import random

def drawB(b):

print(' | |')

print(' ' + b[7] + ' | ' + b[8] + ' | ' + b[9])

print(' | |')

print('-----------')

print(' | |')

print(' ' + b[4] + ' | ' + b[5] + ' | ' + b[6])

print(' | |')

print('-----------')

print(' | |')

print(' ' + b[1] + ' | ' + b[2] + ' | ' + b[3])

print(' | |')

def inputPlayerLetter():

letter = ''

while not (letter == 'X' or letter == 'O'):

print('Do you want to be X or O?')

letter = input().upper()

if letter == 'X':

return ['X', 'O']

else:

return ['O', 'X']

def whoGoesFirst():

if random.randint(0, 1) == 0:

return 'computer'

else:

return 'player'

def playAgain():

print('Play again? (y or n)')

return input().lower().startswith('y')

def makeMove(b, letter, move):

b[move] = letter

def isWinner(bo, le):

return ((bo[7] == le and bo[8] == le and bo[9] == le) or # across the top

(bo[4] == le and bo[5] == le and bo[6] == le) or # across the middle

(bo[1] == le and bo[2] == le and bo[3] == le) or # across the bottom

(bo[7] == le and bo[4] == le and bo[1] == le) or # down the left side

(bo[8] == le and bo[5] == le and bo[2] == le) or # down the middle

(bo[9] == le and bo[6] == le and bo[3] == le) or # down the right side

(bo[7] == le and bo[5] == le and bo[3] == le) or # diagonal

(bo[9] == le and bo[5] == le and bo[1] == le)) # diagonal

def getBCopy(b):

dupeB = []

for i in b:

dupeB.append(i)

return dupeB

def isSpaceFree(b, move):

return b[move] == ' '

def getPlayerMove(b):

move = ' '

while move not in '1 2 3 4 5 6 7 8 9'.split() or not isSpaceFree(b, int(move)):

print('next move? (1-9)')

move = input()

return int(move)

def chooseRandomMoveFromList(b, movesList):

possibleMoves = []

for i in movesList:

if isSpaceFree(b, i):

possibleMoves.append(i)

if len(possibleMoves) != 0:

return random.choice(possibleMoves)

else:

return None

def getComputerMove(b, computerLetter):

if computerLetter == 'X':

playerLetter = 'O'

else:

playerLetter = 'X'

for i in range(1, 10):

copy = getBCopy(b)

if isSpaceFree(copy, i):

makeMove(copy, computerLetter, i)

if isWinner(copy, computerLetter):

return i

for i in range(1, 10):

copy = getBCopy(b)

if isSpaceFree(copy, i):

makeMove(copy, playerLetter, i)

if isWinner(copy, playerLetter):

return i

move = chooseRandomMoveFromList(b, [1, 3, 7, 9])

if move != None:

return move

if isSpaceFree(b, 5):

return 5

return chooseRandomMoveFromList(b, [2, 4, 6, 8])

def isBFull(b):

for i in range(1, 10):

if isSpaceFree(b, i):

return False

return True

while True:

theB = [' '] \* 10

playerLetter, computerLetter = inputPlayerLetter()

turn = whoGoesFirst()

print('The ' + turn + ' will go first

')

gameIsPlaying = True

while gameIsPlaying:

if turn == 'player':

# Player's turn.

drawB(theB)

move = getPlayerMove(theB)

makeMove(theB, playerLetter, move)

if isWinner(theB, playerLetter):

drawB(theB)

print('CONGRATULATIONS! You won the game!')

gameIsPlaying = False

else:

if isBFull(theB):

drawB(theB)

print('The game is a tie!')

break

else:

turn = 'computer'

else:

move = getComputerMove(theB, computerLetter)

makeMove(theB, computerLetter, move)

if isWinner(theB, computerLetter):

drawB(theB)

print('You lose.')

gameIsPlaying = False

else:

if isBFull(theB):

drawB(theB)

print('Tie!')

break

else:

turn = 'player'

if not playAgain():

break