Design a game : Tic-Tac-Toe

305171 Computer Programming
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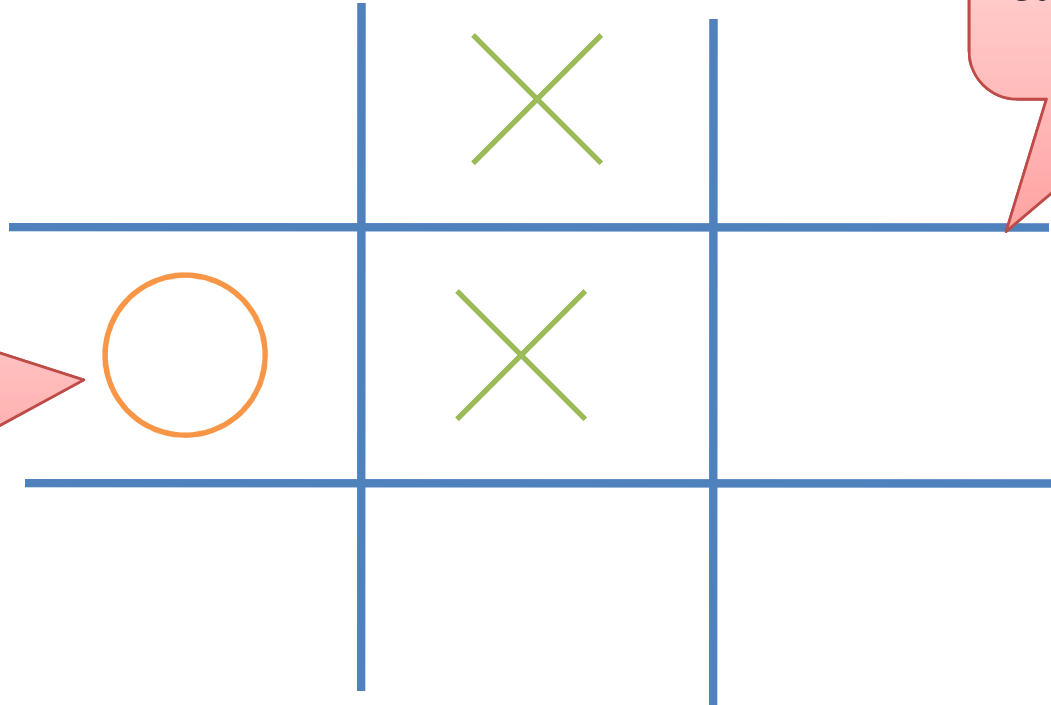
UI Design
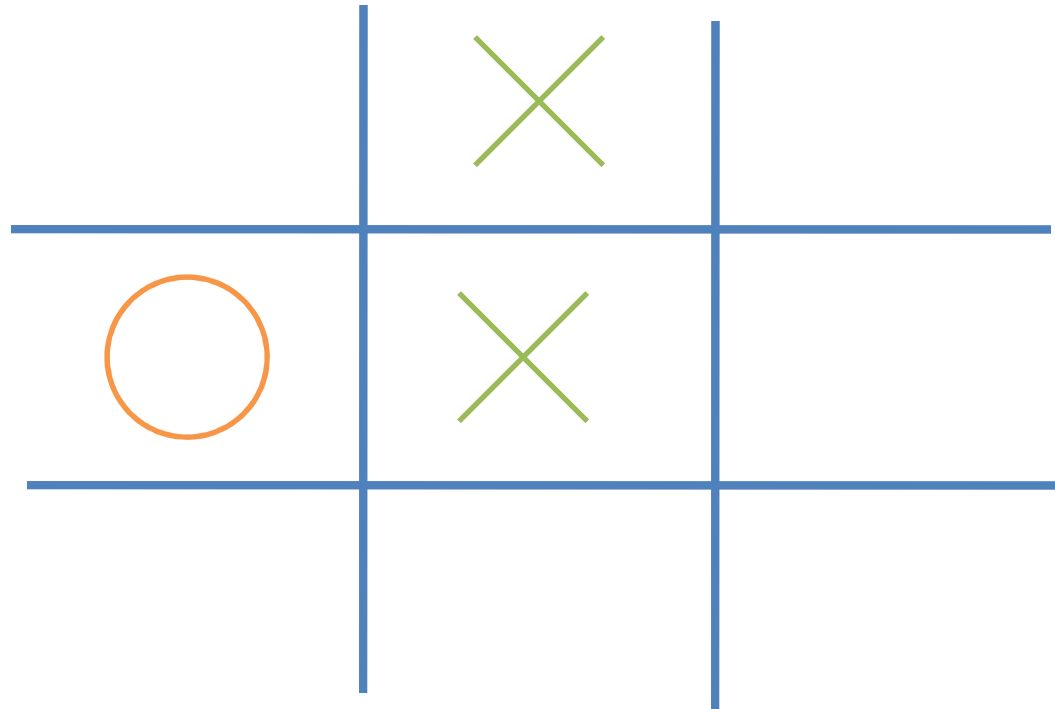
Functions in Two players

Name: printScreen
Input: char arrays 3*3
Output: void (print to terminal)

Name: nextTurn
Input: char turn
Output: char
Logic:

     if current turn = o
     then return turn = x
     else return turn = 0

Name: getPosition
Input: char arrays 3*3
Output: void (print to terminal)
Logic:
If array at this row,col is not empty
Then get input from keyboard again

Name: checkEndGame
Input: char arrays 3*3, char turn
Output: _Bool
Logic:

     if checkWin = true (someone wins)
     then return true (end game)
     else if all cells in arrays is not empty
then return true (end game)
else (not end game) return false

Name: checkWin
Input: char arrays 3*3 , char turn
Output: _Bool
Logic:
     if in one row they all are turn(x/o)
     then return true (turn(x/o) wins)
     else return false
     Must check 8 rows

Functions in Comp vs Human

Name: if 1 , 1 position is empty
Input: char arrays 3*3
Output: position
Logic:
The middle position is the best position
Then if it is still empty, we choose it.

Name: if We Can Win
Input: char arrays 3*3
Output: position
Logic:
    if there are 2 O connected in a row
    then choose the next position in
that row
 Must check 8 rows

Name: O is going to win
Input: char arrays 3*3
Output: position
Logic:
 if there are 2 X connected in a row
     then choose the empty position in
that row to block them
        Must check 8 rows

Name: if No one is going to win
Input: char arrays 3*3
Output: char
Logic:
        if there is 1 O in a row
        then choose the position next
to it to increase our chance to win
Must check 8 rows