

Warring States

Team: wed16v

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START



Summary

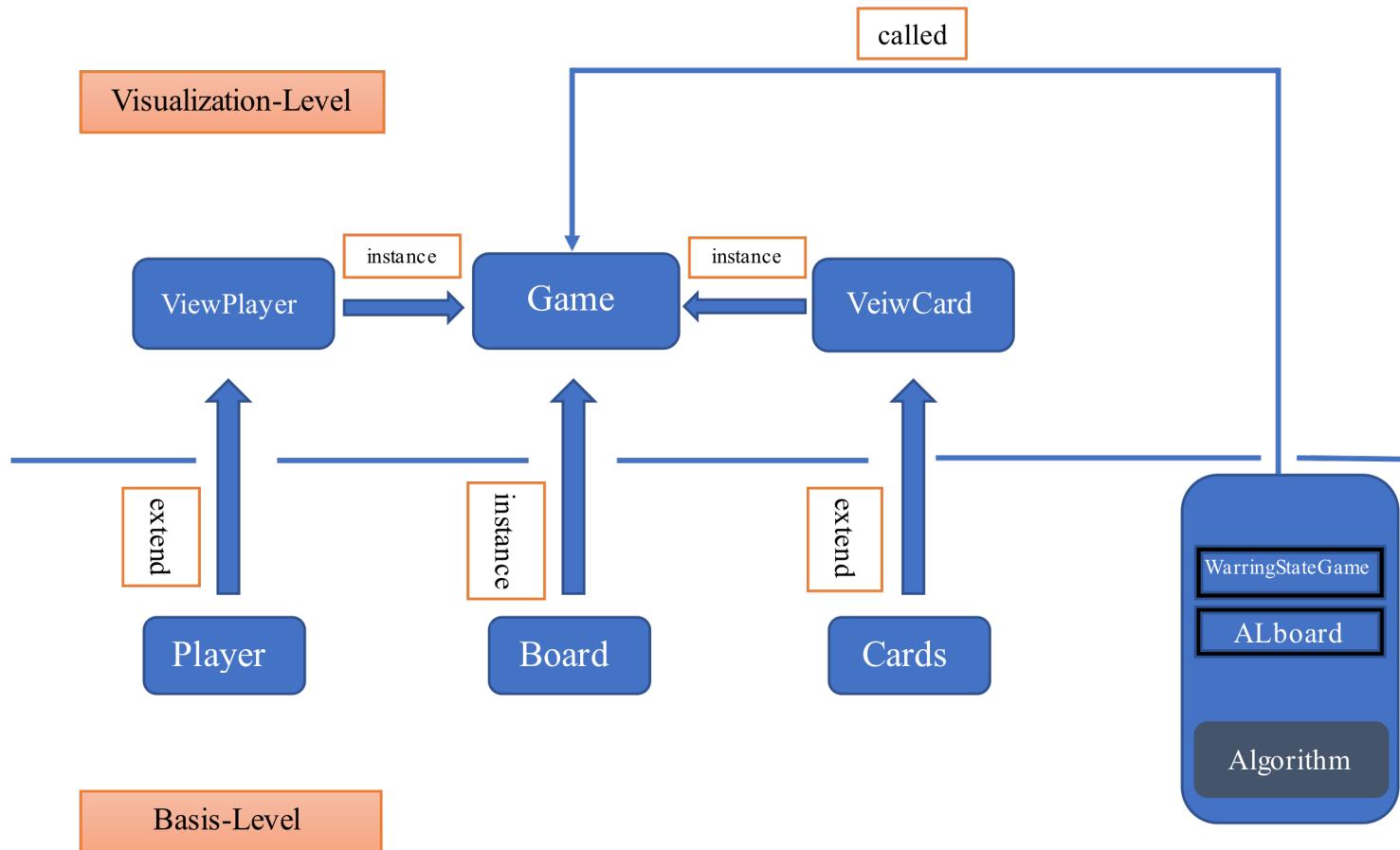
Our game is an attractive card game based on object-oriented java programming language.

We created separated classes for different parts of functions.

All of the classes are classified into three layers: basic level, visualization level and algorithm for agent.

Wonderful user experience: You can play with computer when you are along, or play with friends and choose different difficulty modes.

Design approach: Object-oriented



- It has two levels : Basis-level includes Player class, Board class and Card class, which are the foundation of the game.
- Visualization-level include ViewPlayer class, Game class and ViewCards class, which extends the basis-level classes separately.
- WarringStateGame class and Alboard class are the functional classes, which only include static functions.
- Algorithm class using Minimax algorithm and alpha-beta pruning, which computes the next step for the advanced agent.

