CSC667-867 Spring 2019

I. Title Page

Team Number: 08

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Milestone: 3

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Link: https://github.com/csc667-02-sp19/csc667-sp19-Team08 (master branch of repo)

II. List of Operations for Each Entity

i). User

- **CREATE** operation:
  The creation process of each user is known as registration. Once created, the user (player) will never be deleted. Thus, there will not be DELETE operation for **User** entity. This operation requires username and password as parameters, where the newly created user will be assigned with a unique id (primary key).
- **READ** operation:
  The retrieval process of each user is known as login. To play uno with others, the user has to either log in his/her account or register as a new user.
- **UPDATE** operation:
  After a uno game has ended, the statistics (WIN/DRAW/LOSE) for each participating user should be updated. A unique user id is needed to execute this UPDATE operation, which can be retrieved from the game status.

ii). Game

- **CREATE** operation:
  Any registered user may create a new game room, and the user who creates this room is the host. The creation process will assign the game room with a unique id (primary key). When a room has more than 2 players, the host may choose to either launch the game or wait for more users.
- **READ** operation:
  When needed, the game should be restored to where it left off. This READ operation will retrieve the saved game status, by using the given game id as the parameter.
- **UPDATE** operation:
  When a participating player loses connection or leaves before the game ends, the game status should be saved. All the players as well as remaining cards have to be updated, where all the information will be encoded as json string.
- **DELETE** operation:
  After a player wins the current game, the host may choose to terminate this game room. Once deleted, the game room will be permanently removed from the database and never be retrieved. A unique game id should be passed as the parameter to delete a uno game.

iii). Card

- **CREATE** operation:
  This one-time creation will be done during the implementation of this internet application. Once created, the cards will never be changed anymore, since the uno cards

are predefined. In other words, there will not be UPDATE or DELETE operation for **Card** entity.

- **READ** operation:
  Each card will be assigned with a unique id (primary key). This unique id will be passed as the parameter to retrieve card information, including number (0~9: normal cards; >9: functional cards) and color (0: functional cards; 1~4: blue, red, green, yellow).

iv). Record

- **CREATE** operation:
  When a players has no remaining cards in his/her hand, the uno game is considered to be over. At this time, the game results for all participating players should be saved to the **Record** entity through this CREATE operation. Once created, the records will never be changed anymore, since the game has ended. In other words, there will not be UPDATE or DELETE operation for **Record** entity.
- **READ** operation:
  In user dashboard, each user can retrieve his/her playing records through this READ operation. A user id will be passed as the parameter, where all the records related to this player will be retrieved as a result set.

III. List of Route Paths

Some general rules about route paths are listed as follows.

- The "**dir**" ahead of each API refers to the root directory of our team project on server.
- Each URL is completely in lower-case format, without any white spaces.
- The name of entity (e.g., user, game, card, etc.) comes right after the root directory, notifying the database model that will be used in this route path.
- The name of operation (e.g., create, read, update, delete) comes right after the entity, which specifies what type of operation will be done.
- The required parameters (e.g., primary id key) comes right after the operation.

Below are some basic route paths. More APIs might be added later according to the implementation requirements.

- **dir/user/create:** create a user (registration)
  Parameter: {

"email": email address,
"username": username,
"password": password
}
Return: {
"code": success or not,
"user_id": primary key of user's account,
"username": username
}

- **dir/user/read:** read the info of a user (login)
  Parameter: {
  "username": username,
  "password": password
  }
  Return: {
  "user_id": primary key of user's account,
  "username": username,
  "win": number of WINs,
  "draw": number of DRAWs,
  "lose": number of LOSEs
  }

- **dir/user/update:** update the info of a user
  Parameter: {
  "user_id": primary key,
  "win": number of WINs,
  "draw": number of DRAWs,
  "lose": number of LOSEs
  }
  Return: {
  "code": success or not
  }

- **dir/game/create:** create a new game
  Parameter: {
  "host_id": user id of the host player,
  "status": game status,
  "unplayed": unplayed cards in pile, encoded as json string,

"remaining": remaining cards for each user, encoded as json string
}
Return: {
"code": success or not
}

- **dir/game/read:** read the info of a game
  Parameter: {
  "game_id": primary key
  }
  Return: {
  "host_id": user id of the host of this room,
  "status": game status,
  "unplayed": unplayed cards in pile, encoded as json string,
  "remaining": remaining cards for each user, encoded as json string
  }

