

W200 Summer 2020 Project 1 Proposal

Heroes of Might and Magic Monopoly board game

Summary

The goal of this project is to create monopoly board game for 2~4 players in the Python environment. Players are playing as heroes on a board. Moving round by round decided by two dices, to collect gold, army and purchase or conquer castles. The player who owns no resource or castles will quit the game. The final survivor wins the victory.

List of Class

1. Hero:

Player of the board game, moving around the board step by step decided by the dices. Play can buy or conquer castles, discover equipments on the board. Heroes will die after lost all the gold and army.

Attribution: position, attack, defense, army number, gold number, list of owned castles, equipment

Function: attack_castle (Hero, Castle), outputs the castle ownership, cost of army for the attacker, cost of army for the defender.

buy_castle (Hero, Castle), outputs the heroes' gold amount, change of castle ownership.

hero_move (Hero, Dice), outputs new location of hero.

2. Castles:

Main properties heroes can conquer or buy to own in the game. Castles provide certain number of gold and army to the owner heroes.

Attribution: position, owner, production, prize, location, stationed army

3. Board:

Main map records heroes in play, location of castles, equipment, shop(optional)

Attribution: list of heroes, list of castles, list of equipment

Fuction: round_step, moving to the next round after all players' activities, list heroes' details: location, castle capture, army, gold; print map of board.

4. Dice:

To decide movement of heroes and random event.

Attribution: numbers

Function: roll_dice (Hero, Dice), outputs steps hero will move in the current round.

5. Equipment:

Equipment can enhance heroes' attack, defense stats, which affects calculation during the castle conquer

Attribution: owner, effect, value (optional).

6. Shop (Optional)

Special function block on the board, heroes could trade equipment for gold or pay gold to sum army here.

Attribution: price for army, equipment

Function: `sell_equipment (Hero, equipment)`, outputs heroes' gold amount change.
`buy_army (Hero)`, outputs heroes' gold amount, army update.

Outcomes

A monopoly board game that players can moving on board to acquire properties resource, will be created in python environment (Python libraries that come installed with Anaconda).

If time permits, I plan to add special function blocks e.g. shop on the board, expand more details of equipment, castles, board map to emphasize the Heroes theme.

Future work, I aim to study and implementation of the Pygame modules for GUI, sound effect realization.