**Memory Game Data Model**

**1. User Data**

* **User**: Represents a player of the game.
  + user\_id (Primary Key, Unique): A unique identifier for each user.
  + username (Unique): The user's display name or handle.
  + email (Unique): The user's email address.
  + password\_hash: The hashed password for authentication.
  + profile\_picture\_url: Optional link to a user’s profile picture.
  + created\_at: Timestamp when the user account was created.
  + updated\_at: Timestamp when the user details were last updated.
  + last\_login: Timestamp of the last login for tracking active users.

**2. Game Data**

* **Game**: Represents an individual game session.
  + game\_id (Primary Key, Unique): A unique identifier for each game.
  + user\_id (Foreign Key): Reference to the user who started the game.
  + game\_state: JSON or similar format to store the state of the game, including the layout of cards, current scores, and turns.
  + status: Enum (e.g., 'in\_progress', 'completed', 'abandoned') to track the current state of the game.
  + start\_time: Timestamp when the game started.
  + end\_time: Timestamp when the game ended (if applicable).
  + score: The final score or result of the game.

**3. Game History**

* **GameHistory**: Stores historical data about completed games.
  + history\_id (Primary Key, Unique): A unique identifier for each history record.
  + game\_id (Foreign Key): Reference to the game session.
  + user\_id (Foreign Key): Reference to the user who played the game.
  + score: The score achieved in that game.
  + duration: The length of the game session.
  + created\_at: Timestamp when the history record was created.

**4. Leaderboard Data**

* **Leaderboard**: Tracks top scores and player rankings.
  + leaderboard\_id (Primary Key, Unique): A unique identifier for each leaderboard record.
  + user\_id (Foreign Key): Reference to the user.
  + high\_score: The highest score achieved by the user.
  + rank: Current rank of the user based on high score.
  + updated\_at: Timestamp when the leaderboard record was last updated.

**5. Settings and Configuration**

* **GameSettings**: Stores configuration parameters for the game.
  + setting\_id (Primary Key, Unique): A unique identifier for each setting.
  + setting\_name: Name of the setting (e.g., card\_pairs, time\_limit).
  + setting\_value: Value of the setting (e.g., 10 for card\_pairs).