- **dir/game/update:** update the info of a game
  Parameter: {
  "game_id": primary key,
  "status": game status,
  "unplayed": unplayed cards in pile, encoded as json string,
  "remaining": remaining cards for each user, encoded as json string
  }
  Return: {
  "code": success or not
  }

- **dir/game/delete:** delete a game
  Parameter: {
  "game_id": primary key
  }
  Return: {
  "code": success or not
  }

- **dir/card/create:** create a new card
  Parameter: {
  "color": 1~4 for normal colors (blue, red, green, yellow); 0 for functional cards,

"number": 0~9 for normal cards; >9 for functional cards
}
Return: none (one-time creation process)

- **dir/card/read:** read the info of a card
  Parameter: {
  "card_id": primary key
  }
  Return: {
  "color": 1~4 for normal colors (blue, red, green, yellow); 0 for functional cards,
  "number": 0~9 for normal cards; >9 for functional cards
  }

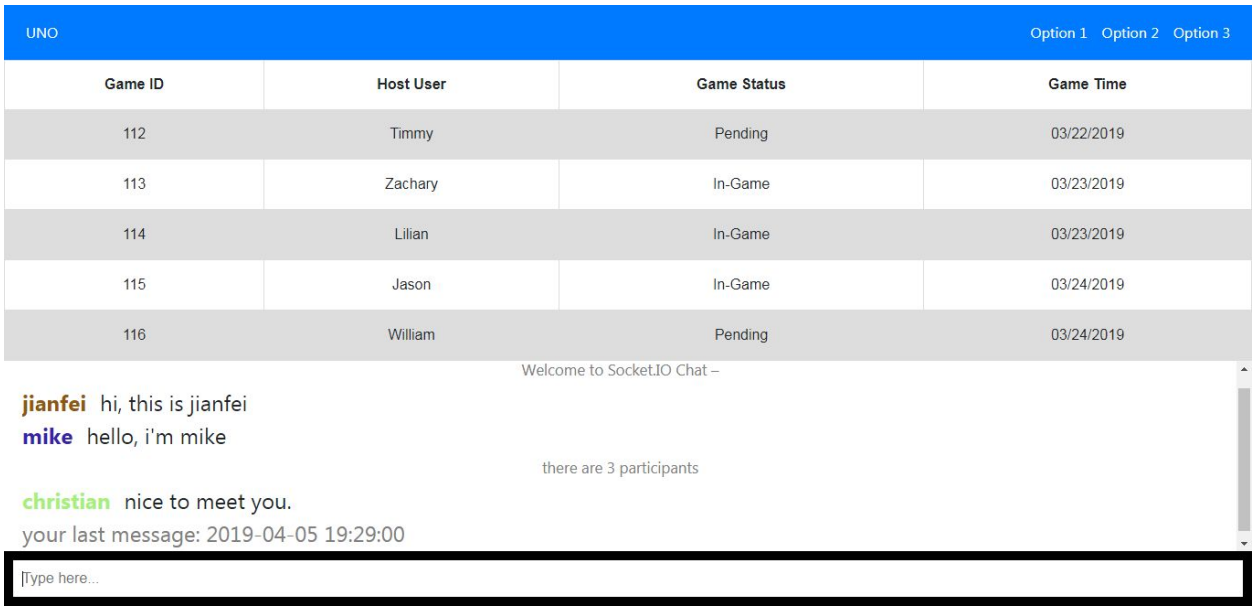
- **dir/record/create:** create a new record
  Parameter: {
  "game_id": game id of the current game,
  "user_id": user id of the participating player,
  "result": 0 for draw; 1 for win; -1 for lose
  }
  Return: {
  "code": success or not
  }

- **dir/record/read:** read the info of a record
  Parameter: {
  "record_id": primary key,
  }
  Return: {
  "game_id": game id of the current game,
  "user_id": user id of the participating player,
  "result": 0 for draw; 1 for win; -1 for lose
  }

