

**To:** Software Development Instructors  
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**Subject:** Fish Game System Planning

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### **Overall System Description**

Please find below a brief explanation of five major software components of the complete Fish Game System. Components are listed in order of necessity, meaning that, from a user standpoint, the latter build out of existence of the former. This does not correspond to the order of implementation needed. For example, the Fish game itself can be developed first, but for users to participate in competitive gameplay the tournament and user account components are a precursor.

#### **Tournament Component** *back – mid tier – front*

Component consists of back-end database for storing tournament information (eg rankings, time of wins/loses, etc), mid-tier functionality handling tournament initiation, organizing subsequent rounds, and outcomes, and front-end user interface (UI) for viewing current standings. Component is the foundation of the Dot Game product, as all games offered are accessed via tournament proceedings where users can play or connect AI software to play for them.

#### **User Account/User Connection** *back – front*

User account functionality consists of a back-end database to store user information and a front-end client that connects users to games by allowing them to sign up for an account with Dot Game. The purpose of creating user accounts is to track tournament rankings as well as identify users who make invalid moves to terminate them.

#### **Gameplay** *back – mid tier – front*

The gameplay component will send information to the tournament component regarding game outcomes (back end). The game engine, also known as the ‘referee,’ is responsible at the middle-tier for creating and running a valid game, checking player moves for validity and immediately terminating players who make invalid moves. A front end UI will consist of the game board and all visual displays of score keeping for each game. The role of this component will be to manage referee functionality in order to maintain the fairness and challenging aspect of games.

#### **Processing Payments** *back – mid tier*

Component consists of back end database for storing financial data and sending/receiving information with the bank. It will handle collecting the cover charge for tournament signups and processing the distribution of payout for wins. The purpose of this component is to automate payment processing.

#### **Company Monitoring and Evaluation** *front*

This unique component is a UI for company executives to monitor ongoing tournaments, player statistics, and view any game while it is being played. The role of this stat-tracking UI is to serve as a bird’s-eye view that company executives can use to understand the overall state of their product without extensive technical/software engineering knowledge. This is a purely front-end and observatory feature, and executives will not be allowed to alter the state of any game or tip the referee’s balancing decision-making.