Functionalities

Action 1: Ping Pong Game Logic

Primary In-Charge:
Yuanyuan Dong: Frontend Rendering and game physical logic
Tianyi Chen: WebSocket Communications and synchronization

Features:
1. Users can join in pairs into a game room to play Ping Pong Game.
2. User can control a bar using mouse.
3. A ball with initial velocity is automatically generated and can be bounced physically by wall and user's bar.
4. The display of ball and users' bars should be synchronized between two users through the server.
5. When one user misses a ball, it would lose one point. The one firstly loses three points would lose the game. Players should both see the statistic page of the game as figure "Playing Game.png" in wireframes folder.

Action 2: Player Authentication, Profile and History

Primary In-Charge:
Yuanyuan Dong

Features:
1. User need to register and log in to an account to get into the platform. The registration information includes user name, nick name, bio, password, confirm password and head portrait.
2. After the user has login, it would be directed to a current user's main page like "Current User main page.png" in wireframes folder
3. Start a game:
   - Players can randomly join a game through clicking the "Random Join a room" button in "Current User main page.png" in wireframes folder. This function aims at randomly pair the users who plan to join game and the users who are waiting for another to start game.
   - One player can create a room by clicking the button "Create your room". After clicking the button and before another user join, the page will display "waiting other player" like figure "Current User main page-create a room-waiting.png" shows. After another user joining in the game, the current user's page will jump to "Current User main page-create a room-someone joined.png". And after room owner (current user) click the "start" button, they will both jump to the page "Playing Game.png".
   - Another user can join the room through type in the room number to join like "Current User main page.png" shows.

4. End of game: once one of the users get 3 points the game will end like figure "End of Game.png" shows.
5. User can go to their main profile page from any page except for login and registration page. And user can choose to log out on any page they want.

Action 3: End Game Recovery and History

Primary In-Charge:
Tianyi Chen

Features:
1. Both players when playing the game would send heartbeat to the server and server should frequently take snapshot of the game to record the status.
2. When one player is accidently offline, it is possible for the current user to go back to the game through login again.
3. For recovery issue, only one tab is allowed to be opened for one user to play the game.
4. Player's play history will be recorded and added to the player history. The play history including play time, score and opponent. Player can view score board for all players, which is a rank for total score for all players.