Fanorona

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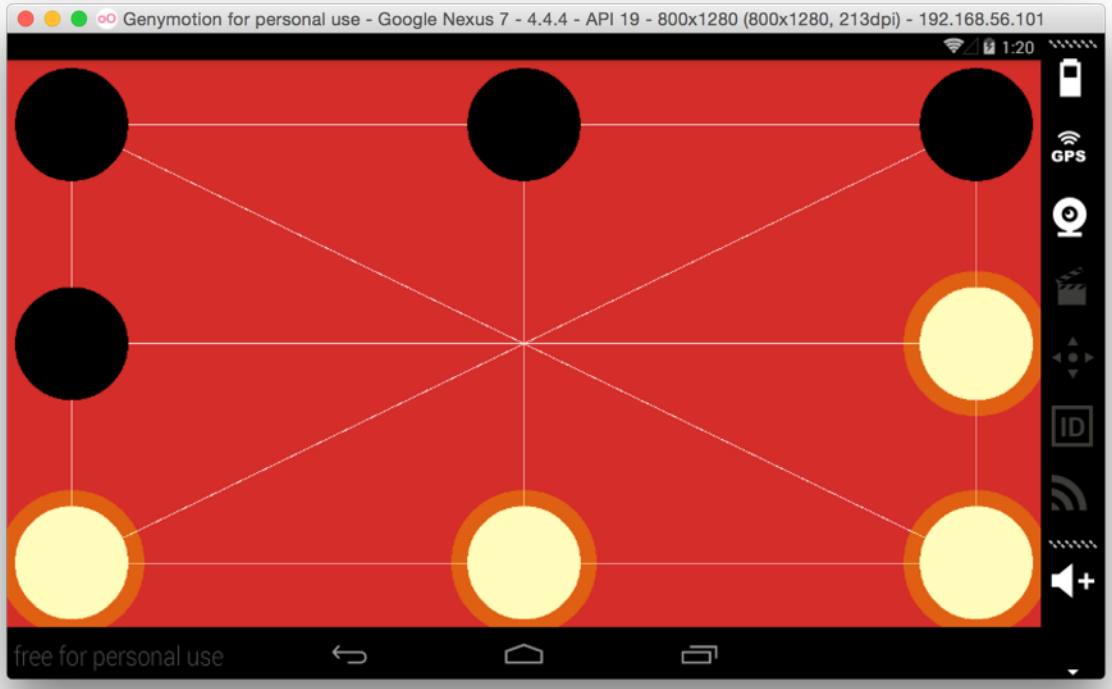
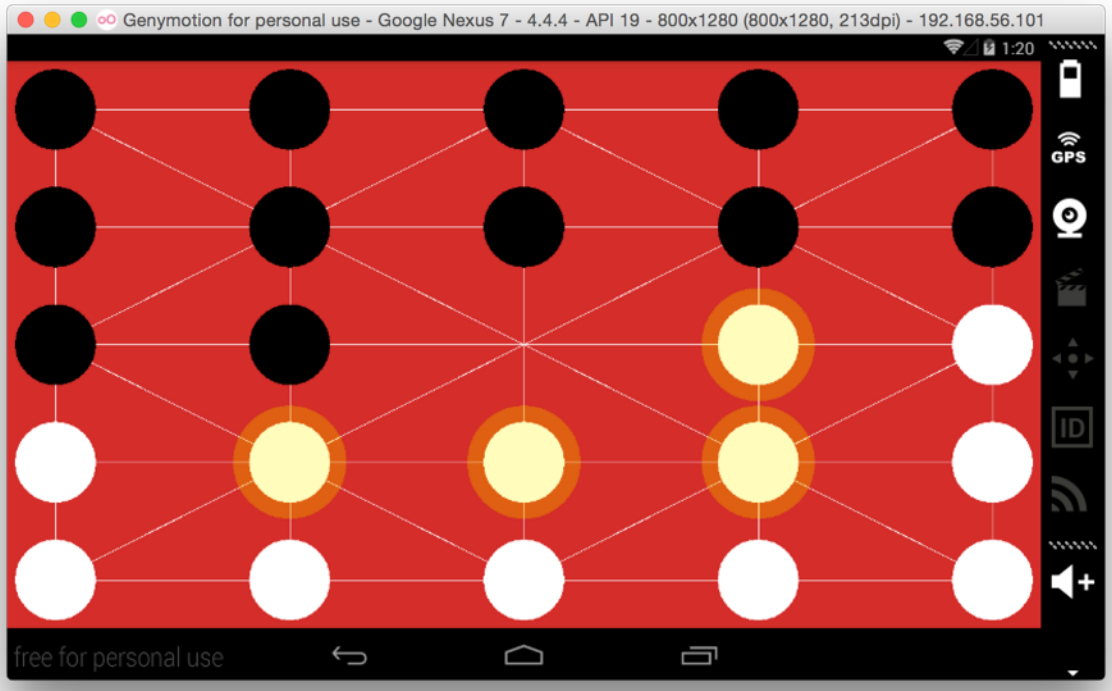
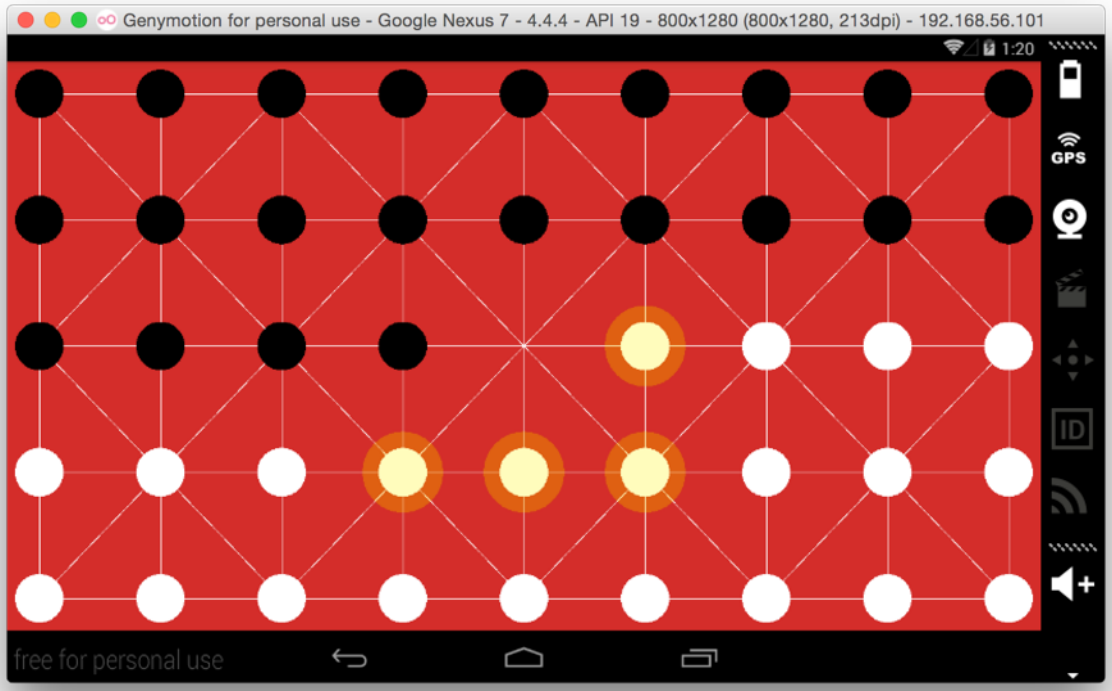
- The programming language: Java 1.6 + Android 5.0
  The install method: http://developer.android.com/sdk/index.html
- Project description:
  - I implement the 3*3, 5*5 and 5*9 board for fanorona game