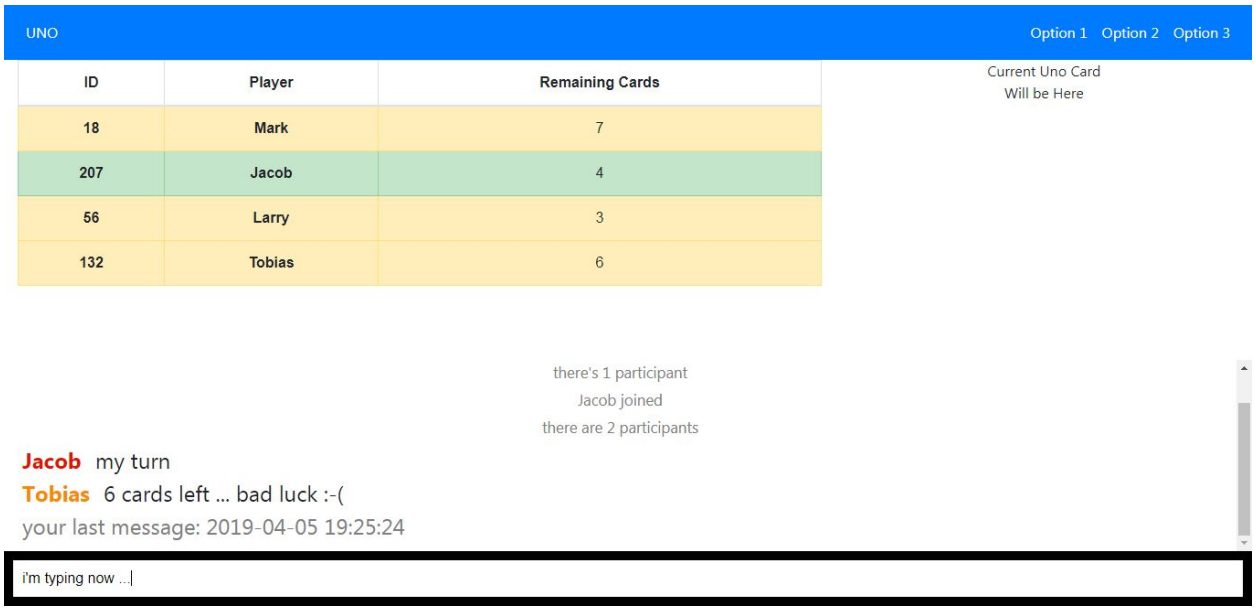
IV. Basic Structure of HTML

Below are the front-end web pages for our team project. The interaction with back-end will be implemented later.

i). Lobby Page (Home Page)

