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Lab 6 - Exercise E : can't figure out what I got wrong

question posted 2 years ago by rcostandi

Hi!

All good, except the very last exercise of Lab 6, where I am not able to find my mistake.

Here's what I get:

```
Order: [(7, 4), (4, 4), (1, 4), (0, 1), (2, 3), (8, 7), (6, 5)]
Best difference: 2
Quickest route: 30

After correctly adding your code, and executing the cells you should see
Order: [(0, 1), (8, 7), (2, 3), (4, 4), (1, 4), (7, 4), (6, 5)]
Best difference: 1
Quickest route: 30
```

All the preceding parts of Lab 6 run OK and grade 1/1, except this one. I tried hard to find my mistake, in this part and in the previous parts, but no result.

I am nearly willing to drop it, but the fact that this last exercise is the only grade missing to get 100% kind of tickles me. If you have encountered the same difficulty, and have solved it, I would gladly accept a hint!

Other than that, I really enjoyed this MOOC. Interesting, well designed and well presented. My only little drawback was that I found the range difficulty of some of the exercises very large, with one or two lab exercises which I found hard, and some others too easy. But all in all I enjoyed the quizzes and labs.

Thank you Vincent, Patrick, Nicolas, and the whole team.

Related to: Week 6 / Computing Winning Positions in a Game
This post is visible to everyone.

Moira
2 years ago - marked as answer 2 years ago by rcostandi

Hi

It looks as though your code might be generating a list of moves that's more favourable to the opposing player.

When you calculate the difference in the scores, you should subtract player2 from player1.
i.e. `newplayer1_score - newplayer2_score`

Are you by any chance subtracting player1 from player2?
If so, could you try swapping them around?

I'm afraid I'm struggling to think of anything else that might produce the result you're seeing.

Hi Moira, and thank you for your suggestion.

I just checked, this is how I calculate it: `score_difference = player1_score - player2_score`. It seems that my simulation estimates that player1 will have 2 points more than player2 after 30 steps (which should correspond to 4.5 vs 2.5). The animation in the Extra step gives a tie (3.5 points for both) after 44 steps, so clearly I have a problem (or at least one). Maybe in turn_greedy or turn_target. I'll re-check all my code.

posted 2 years ago by rcostandi

Hi

If I ask my `full_combinatorial_game` function to tell me the score difference and number of rounds for the result that you're seeing i.e.

```
[(7, 4), (4, 4), (1, 4), (0, 1), (2, 3), (8, 7), (6, 5)]
```

then it gives me a score difference of 0 (a tie) and 44 rounds.
Which coresponds to what you're seeing in the game animation.

But, clearly, your `full_combinatorial_game` is coming up with a different answer.
So, it looks to me as though, either
- there's a problem with your `simulate_game` function
- or there's a problem with the input that's being passed to `simulate_game`

Maybe you could try running the following test:

```
test_targets = [(0, 1), (8, 7), (2, 3), (4, 4), (1, 4), (7, 4), (6, 5)]
testturn_target = create_turn_target_function(test_targets)

testplayer1_location,testplayer2_location,testplayer1_score,testplayer2_score,testpieces_of_cheese,
 = simulate_game(maze_graph,width,height,player1_location,player2_location,
    player1_score,player2_score,pieces_of_cheese,
    testturn_target,turn_greedy,time_allowed)
print("Targets:", test_targets)
print("At the end of the game:")
print("Player 1 location and score: {}, {}".format(testplayer1_location,testplayer1_score))
print("Player 2 location and score: {}, {}".format(testplayer2_location,testplayer2_score))
print("Cheeses left {}".format(len(testpieces_of_cheese)))
print("Number of rounds {}".format(test_rounds))
```

You should see the following output:

```
Targets: [(0, 1), (8, 7), (2, 3), (4, 4), (1, 4), (7, 4), (6, 5)]
At the end of the game:
Player 1 location and score: (7, 4), 4.0
Player 2 location and score: (4, 3), 3.0
Cheeses left 0
Number of rounds 30
```

And you could also run the same test with

```
test_targets = [(7, 4), (4, 4), (1, 4), (0, 1), (2, 3), (8, 7), (6, 5)]
```

which should give you

```
Targets: [(7, 4), (4, 4), (1, 4), (0, 1), (2, 3), (8, 7), (6, 5)]
At the end of the game:
Player 1 location and score: (2, 3), 3.5
Player 2 location and score: (2, 3), 3.5
Cheeses left 0
Number of rounds 44
```

If you get a different answer, then the problem is somewhere in `simulate_game` itself.
Otherwise, I think the problem is with the input to `simulate_game.`

That's about as close as I can get, I'm afraid.
Other than perhaps just to mention that, from your post, you seem to be re-using the global variable names `player1_score` and `player2_score`.
If it looks as though there's a problem with the input to `simulate_game`, then it might be worth checking that there isn't a "clash" anywhere with the global variables defined in the very first code cell of the lab.

posted 2 years ago by Moira

Thank you so much Moira!

First and second tests pass.

You are right on the spot: I was using the same variable names inside full_combinatorial_game for the positions and scores than the arguments and globals.

I created 4 local variables and initialized the local positions from the arguments to full_combinatorial_game, and the local scores to zero, and then BINGO! Everything works!

Thanks to you, Moira, I get the perfect score. I really appreciate your time and effort for walking me to the solution!

posted 2 years ago by rcostandi

You're very welcome - I'm so pleased you managed to get it all working correctly :-)

Congratulations on finishing the course with a perfect score!

posted 2 years ago by Moira

:-)

posted 2 years ago by rcostandi

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