Final Project

HOUNDS AND HARE

Name: Shunlei Ning

Qianqian Chen

1）There are two players, one representing the hounds and the other represents the hare. Each player takes turn to make a move. The player representing the hounds can only move one hound at one time.

2）The three hounds try to corner the hare and the hare tries to escape to the left of   all hounds.

3）The hounds can move up and down, straight forward, or diagonally forward toward the right end of the game board. The hare can move horizontally, vertically, or diagonally in any direction.

4）The hounds win if they "trap" the hare so it can no longer move.

5）The hare wins if it "escapes" to the left of all three hounds.

6）variant If the hounds move vertically ten times in a row, they are considered to be "stalling" and the hare wins.
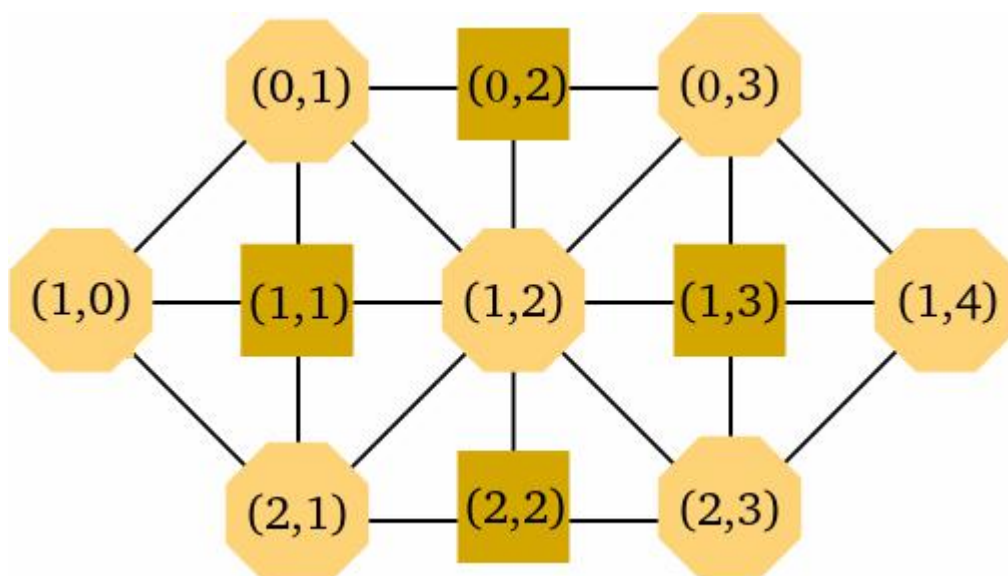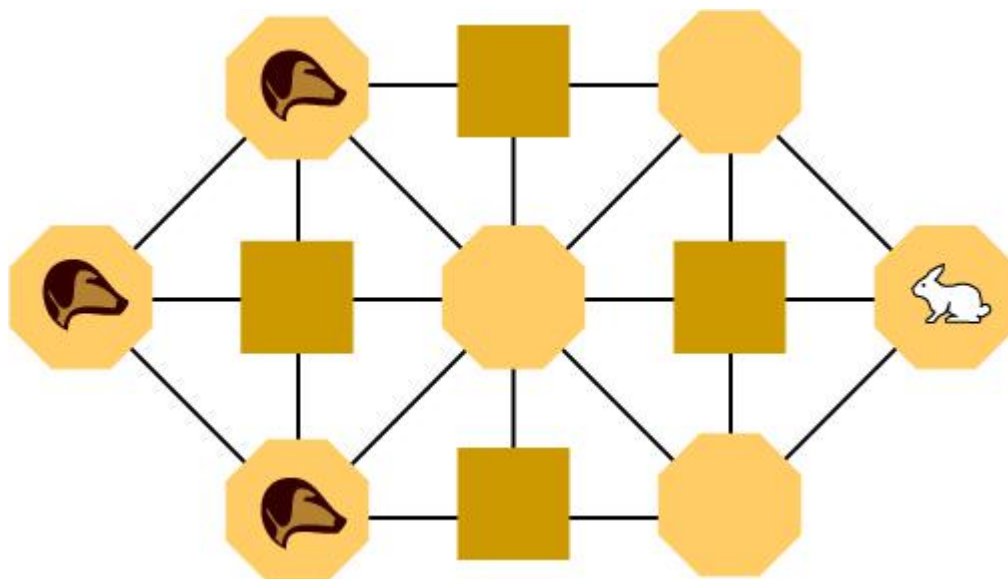
1. Ningshunlei and Chen qianqian completed the task of demand analysis together
2. Ningshunlei completed the overall analysis in the specific demand analysis, the tasks of hounds&hare and game development members and the specific task completion date as well as the specific assignment, initialization, main loop control module, etc
3. Ningshunlei and Chen qianqian jointly completed the parts of player movement, disk surface analysis, opponent movement, winner and loser judgment in the specific demand analysis
4. Chen qianqian completed the task of the functional module diagram of the specific functional description and part of the functional description diagram
5. Ningshun lei and Chen qianqian completed the detailed system design flow chart together, and the contents of the flow chart were explained
6. Ningshunlei and Chen qianqian jointly completed the content of specific program test results
7. Ning shunlei and Chen qianqian jointly completed the initialization program task in the source code of the specific hounds&hare game
8. Ning shunlei and Chen qianqian can jointly complete the procedures related to player movement in the specific source code
9. Ningshun lei, Chen qianqian complete the game source code disk, mobile type of related programming tasks together
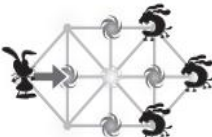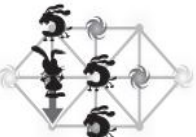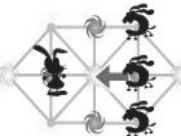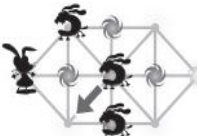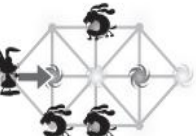10. LANGUAGE:Python3
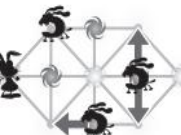

