CSC 667/867 Fall 2017
Term Project

Milestone 3: Web Application Entity Design

Game Name: Scrabble

Team Name: term-project-667-project-alavi-chalke-mazumdar-shah-vora

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Group Information

Team Members:

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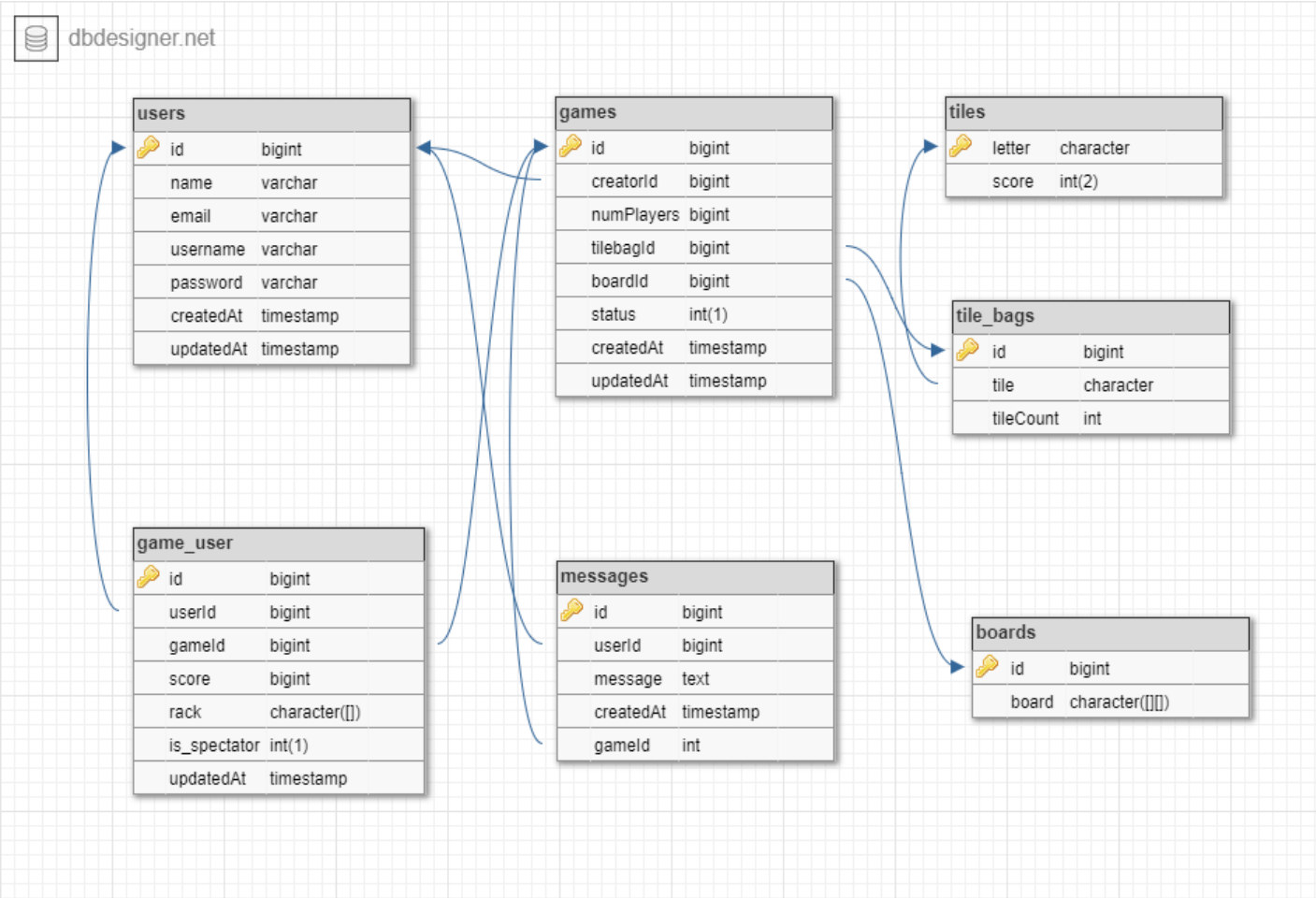
Github Repository:

https://github.com/sfsu-csc-667-fall-2017/term-project-667-project-alavi-chalke-mazumdar-shah-vora

Entity Design

Schema Design



Entities and Key Constraints

users

Primary Key: id
The users table will store all user information entered when someone registers for the first time such as their username, password, etc. The timestamps of when the user entry is created and updated will be maintained.

games

Primary Key: id
Foreign Key: creatorid → references users(id)
Foreign Key: tilebagId → references tile_bags(id)
Foreign Key: boardid → references boards(id)
The games table will have a new entry for each new game created by a registered user. The timestamps of when the game was created and updated will be stored. In addition to this, it will hold data related to all the games created like the number of players for a game, status of a game, board id for the game, and the tile bag id for the tile bag specific to this game.

tiles

Primary Key: letter
The tiles table will store all the letters and their respective scores as per standard Scrabble scores. This information will be accessed when calculating the score for the words created during play.

tile_bags

Primary Key: id
Foreign Key: tile → references tiles(letter)
The tile_bags table will have a new entry each time a new tile bag is allocated to a new game. It will have a fixed tile count which will be updated regularly as the racks of the individual users during a game are filled from it.

game_user

Primary Key: id
Foreign Key: userid → references users(id)
Foreign Key: gameid → references games(id)
The game_user entity will be used to store data about a specific user participating in a game. It will hold data like the tile rack allocated to the user, whether the user is a spectator, the score of the player, etc.

messages

Primary Key: id
Foreign Key: userid → references users(id)
Foreign Key: gameid → references games(id)
This table will store data related to each message exchanged in the chat functionality. It will identify each message with an id, will store the message text, the id of the user sending it, the timestamp, etc. The foreign key will be null if the message is sent in the lobby.

boards

Primary Key: id
This table will hold data related to each game board created for a game. The board id will be referenced by the games entity to identify the board being used in the game. This is important to broadcast the current state of the game to all players.