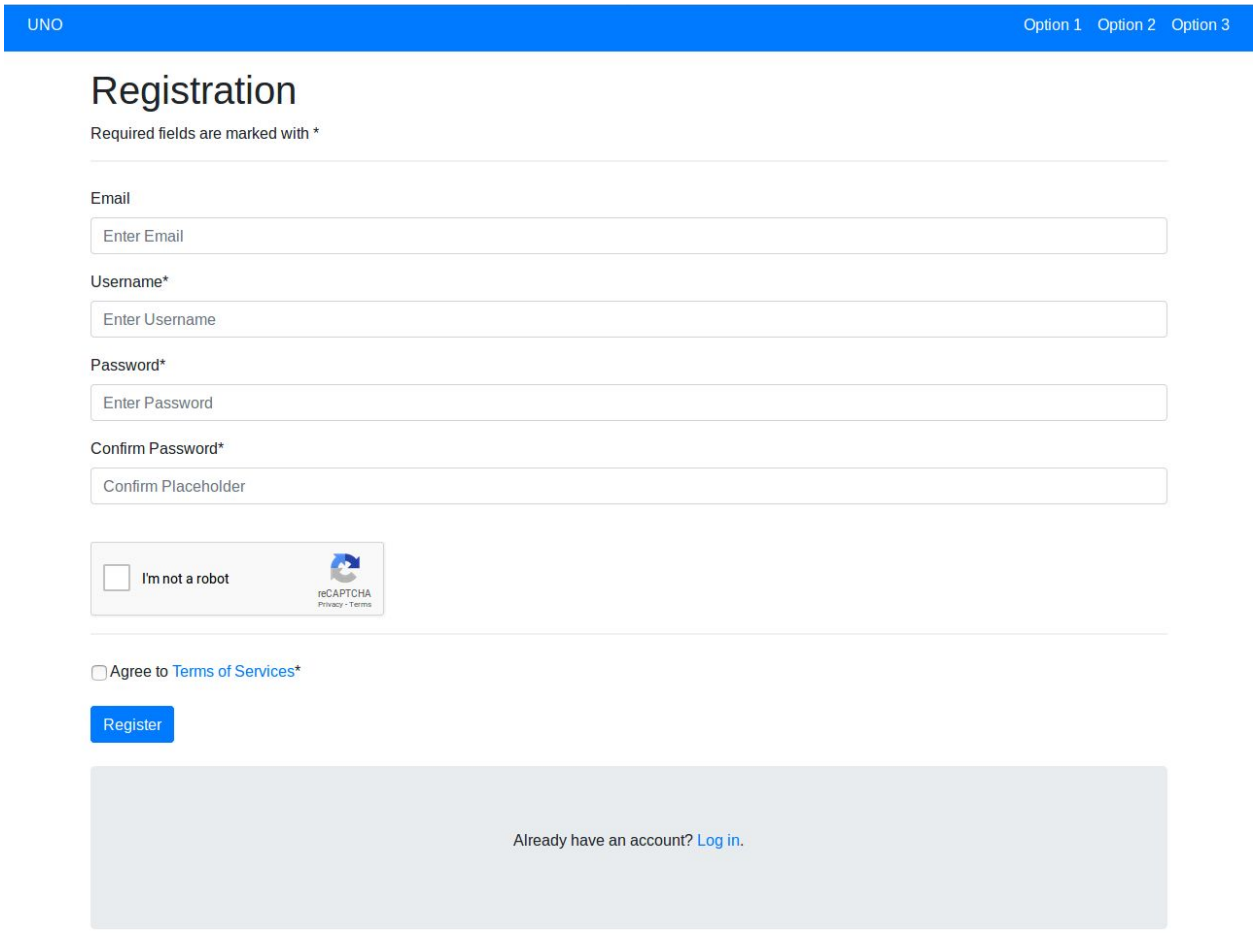


ii). Game Page (Game Room)

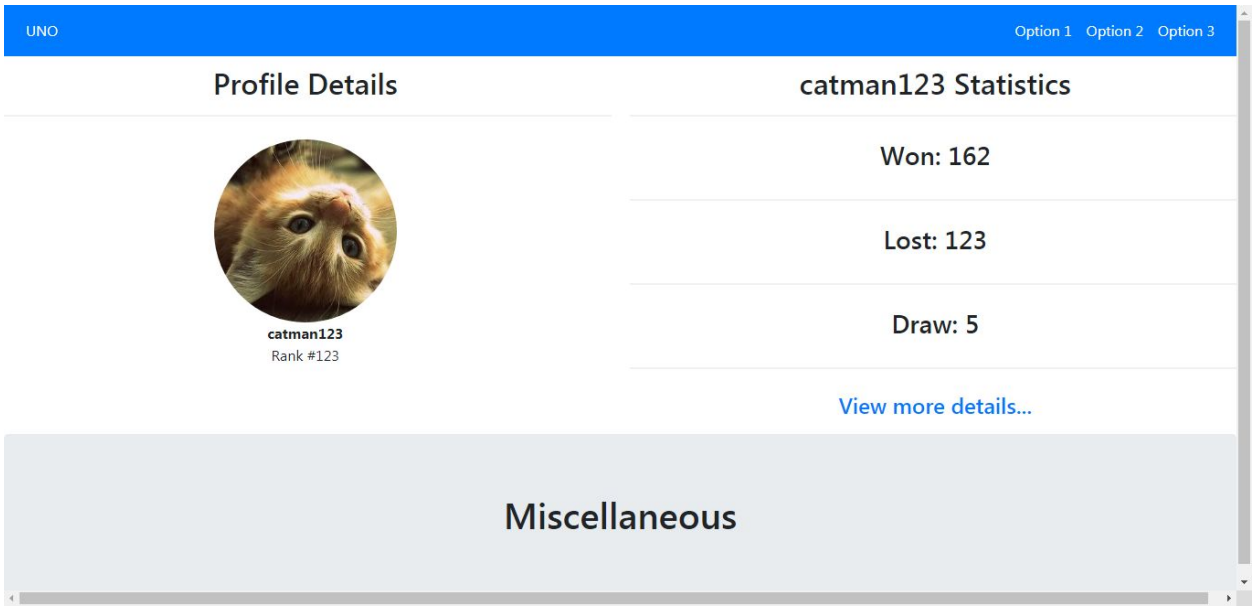


iii). Login Page

iv). Registration Page



v). Profile Page (User Dashboard)



vi). Record Page (Playing Results)