CSC 667/867
Spring 2018

Term Project
Milestone 3: Web Application Entity Design

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Github Repository
https://github.com/sfsu-csc-667-spring-2018/term-project-team-i

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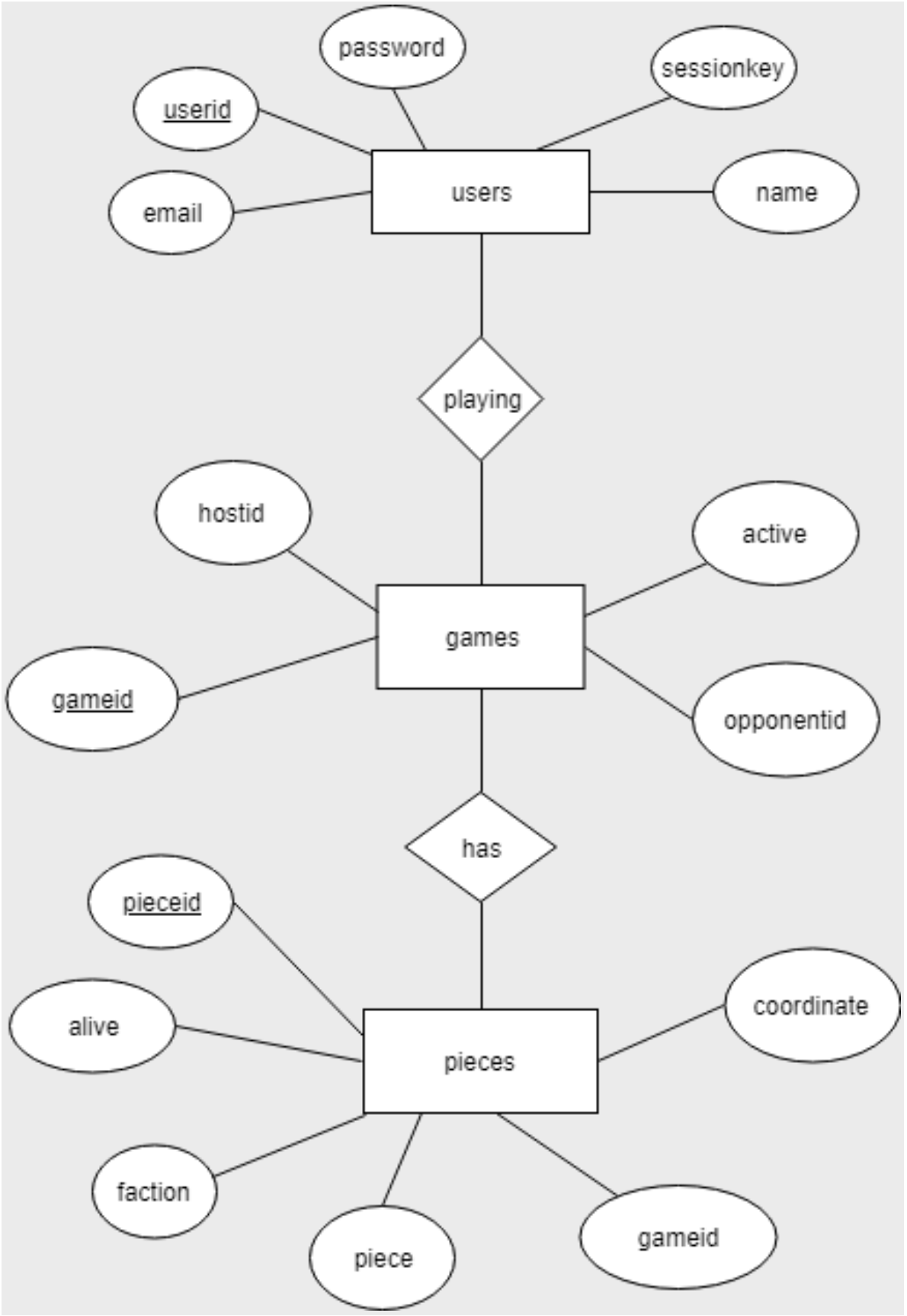
ER Diagram


password
sessionkey
userid
email
users
name
playing
hostid
active
games
gameid
opponentid
has
pieceid
alive
coordinate
pieces
faction
piece
gameid

ER Diagram Information

- User(userid: INT(10), username: CHAR(20), name: VARCHAR(30) password: VARCHAR(20), email: VARCHAR(30), sessionkey: INT(10))

  The user table holds the information of users with the userid as the primary key. The sessionkey attribute keeps track of login information.

- Game(gameid: INT(10), (FK) hostid: CHAR(20), opponentid: CHAR(20), active: INT(3))

  The game table holds the information of the individual games that are running. The gameid is the primary key and the hostid is a foreign key that holds the information of the userid that hosted the game. The opponentid is the other person who joins the game. The active attribute is 0(not active) by default, becomes 1 (idle) when the host creates the game, and becomes 2(active) when an opponent joins the game.

- Pieces(pieceid: INT(10), piece: CHAR(10), faction: CHAR(10), (FK)gameid: INT(10), coordinate: CHAR(2), piece: ENUM, alive: BOOLEAN)

  The pieces table holds in information of the individual pieces of the game. By default, there will be 32 pieces representing the pieces of a chess board. The faction determines the color of the piece. The coordinate determines the location on the grid of the chessboard and will have default starting coordinates. The alive attribute determines if the piece is alive or dead; by default it is alive. The gameid foreign key determines what game that piece is associated with.

SQL Create Table Statements

```
CREATE TABLE users (
      user_id INT NOT NULL,
      username VARCHAR(30) NOT NULL UNIQUE,
      name VARCHAR(30) NOT NULL,
      pass VARCHAR(30) NOT NULL,
      email VARCHAR(30),
```

```
      sessionkey INT,
      PRIMARY KEY (user_id)
);

CREATE TABLE games (
      game_id INT NOT NULL,
      host_id INT NOT NULL,
      opponent_id INT NOT NULL,
      active INTEGER NOT NULL,
      PRIMARY KEY (game_id),
      FOREIGN KEY (host_id) REFERENCES users(user_id)
);


CREATE TABLE pieces (
      piece_id INT NOT NULL,
      game_id INT NOT NULL,
      faction CHAR(10) NOT NULL,
      coordinate CHAR(2) NOT NULL,
      piece CHAR(20) NOT NULL,
      alive INT NOT NULL DEFAULT 0,
      PRIMARY KEY (piece_id),
      CONSTRAINT faction_constraint CHECK (faction IN ('black', 'white')),
      CONSTRAINT coordinate_constraint CHECK (coordinate IN (
                  'A1','A2','A3','A4','A5','A6','A7','A8',

                  'B1','B2','B3','B4','B5','B6','B7','B8',

                  'C1','C2','C3','C4','C5','C6','C7','C8',

                  'D1','D2','D3','D4','D5','D6','D7','D8',

                  'E1','E2','E3','E4','E5','E6','E7','E8',

                  'F1','F2','F3','F4','F5','F6','F7','F8',

                  'G1','G2','G3','G4','G5','G6','G7','G8',

                  'H1','H2','H3','H4','H5','H6','H7','H8' )),
      CONSTRAINT piece_constraint CHECK (piece IN
('pawn','king','queen','knight','bishop','rook')),
      FOREIGN KEY (game_id) REFERENCES games(game_id)
);
```