Basic Level Classes:

player Class

- Record the step that the player is given the card. It will be used when judging the ownership of the flag, when several players hold same number of supporters.
- This class is the foundation of the ViewPlayers.

Board Class

- Provide the basic methods for location-related problems. Use coordinates to establish the relations between card and location.
- Set cards at the beginning. Collect same countries along with Zhangyi's movement. Find the coordinates of aim, Zhang Yi and the cards behind the aim location.

Cards Class

- Cards have the field of ID.

Visualization Level Classes:

ViewPlayer:

- Extends Player. Visualize the changes of players' supporters. The buttons represented players. They are showed on the right side in the main interface of the game.

Game:

- It has instance of Board, ViewPlayer and ViewCards and has a sequence of instructions to call methods of Algorithm and other classes.

ViewCards:

- Extend Cards. Visualize the changes of cards. It has buttons and methods which represented layout of cards. They are showed in the middle in the game.

Algorithm:

- Using the MiniMax algorithm and alphe-beta pruning to get the next step of computer.

Functional Classes:

WarringStateGame class :

include static functions. This class is for checking placement and movement legalization.

Alboard class:

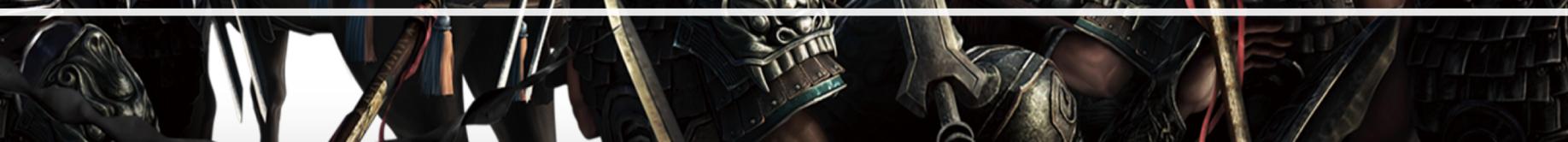
This class is a expansion of WarringStateGame class. Its functions are initializing the cards placement, getting current placement, judging valid movements' choices, determining the winner.

Warring States



START

Screen shots:





Welcome!

Warring States



VS computer

VS smart computer

2 players

3 players

4 players



* Press START/RESET to get started!