UPPER BUOUND = 1108800
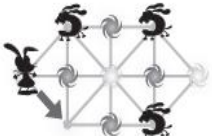
POSITION = 2100

Strategy

Analysis :

you also need to use common sense:
    never make a move that will
    put you in jeopardy of losing. If you find yourself
    in a bad spot, back up and practice the moves
    you made that brought you to that position.

Strategy Moves for the Hare

The Best Start Move

This Move Stays On Pattern

If you can't make a move that stays on the winning pattern, move so the Hounds can't move onto this pattern themselves and get back on pattern your next move. Here are two examples.

Strategy Moves for the Hounds

These Moves Keep Hounds On Pattern

Any of these moves will win, but move the bottom hound to win quickest.

Both of these moves stay on pattern… but you will lose if you move the bottom hound. Use your common sense!
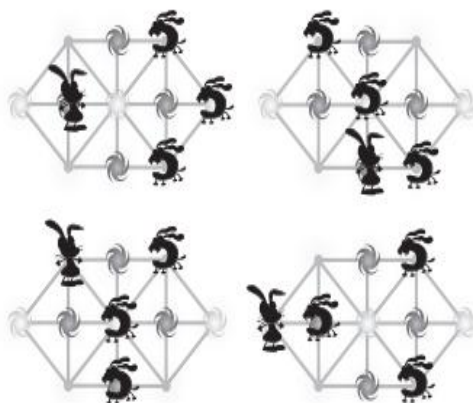
If you follow this pattern throughout the game, you will most likely win. This strategy works for both the Hare and the Hounds

How to get our "hounds and hare" code:

https://github.com/Ningibu/CGT

How to install；

You just need to download our Python3 code and run it you'll see the game