Final Project: Tic Tac Toe game

Tic-tac-toe, or Xs and Os is a game for two players who take turns marking the spaces in a three-by-three grid with X or O. The player who succeeds in placing three of their marks in a horizontal, vertical, or diagonal row is the winner. Tic-tac-toe is played on a three-by-three grid by two players, who alternately place the marks X and O in one of the nine spaces in the grid.

Example: In the following example, the first player (X) wins the game in seven steps:

Implement Tic-tac-toe in python against computer (based on simple artificial intelligence) according to the following rules:

- Determine randomly whether the computer or the player goes first.
- Create and print a 3x3 board and number the elements from 0 to 8:

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0|1|2
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3|4|5
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6|7|8
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- Ask player to select unoccupied positions for the next move. Make sure the selected board position is available.
- The computer should use the following AI to choose its next move:
  - ❖ First, check if there exists a single move such that the computer can win the game. Otherwise, go to the second step.
  - ❖ Second, check if there exists a single move for the player that will cause the computer to lose the game. If there is, the computer should move there to block the player. Otherwise, go to the third step.
  - ❖ Third, check if any of the corner spaces (spaces 0, 2, 6, or 8) are free. If no corner space is free, then go to the fourth step.
  - ❖ Fourth, check if the center is free. If so, move there. If it isn't, then go to the fifth step.
  - ❖ Fifth, move on any of the side pieces (spaces 1, 3, 5, or 7).
- Continue till a player wins or the game ends in tie.
- Depending on the outcome, announce the winner or the tie.