A game can *have* one-to-many teams
* Design ER diagram named *Project702\_0501\_04\_ERD* on [Lucidchart](https://lucid.app/lucidchart/0c9748df-56fe-4257-a0f5-2d61acda957c/edit?viewport_loc=5%2C-153%2C1579%2C785%2C0_0&invitationId=inv_0d7e838d-6c66-4c1e-a969-b7b10e338d0a) – do NOT share with TA nor instructor until your final deliverables are ready.



* Convert ER diagram into relational schema and identify primary and foreign keys.
  + Team **(teamId**, teamName, teamCity, teamCoach)
  + Player (**playerId**, playerName, playerPosition, *teamId*)
  + Stadium (**stadiumId**, stadiumName, stadiumCapacity, stadiumLocation)
  + Game (**gameId**, gameDate, gameScore1, gameScore2,*teamId1, teamId2,* *stadiumId*)
* Generate business rules and determine referential integrity actions.
* Describe sample data for every relation.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Relation** | **Foreign Key** | **Base Relation** | **Primary Key** | **Business Rules** | **ON DELETE** | **Business Rules** | **ON UPDATE** |
| Player | teamId | Team | teamId | R1 | CASCADE | R2 | CASCADE |
| Game | teamId1 | Team | teamId | R3 | CASCADE | R4 | CASCADE |
| Game | teamId2 | Team | teamId | R5 | CASCADE | R6 | CASCADE |
| Game | stadiumId | Stadium | stadiumId | R7 | NO ACTION | R8 | NO ACTION |
| Player | teamId | Team | teamId | R9 | NO ACTION | R10 | NO ACTION |

* **R1:**  If a Team is deleted, all associated Players are deleted (CASCADE).
* **R2**: If the team information is updated in the Team table, the team information is updated for the related Players (CASCADE).
* **R3**: If a Team is deleted, all associated Games where the team is the home team are deleted (CASCADE).
* **R4**: If the team information is updated, the team information is updated for Games where the team is the home team (CASCADE).
* **R5**: If a Team is deleted, all associated Games where the team is the away team are automatically deleted (CASCADE).
* **R6**: If the team information is updated, the team information is updated for Games where the team is the away team (CASCADE).
* **R7**: If a Stadium is deleted, the associated Games are not automatically deleted (NO ACTION).
* **R8**: If the stadium information is updated, there is no change to Games (NO ACTION).
* **R9**: If a Team is deleted, no action is taken for the associated Players (NO ACTION).
* **R10**: If the information is updated, no action is taken for the associated Players (NO ACTION).

**Sample Data**

**Player**

|  |  |  |  |
| --- | --- | --- | --- |
| playerId | playerName | playerPostition | teamId |
| 1 | John Hancock | Forward | 101 |
| 2 | Frank Gallahger | Mifield | 102 |

**Team**

|  |  |  |  |
| --- | --- | --- | --- |
| teamId | teamName | teamCity | teamCoach |
| 101 | Ravens | Baltimore | Abdoulay Salam |
| 102 | Black and Yellow | CollegePark | Tia Tran |

**Game**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| gameId | teamId1(Home) | teamId2(Away) | stadiumId | gameDate | gameScore1 | gameScore2 |
| 201 | 101 | 102 | 301 | 2024-10-15 | 2 | 1 |

**Stadium**

|  |  |  |  |
| --- | --- | --- | --- |
| stadiumId | stadiumName | StadiumCapacity | stadiumLocation |
| 301 | Barclays Center | 10000 | New York, NY |