

Part 1 - ER Diagram for Chess Database

Player

- PlayerID (Primary Key)
- Name
- EloRating

Event

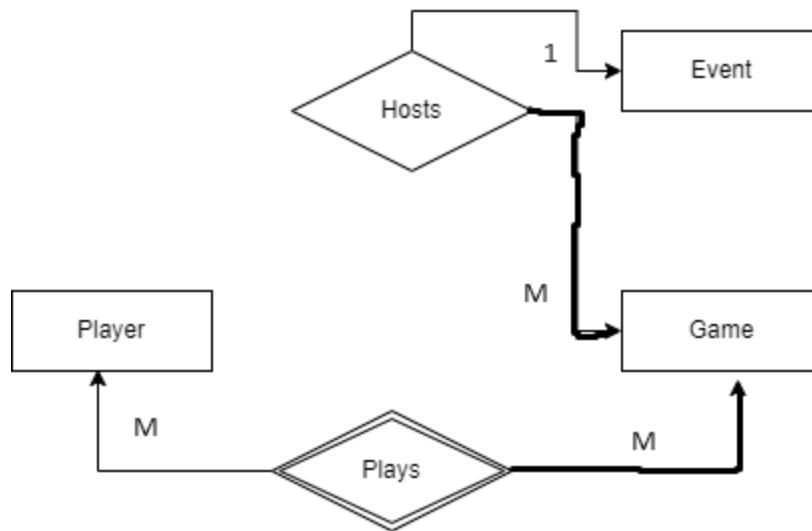
- EventID(Primary Key)
- Name
- Side
- Date

Game

- GameID(Primary Key)
- RoundNumber
- Result
- Moves
- WhitePlayerID(Foreign Key referencing Player)
- BlackPlayerID(Foreign Key referencing Player)
- EventID(Foreign Key referencing Event)
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Constraints:

- A player any number of games;
- An event can host either 0 or more games
- No 2 events can happen



- Player-Game relationship: Many to Many. Players can play multiple games. Each game is mandatory to have 2 players per game. Use WhitePlayerID and BlackPlayerID for foreign keys from game entities referencing PlayerID in the player entity.

Event-Game relationship: 1-to-M cardinality because an event can host many games but each game takes place at one event. Use EventID as foreign key in Game entity referencing EventID in Event entity.

Part 2 - SQL Tables

Player Table

```

CREATE TABLE Player (
    PlayerID INT PRIMARY KEY,
    Name VARCHAR(100),      -- good size for names
    EloRating INT
);
  
```

Event Table

```

CREATE TABLE Event (
    EventID INT PRIMARY KEY,
    Name VARCHAR(100),
    Site VARCHAR(100),
    Date DATE
    UNIQUE(Name, Date)
);
  
```

Game Table

```

CREATE TABLE Game (
    GameID INT PRIMARY KEY,
    Round INT,
  
```

```
Result VARCHAR(7),  
Moves VARCHAR(1000),  
WhitePlayerID INT,  
BlackPlayerID INT,  
EventID INT,  
FOREIGN KEY (WhitePeopleID) REFERENCES Player(PlayerID),  
FOREIGN KEY (BlackPeopleID) REFERENCES Player(PlayerID),  
FOREIGN KEY (Event ID) REFERENCES Event(EventID),  
CONSTRAINT UniqueGame UNIQUE(EventID, Round, WhitePlayerID, BlackPlayerID)  
);
```