edX

hw3_games_q7_suboptimal_strategies
Question 7: Suboptimal Strategies

3/3 points (ungraded)
Player MAX and player MIN are playing a zero-sum game with a finite number of possible moves. MAX calculates the minimax value of the root to be M. You may assume that at every turn, each player has at least 2 possible actions. You may also assume that a different sequence of moves will always lead to a different score (i.e., no two terminal nodes have the same score). Which of the following statements are true?

- ☑ Assume MIN is playing sub-optimally at every turn, but MAX does not know this. The outcome of the game could be larger than M (i.e. better for MAX).

- ☐ Assume MIN is playing sub-optimally at every turn. If MAX plays according to the minimax strategy, the outcome of the game could be less than M.

✔

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✔ Correct (3/3 points)

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problem

3/3 points (ungraded)
For this question, assume that MIN is playing randomly (with a uniform distribution) at every turn, and MAX knows this.

- ☐ There exists a policy for MAX such that MAX can guarantee a better outcome than M.

☑ There exists a policy for MAX such that MAX's expected outcome is better than M.

☐ To maximize his or her expected outcome, MAX should play according to the minimax strategy (i.e. the strategy that assumes MIN is playing optimally).

✔

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✔ Correct (3/3 points)

problem

3/3 points (ungraded)

☑ Assume MIN is playing sub-optimally at every turn. MAX following the minimax policy will guarantee a better outcome than M.

☑ Assume MIN is playing sub-optimally at every turn, and MAX knows exactly how MIN will play. There exists a policy for MAX to guarantee a better outcome than M.

✔

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