

# AI4Games 2021

## Exercise 4a Code Keeper

4 points  
Deadline: 06.12

Finally, it is time for our small challenge. Your task is to write the best agent for the Code Keeper game. Code Keeper is a single-player roguelike, where the player tries to escape a dungeon and maximize the score gained.

There are two versions of the game available: solo optimization<sup>1</sup>, and four-player multi<sup>2</sup>. The multiplayer version does not have any interactions between players, and each match ranking is just based on the individually obtained score.

In this task, there is no predefined algorithm you have to follow. The approach depends on your experience, imagination, and time constraints. Some essential steps, like remembering already visited parts of the maze, implementing some pathfinding, and how to use each weapon, are obvious. On top of that, you can put some action-priority-based if-then-else structure, heuristic-based action evaluation, simulation-based approach, or anything else that suits you.

This week is devoted to making a working and reasonable agent. Thus, you are required to prove (send the proper screenshots) that your bot can pass specific maps achieving the required minimal score.

Next week, you will have to submit your bot on the multiplayer version leaderboard, and your points will depend on your position in the ranking. The estimated max points for the Exercise 4b list is 4 plus 3 bonus points for achieving top positions.

### Task 1 [1p.]

Score at least **11250** points on the `seed=0` test.

### Task 2 [1p.]

Score **10600** points on the `seed=3` test.

### Task 3 [1p.]

Score at least **10050** points on the `seed=8` test.

### Task 4 [1p.]

Score at least **10800** points on the `seed=12` test.

### Late days [-1p.]

You can still send your solution one week after the main deadline, but the number of received points will be reduced by 1.

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<sup>1</sup>Optimization: <https://www.codingame.com/ide/demo/905517c3890c62a2f5b23552125d3be4ee0680>

<sup>2</sup>Multi: <https://www.codingame.com/ide/demo/9054468dbdc217e1a217ceae8c2832cb322116>