

To: CS 4500 staff
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Subject: "Fish" Game Design Proposal
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System Components:

GUI: Basic components of the GUI include tiles (hexagons) that are either filled in or empty, fish tokens on each tile, penguin pieces, player scores, and a background. This is to give the player a visual representation of the game to work and interact with. In terms of interaction the GUI will need to communicate to the model when a player has decided to move their penguin and where. Any changes in the game state (for example a penguin moving will pick up fish and blank out a tile) will also need to be shown in the GUI.

Model: The purpose of the Model component is to represent the state of a game exclusively in data. In order for the game to remain consistent turn by turn as the pieces are moving and fish are taken, we will need to keep track of the piece positions and score. The Model is also the component that will make the changes to the state of the game when one is required (i.e. a score increase, a piece move, etc.). The ideal Model can exist independent of the GUI. In fact, by changing the numbers stored in the Model, a game of Fish could be played to completion without a GUI.

Controller: This part of the software acts as a connection between the model and the GUI. Changes in the model should be reflected in the GUI. This piece of software should also handle data in the opposite direction - for example when a player moves a piece in the GUI, this change needs to be represented in the model along with score & tile changes.

Client: This component is in charge of sending and receiving messages to/from the server. It will be responsible for sending the actions made during a user's turn to the server and in turn the other users. It is important to maintain consistency across each user's game, and this component represents the "messenger" when things need to be altered. In terms of the AI tournaments, each AI will communicate with the game server through a client.

Server: This component has two main functions: it must maintain the list of who is signed up for/playing in each game and distribute server communications to each player. There has to be a central hub that distinguishes and distributes each game's server communications, otherwise the messages wouldn't know which game they are intended for (assuming that multiple games are happening at the same time). This is also where the payment/tournament info would be stored.