CS242 Final Project Proposal

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1. Abstract

1.1. Project purpose

This is a online go platform which let players to find opponents with similar skill level and even practice with AI. Go is an abstract strategy board game for two players, in which the aim is to surround more territory than the opponent.

1.2. Background / Motivation

Go is a very interesting game which does not have many popularity. So it is hard for people with interest to find a game to play. It is also difficult to learn. So our aim is to make the game finding and learning easier by building a platform where players can easily play and learn.

2. Technical Specifications

2.1. **Platform:** Website, iOS

2.2. **Programming Language**: Javascript, html, css, python, Swift

3. Functional Specifications

3.1. **Features**

- 3.1.1. Users can register, login, logout.
- 3.1.2. Users can create a game with a set of different board sizes
- 3.1.3. Users can find a game and play with another user.
- 3.1.4. Users can pass a turn or resign which is the game ending condition.
- 3.1.5. Users can use the help of basic scoring algorithm to determine win\lose.

4. Timeline

4.1. Week 1 - Basic Setup and learning

- 4.1.1. Xiaofo Yu
  - 4.1.1.1. Set up database and user schema design.
  - 4.1.1.2. Stone capture logic and implementation.
  - 4.1.1.3. Turn based game logic.
- 4.1.2. Jialiang Wang
  - 4.1.2.1. Sound effect design and implementation.
  - 4.1.2.2. Frontend and backend communication.
- 4.1.3. Yitong Huang
  - 4.1.3.1. Login page design.
  - 4.1.3.2. Board and stone design and implementation.

4.2. Week 2 - Realizing rules of go and more functionalities on frontend

- 4.2.1. Xiaofo Yu
  - 4.2.1.1. Design and implement pass function.
  - 4.2.1.2. Design and implement resign function.
  - 4.2.1.3. Simple game scoring.
- 4.2.2. Jialiang Wang
  - 4.2.2.1. Implement name cards for players in a game.

4.2.2.2. Simple game scoring.

4.2.3. Yitong Huang

4.2.3.1. Add pass and resign on frontend.

4.3. Week 3 - Completion of online game finding system

4.3.1. Xiaofo Yu

4.3.1.1. Design database schema for user with match making rating.

4.3.1.2. Implement game finding based on mmr(match making rating).

4.3.1.3. Research on AI of Go

4.3.2. Jialiang Wang

4.3.2.1. Refactor

4.3.2.2. Frontend implementation

4.3.3. Yitong Huang

4.3.3.1. Refactor

4.3.3.2. Frontend implementation

4.4. Week 4 - Simple AI

4.4.1. Xiaofo Yu

4.4.1.1. Design a simple AI for small board game.

4.4.2. Jialiang Wang

4.4.2.1. Implement randomized AI

4.4.3. Yitong Huang

4.4.3.1. Implement Monte Carlo Search Tree