CS414 Team Project - F17
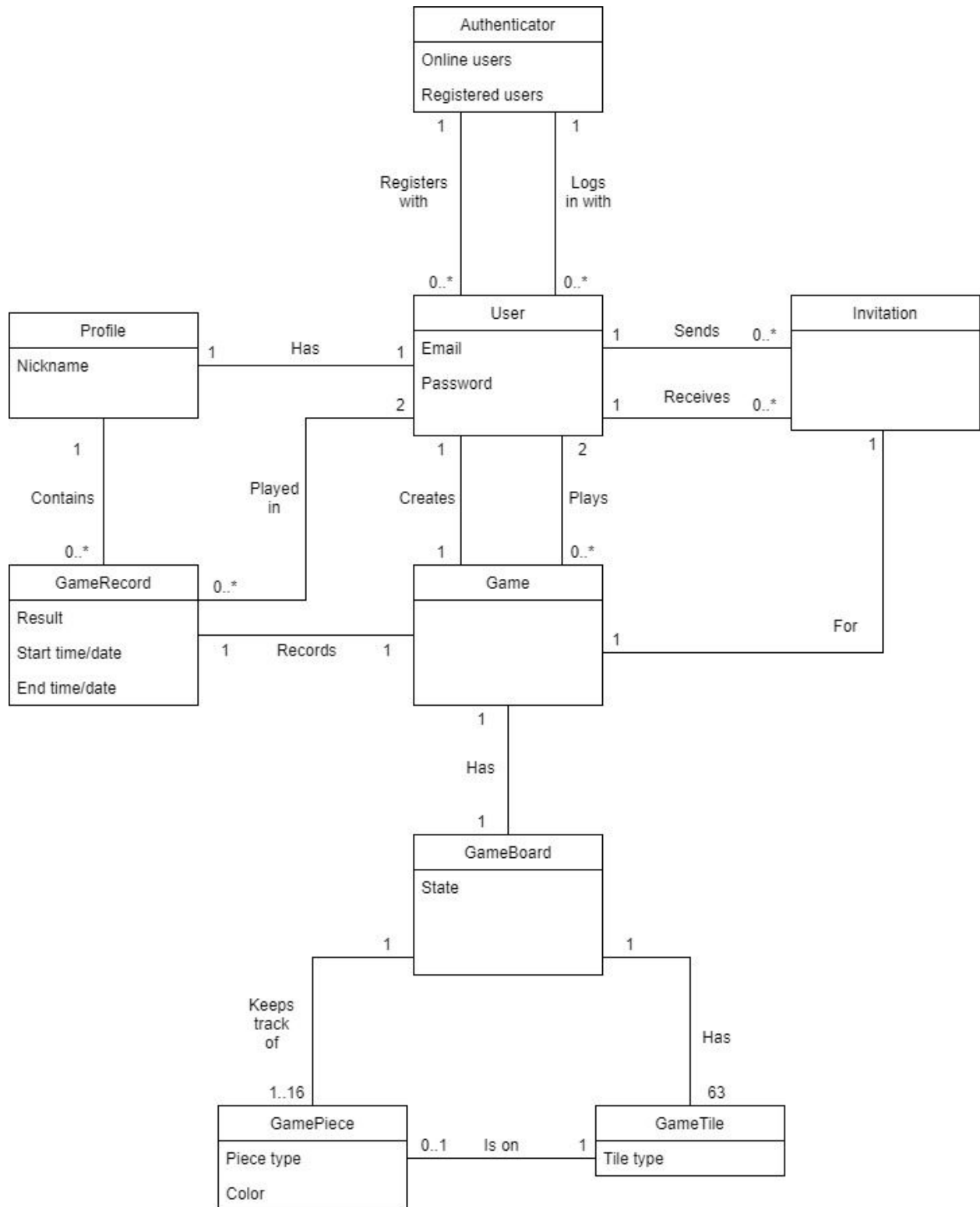Team: And Yet It Compiles
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Core Requirements

