24-09-2024

Lab 1 :

Q) WAP for tick tack toe game

Python code :

def check(board, user) :

  for i in range(3) :

    if (board[i][0] == user and board[i][1] == user and board[i][2] == user) :

      return True

    if (board[0][i] == user and board[1][i] == user and board[2][i] == user) :

      return True

  if (board[0][0] == user and board[1][1] == user and board[2][2] == user) :

    return True

  if (board[0][2] == user and board[1][1] == user and board[2][0] == user) :

    return True

  return False

def full(board) :

  for i in range(3) :

    for j in range(3) :

      if (board[i][j] == '-') :

        return False

  return True

# Tic tak toe game

import numpy as np

user1 = input("Enter name of user1: ")

user2 = input("Enter name of user2: ")

print(user1 + " vs " + user2)

board = np.array((['-', '-', '-'], ['-', '-', '-'], ['-', '-', '-']))

flag = 0

while (True) :

  print("Board : ")

  print(board)

  if (full(board)) :

    print("Game draw")

    break

  if flag == 0 :

    print(f"{user1}'s turn")

  else :

    print(f"{user2}'s turn")

  row = int(input("Enter row number: "))

  col = int(input("Enter column number: "))

  if flag == 0 :

    if (board[row][col] == '-') :

      board[row][col] = 'X'

    else :

      print("Invalid move")

  else :

    if (board[row][col] == '-') :

      board[row][col] = 'O'

    else :

      print("Invalid move")

  if flag == 0 :

    result = check(board, 'X')

    if (result) :

      print(f"{user1} won the game")

      print(board)

      break

    else :

      flag = 1

  else :

    result = check(board, 'O')

    if (result) :

      print(f"{user2} won the game")

      print(board)

      break

    else :

        flag = 0

Output :

Enter name of user1: s

Enter name of user2: d

s vs d

Board :

[['-' '-' '-']

['-' '-' '-']

['-' '-' '-']]

s's turn

Enter row number: 0

Enter column number: 0

Board :

[['X' '-' '-']

['-' '-' '-']

['-' '-' '-']]

d's turn

Enter row number: 0

Enter column number: 2

Board :

[['X' '-' 'O']

['-' '-' '-']

['-' '-' '-']]

s's turn

Enter row number: 2

Enter column number: 0

Board :

[['X' '-' 'O']

['-' '-' '-']

['X' '-' '-']]

d's turn

Enter row number: 1

Enter column number: 0

Board :

[['X' '-' 'O']

['O' '-' '-']

['X' '-' '-']]

s's turn

Enter row number: 1

Enter column number: 1

Board :

[['X' '-' 'O']

['O' 'X' '-']

['X' '-' '-']]

d's turn

Enter row number: 2

Enter column number: 2

Board :

[['X' '-' 'O']

['O' 'X' '-']

['X' '-' 'O']]

s's turn

Enter row number: 1

Enter column number: 2

Board :

[['X' '-' 'O']

['O' 'X' 'X']

['X' '-' 'O']]

d's turn

Enter row number: 0

Enter column number: 1

Board :

[['X' 'O' 'O']

['O' 'X' 'X']

['X' '-' 'O']]

s's turn

Enter row number: 2

Enter column number: 1

Board :

[['X' 'O' 'O']

['O' 'X' 'X']

['X' 'X' 'O']]

Game draw