

Lab: Tic Tac Toe

In the game of tic tac toe, players alternate placing Xs and Os on a board until one player gets three of their symbol in a row, column, or diagonal. We will store the tic tac toe board as a 2D list of *integers*, where a zero means a space on the board is empty, a 1 means it is filled with an X, and a -1 means it is filled with a O. This will make it easier later on to detect wins.

Fill in the code for tic-tac-toe in this order, assuming a board is stored as a 3 by 3 grid of numbers.

1. `def print_board(board):`

Prints a 3 by 3 tic tac toe board using X's and O's. (don't return anything)

Remember that the board has 0/1/-1 in each square, so use nested loops & if statements to print the correct pieces. Print a dash for an empty square to make it easier to see.

2. Fill in the part of `main()` that **places a piece on the board** and the part that **switches the player**. Look for the comments in the loop to guide you for this part.

You should be able to play the game now, though it will never end!

3. Fill in the `add_row`, `add_column`, `add_diagonal`, and `add_diagonal2` functions.

4. Fill in the `x_wins` and `o_wins` functions.

5. Fill in the `board_full` function.

6. Now you should be able to write a test for the loop that will stop the loop when someone has won, of the board is full.

7. Fill in the last part of the program, which prints the winner or if it was a tie.

8. Play the game! Test lots of different situations. Fix bugs.