

AI Game Assignment

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About the game

1. Two players take turns in placing coins* of either color. The objective is to get as many coins of your color as possible.
2. When you place a coin* in such a way that two of your coins* sandwich one or more of the opponent's coins along a line (horizontal, vertical, or diagonal), then the sandwiched coins change to your color (a switch happens). You must move in such a way that at least one switch happens.
3. If you have a move you cannot pass.
4. If you don't have a move, you pass by returning (-1, -1) as your move.

*Note *: coins of a color is represented by a number in print board function BLUE = 1 and Red =2*

What you should do

1. Implement an algorithm to return a valid move (row, col).
2. Your algorithm should be **aware of time**. It should return a valid move before the time limit 'T'. Else you will be losing the game.
3. You lose if you return an invalid move. If you don't have a move, you should return (-1, -1) else the move will be considered as invalid.

Who wins ?

1. The player who has more number of coins at the end of the game.
2. Score = 2 for win
 - i. 1 for draw
 - ii. 0 for lose

points = number of coins of that player

3. In case of an invalid move or exceeding the time limit the player will get 0 for

both score and points.

4. The output is written to file “results”
Player one score:
Player one points:
Player two score:
Player two points:

Grading (Tournament)

There will be a tournament where each group plays against every other group. Your score and points will be taken into account for grading the assignment

Note: Exact marking scheme is yet to be decided.

Rules for writing the code

1. Code should be in C++.
2. There should be only 1 file with 1 class.
file name : g_(group_no).cpp (no other name will be allowed)
ex : g_1.cpp
class name : G_(group_no) (no other name is allowed)
ex: G_1
3. No header files please
4. Your code will not be evaluated if it does not follow the above naming conventions. A sample file g_1.cpp is included for your reference.
5. There should be a public function
6. void run(int board[ROW_SIZE][COL_SIZE], int , int , struct move *)
7. No global variables or functions are allowed. whatever you write should be inside your class (G_x).
8. Seg. faulting codes or incomplete codes or codes with compile errors will **not** be accepted. Inform me if you have such a problem.

How to compile and run?

```
> g++ -pthread main.cpp
```

Include your cpp file in game.cpp. No header files or other cpp files. Check the results in file results

> ./a.out

Submission

Only one cpp file. Name of the file should be g_'x'.cpp where 'x' is your group number.

Deadline

will be announced in the class.

Doubts

Its better if we discuss all doubts in the AI course group(link available in the course web page). Don't make any assumptions. Feel free to ask doubts.

Base code

Base files: game.h; game.cpp; main.cpp

Sample file: g_1.cpp

output: results

documents: ai_game_rules

Best Of Luck