Software Components

Connection Protocol:

The users need to be able to establish a connection with our API, allowing for them and us to send and receive messages related to the requested tournament (signing up, gameplay, etc.). This connection should be commonly known and easily accessible for the clients, hence our choice is using the connection protocol TCP. All incoming and outgoing messages must conform to the JSON protocol with the necessary information for signing up and participating in game play. JSON is a commonly used messaging format protocol that will enable our users to readily interact with our signup and gameplay system. The schema will become available during development and will be readily available to users. This protocol will act as a bridge between the presentation layer (the interface the user interacts with) and our logic layer.

Gateway API:

The will be the publicly facing api that allows users to establish a connection via our connection protocol and delegate information to the proper service(s) - such as signing up, handling gameplay, and processing payments. In essence, it will be a gateway between the user and our services to ensure integrity, security, and accessibility.

Signup Service:

The signup service shall handle the following necessary events - user joining, assigning users to selected tournaments, submitting users to their requested gameplay, and record all necessary information to handle these events in the form a json file. This system will enable gameplay to function as intended by gathering the necessary information and assigning users to proper tournaments.

Gameplay Service:

This service handles gameplay logic - establishing game logic, processing user input, modifying game state, output messages, and determining game over / outcome. Essentially, this service will contain the logic for properly and smoothly executing various gameplay and delegating outcomes to the gateway api. Consequently, this service will primarily be interacting with the gateway api, along with the signup service for obtaining users.

Payment Service:

This will primarily be a proxy on the gateway api and will delegate payment information to an outside source capable of processing information. This proxy shall be able to obtain and process payment information, as well as, process prize money paid out to winners.

Game Visualization:

An optional GUI for displaying to the users the current state of the requested gameplay. The GUI represents the presentation layer, and, therefore, will handle events by the user, communicate with our Gateway API, and present the game state to the user.