

Final Project Proposal:

War Chess Simulator

It's a two player game with several chess pieces can be chosen. Each player has a limitation on money to limit the amount of pieces they can choose. Each piece has a different ability. The King will be as smart as possible to evade the chase from enemy Pawns, and other pieces will try to protect him. The Rook can change position with the King, the Knight can jump over as a shield for the King, the Queen can ask other Pawns following her, and the Bishop can make part of the wall appear and disappear in order to help the King. Pawns will chase the enemy King at a lower speed. The game will be limited in a time range, with a timer, and the player will win from killing the enemy King. Players can decide which pieces they want, and can only simulate one while playing. The game will have many different social forces act together, and influence each other by influencing the pieces. The improvements are from social force and we will add a few more social forces. By the way, the players can only choose their pieces, they cannot control it. All pieces' movement is dependent on the piece force that is designed by our own.

1. The project is based on B1 navigation, B4 social force.
2. The piece force that is given by other pieces, which is implemented from B4 social force.

Force list:

- 1) King has the avoid force, which can avoid the enemy's attack by calculating the direction of the enemy force.
- 2) Rook has the drag force, which can drag King with a strong force.
- 3) Knight has the protection force, which can move between the enemy and the King by calculating their position. And this force is 3D force, which means Knight will jump over some pieces.
- 4) Queen has the drag force, which can drag Pawns who is close to the Queen.
- 5) Pawn has the escape force when their blood volume is very low.

All pieces do not have a goal force and the agent force because we want them to collide with each other, and they have no goal. Furthermore, we will design a force to achieve rigidbody. But we still need the wall repulsion force.

3. We will write a final report and submit a demo will to demonstrate and evaluate our system.