

Design Report

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1 Project Description

Project name:

Happy Gobang

Description:

This Gobang game mainly consists of 4 parts: a PVE mode, a local PVP mode , an online PVP mode and a battle results inquiry system. Just enjoy it and have fun!

2 Structural Plan

The final project is organized in five parts, corresponding to the main window, the local PVP mode, the PVE mode ,the online PVP mode and the battle results inquiry system.

1. The main window:

The main window plays the role of connecting all functions. Though the main window, users can choose the functions they want.

2. The local PVP mode:

This part includes a function to create the gobang board , a function to capture the mouse and placing the chess to corresponding position and a function to judge whether the game is over or not.

3. The PVE mode:

This part also includes a createboard function and a judge over function. Besides, I also write a bot to evaluate the current situation and let the computer to determine where to down the chess.

4. The online PVP mode:

This part include a send and receive function to send the action of one player to the other one and a display function to draw the chess on the board.

5. The battle results inquiry system:

This system consist of 2 functions. One is to read the txt files that the pvp or pve mode generated and another is to draw the information on the board.

3 Algorithmic Plan

The PVE mode part is the most complex part in my project.

In this part, I had to write serval functions to judge different chess types and set reasonable score to each type so that the bot will get the right position to down chess. That is very tedious and I need to develop a useful method to test the chess board.

4 Module List

The module:

tkinter–To create the window and the board.

pillow–To load the picture.

socket–To connect the server to the client.

numpy–To store the data.

other source: Only little look up the usage of tkinter and how to develop a bot to evaluate the chess on the board in the internet.