

a)

Programming language used: iOS Swift (beta)

In order to run the program, you need an Apple computer (or a virtual machine with OSX) and Xcode.

b)

The cut-off occurs when the AI takes 10 seconds or longer to generate a game tree. When the cut-off happens, then the evaluation function is applied. For the evaluation function I used the difference of white and black stones, weighted by the number of the opposite players stones left on the board. Since this value could easily be over 1 or under -1, I used 999 and -999 for goal states, since they should be weighted much higher than “cut-off states”.

For level 1 the AI is calculating the next step randomly.

For level 2 the cut-off function with 10 seconds is applied.

For level 3 no cut-off function is applied and the AI tries to generate a whole game tree every time...
(this takes very long and not every time there's a finite solution, I guess)

c)

The program counts how many moves have been done by the two players. If there has been more than 40 moves and the game is still not finished, then it is a draw.