← BACK

EXIT

START/RESET

Beginning

CARDS

LAYOUT



<- BACK

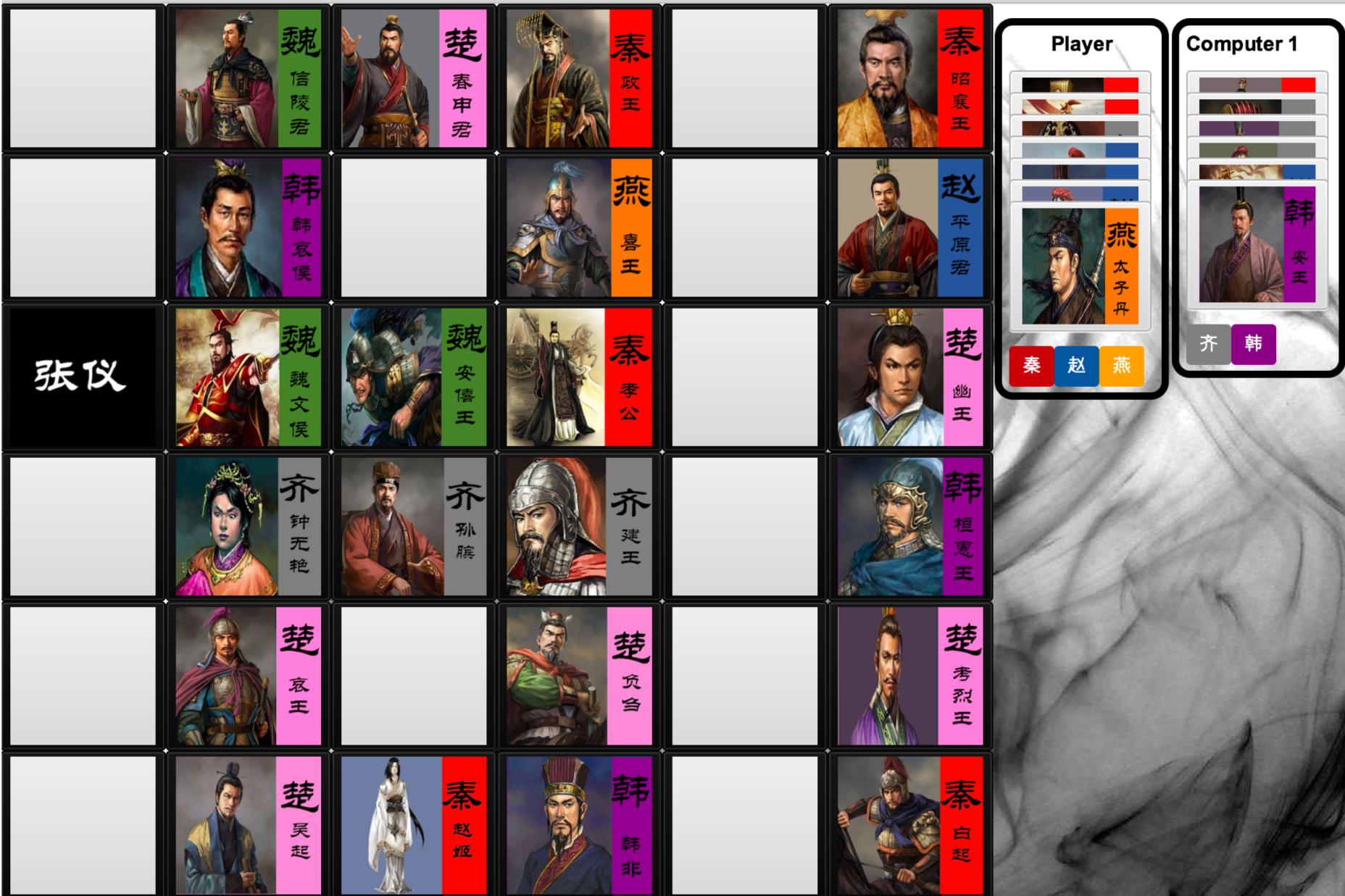
EXIT

START/RESET

Player

VS

One agent



<- BACK

EXIT

START/RESET

Warring States Game

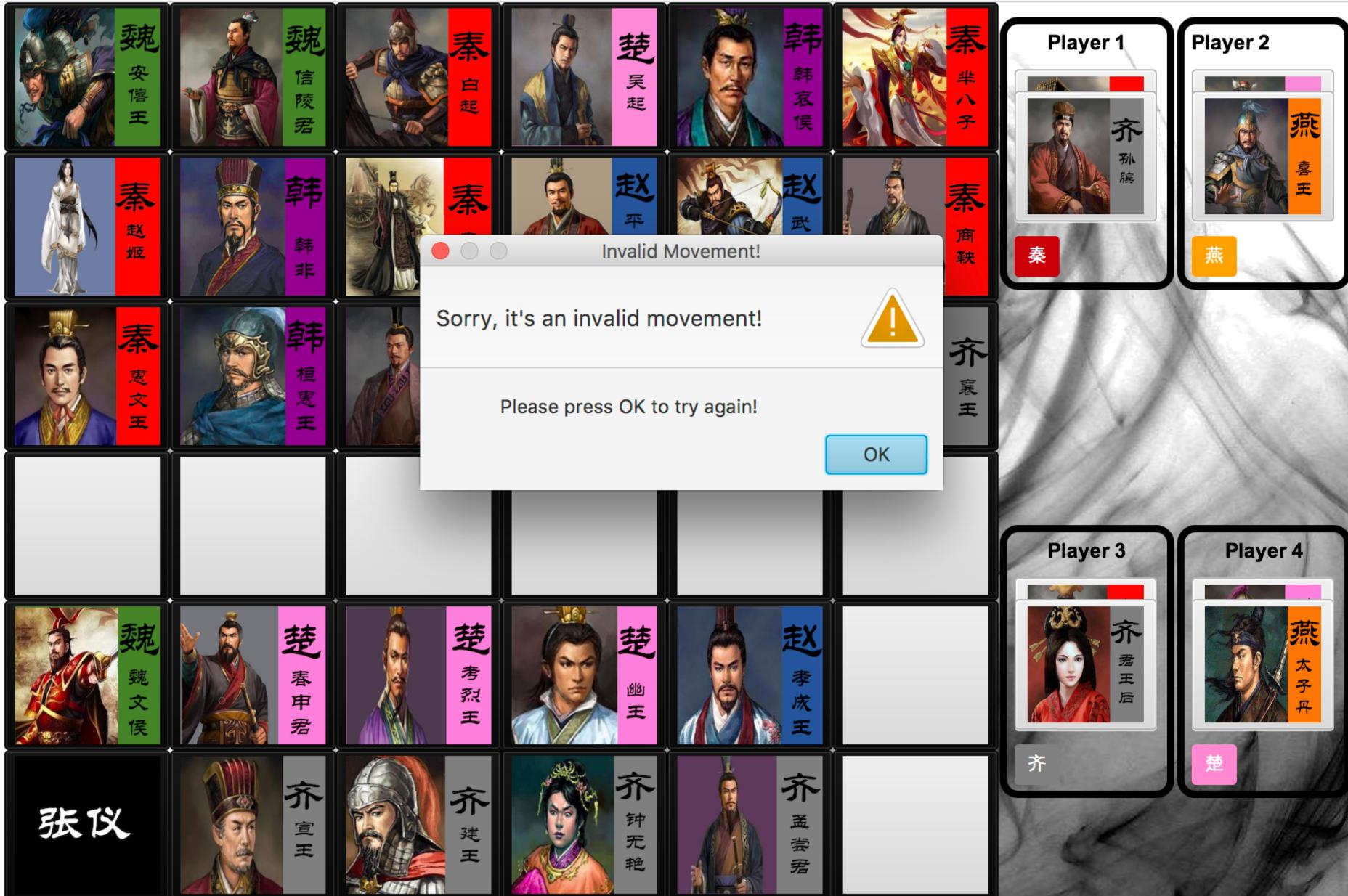
Player

VS

Multi-agents



Multiplayer



<- BACK

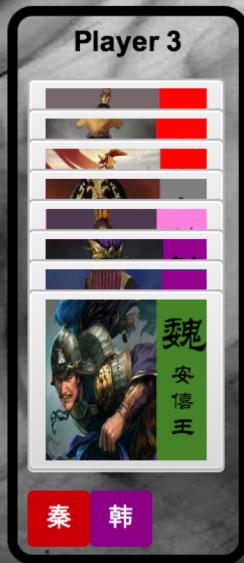
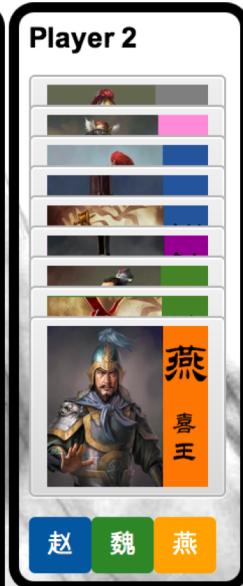
EXIT

START/RESET

Player

Wins!

* Press START



← BACK

EXIT

START/RESET

Agent
Wins!

The screenshot shows a 6x6 grid board for the Warring States Game. The board has several slots occupied by characters from different states:

- Row 1, Column 1: Empty
- Row 1, Column 2: Zhao (李牧)
- Row 1, Column 3: Empty
- Row 1, Column 4: Qi (齐宣王)
- Row 1, Column 5: Empty
- Row 1, Column 6: Empty
- Row 2, Column 1: Han (韩安王)
- Row 2, Column 2: Zhao (赵孝成王)
- Row 2, Column 3: Empty
- Row 2, Column 4: Qin (秦)
- Row 2, Column 5: Empty
- Row 2, Column 6: Empty
- Row 3, Column 1: Qin (秦政王)
- Row 3, Column 2: Han (韩桓惠王)
- Row 3, Column 3: Empty
- Row 3, Column 4: Empty
- Row 3, Column 5: Qin (秦商鞅)
- Row 3, Column 6: Empty
- Row 4, Column 1: Empty
- Row 4, Column 2: Empty
- Row 4, Column 3: Empty
- Row 4, Column 4: Empty
- Row 4, Column 5: Empty
- Row 4, Column 6: Empty
- Row 5, Column 1: Empty
- Row 5, Column 2: Empty
- Row 5, Column 3: Empty
- Row 5, Column 4: Empty
- Row 5, Column 5: Empty
- Row 5, Column 6: Empty
- Row 6, Column 1: Empty
- Row 6, Column 2: Empty
- Row 6, Column 3: Empty
- Row 6, Column 4: Empty
- Row 6, Column 5: Empty
- Row 6, Column 6: Empty

A central message box displays the text "Sorry, computer wins!" and "T_T". It includes a blue "OK" button and an information icon.