1. Any person can register to the system. The registration requires an email (which is unique), a password, and a nickname (which is also unique).
2. A registered user can create a new game. The registered user becomes a player of the created game.
3. A registered user can invite another registered user (or set of registered users) to join a created game.
4. A registered user can accept or reject an invitation to join a game. If the user accepts the invitation, she becomes a player of the game.
5. A registered user can be part of different games at the same time.
6. A registered user only has access to the games she is a player of.
7. A player can quit a game at any time.
8. A registered user can unregister from the system.
9. The system must record the history of games played by a user. The record of a game includes the opponent, start date and time, end date and time, and the end result of the game (i.e., win, loss, tie, draw, abandoned, etc.)
10.A registered user has a profile, which consists of her nickname and history of played games. User profiles are only visible to other registered users.
11.A game cannot start until the minimum number of players required for the game have joined.
12.Once a game starts, new players cannot join.
13.The systems must determine which player starts the game according to the rules of the X game. If there are no specific rules, the user who has created the game is the one making the first move.
14.The system determines whose turn it is according to the game rules.
15.A player can only make moves in her active games.
16.A player can only make moves if it is her turn to play.
17.Players can only make allowed moves. Allowed moves are given by the game rules.
18.The system saves the state of active games. Players can play asynchronously but following the turn rules.
19.The system must determine when a game is over. The system must also determine who is the winner and the loser of each game, when there is a tie, or when there is a draw according the game rules.

Domain Model Diagram

Authenticator
Online users
Registered users

Authenticator — User (1) Registers with (0..*), (1) Logs in with (0..*)

User
Email
Password

Profile — User (1) Has (1)

Profile
Nickname

User — Invitation (1) Sends (0..*), (1) Receives (0..*)

Invitation

Profile — GameRecord (1) Contains (0..*)

User — GameRecord (2) Played in (0..*)

User — Game (1) Creates (1), (2) Plays (0..*)

GameRecord
Result
Start time/date
End time/date

Game

GameRecord — Game (1) Records (1)

Game — Invitation (1) For (1)

Game — GameBoard (1) Has (1)

GameBoard
State

GameBoard — GamePiece (1) Keeps track of (1..16)

GameBoard — GameTile (1) Has (63)

GamePiece
Piece type
Color

GameTile
Tile type

GamePiece — GameTile (0..1) Is on (1)

Common Associations List

A has B	User - Profile Game - GameBoard GameBoard - GameTile
A creates B	User - Game
A plays or played B	User - Game User - GameRecord A user playing a game will be able to move GamePiece objects
A contains B	Profile - GameRecord
A sends or receives B	User - Invitation
A is for B	Invitation - Game
A keeps track of B	GameBoard - GamePiece
A is on B	GamePiece - GameTile
A registers or logins with B	User - Authenticator

Classes

Authenticator	Is responsible for taking a new user and maintaining the list of users in the system, as well as authenticating any logins.
User	Plays Jungle and looks at other player's profiles.
Profile	Contains User's information and game history.
GameRecord	Consists of information from the past game.
Invitation	Used to invite other user to the game.
Game	Is an instance of Jungle game played by two users.
GameBoard	Is a Jungle game board, and tracks the current state of the game.
GameTile	Represents a single tile on the Jungle game board.
GamePiece	Represents a single piece in a Jungle game board.

Attributes in the Domain Models

Authenticator	**Online users -** A list of online users for processing invitations **Registered users -** A list of registered users for authenticating logins

	and fetching user profiles.
User	**Email -** Email address is needed for login. **Password -** Password is needed for login.
Profile	**Nickname -** Nickname, instead of an email address, will be displayed when a user views another user's profile.
GameRecord	**Result -** Result of a single game. Needed to print game history. **Start Time/Date** - The date and time when the game started. **End Time/Date -** The date and time when the game ended.
Invitation	None
Game	None
GameBoard	**State -** Needed to check whether the game is finished or not.
GameTile	**Tile Type -** To differentiate tile types. Can be a den, a trap, a river, or a basic tile.
GamePiece	**Piece type -** To differentiate piece types. From 1-8. **Color -** To determine who owns the piece.