5*5 board



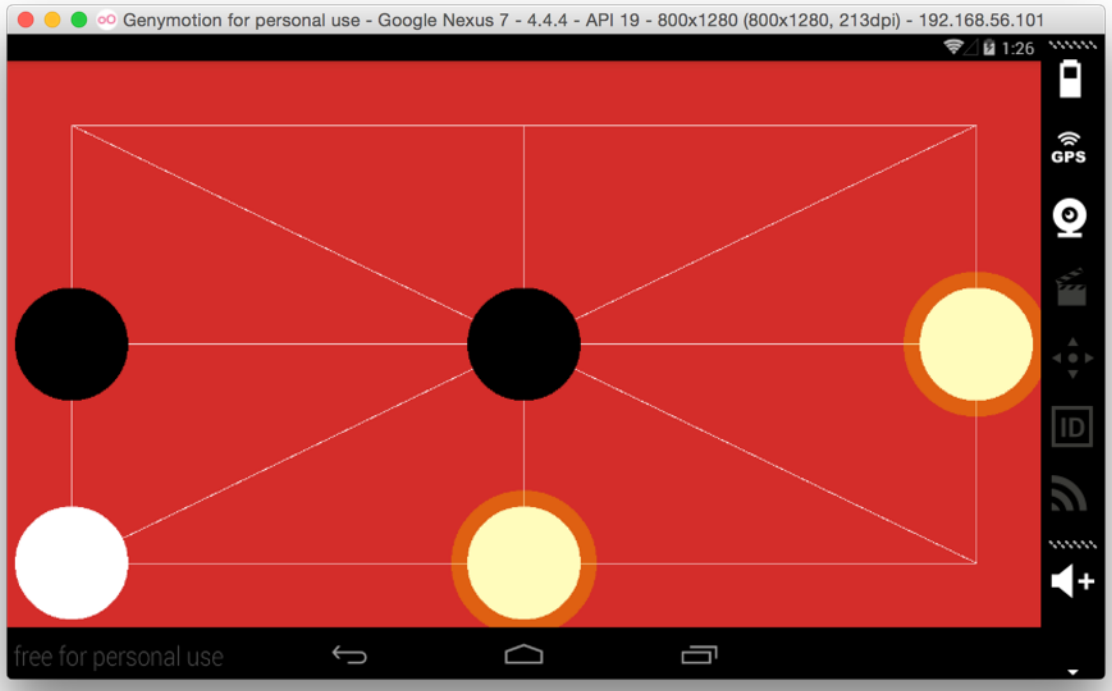
5*9 board:



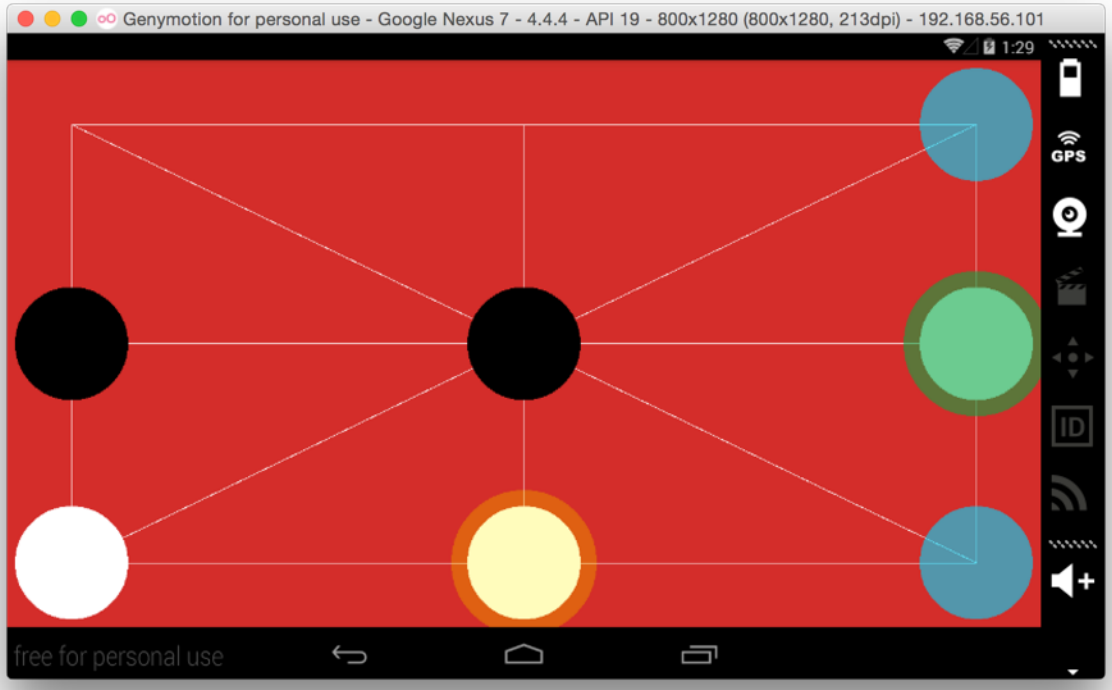
- I implement the piece color choose and difficult choose function

After the computer move, the algorithm information will be shown

The board will show the candidate pieces for users:



After select piece, it will show the possible move position:



It will also show winner information:

- Evaluation function:

I select the opposite number of opponent pieces as the value of evaluation function. For example, there are 4 white pieces and 6 black pieces. The computer take black pieces. The result of evaluation function called by max-value function will be -4. The result of evaluation function called by min-value function will be -6.
For 3*3, there are 4 pieces. The maximum value of alpha-bata function is 0, the minimum value of alpha-bata function will be -4;
For 5*5, there are 12 pieces. The maximum value of alpha-bata function is 0, the minimum value of alpha-bata function will be -12;
For 5*9, there are 22 pieces. The maximum value of alpha-bata function is 0, the minimum value of alpha-bata function will be -22;

- Cutoff function:

The cutoff function is base on time duration. If the calculate time is more than the duration time, the calculate will be stop. The duration time is set according the levels of difficulty.

- Levels of difficulty:

The user will choose the level of difficulty ,1, 2, 3. 1 is easy mode. 2 is normal mode. 3 is hard mode. The mode is more easy, the time of computer calculation will be shorter. I set the cutoff time as 3 seconds if the user chooses mode 1, 6 seconds if the user chooses mode 2 and 10 seconds if the user chooses mode 3.

- Draw define:

If the user and computer can not capture others in each successive two steps, it is draw. For example, the user move piece but not capture the computer's piece. Then the computer move piece without capturing the user's piece. This is first step. Then the user move piece but not capture the computer's piece. Then the computer move piece without capturing the user's piece. It will be draw.