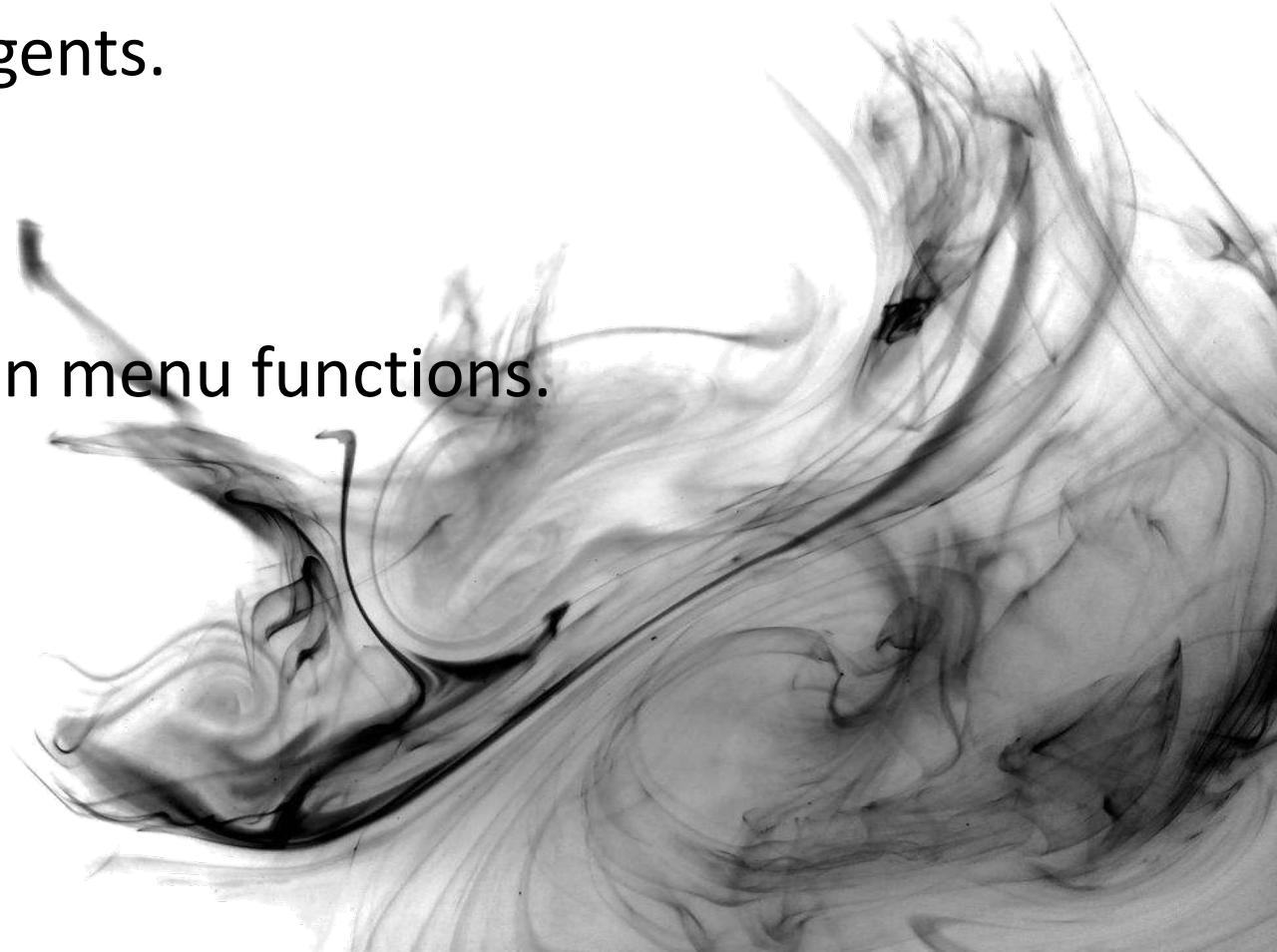
To the right of the board are two vertical lists:

- Player 1:** Shows a stack of cards representing characters from various states: Qin (秦), Han (韩), Wei (魏), Chu (楚), and Qi (齐).
- Computer:** Shows a stack of cards representing characters from various states: Qin (秦), Han (韩), Wei (魏), Chu (楚), and Yan (燕).

At the bottom of the screen are three buttons: "< BACK", "EXIT", and "START/RESET".

Interesting Parts:

- Different number of players and agents.
- Different levels of agent.
- Attractive user interface.
- Reset, exit, and go back to the main menu functions.



THANK YOU FOR WATCHING

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