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IBM18CS092
B-3
13/11/2020.

# AI Lab Test-1

```
def checkIfAvailable(pos):
    if(board[pos] == " "):
        return 1
    else:
        return 0

def CheckWin(player):
    for x in winningPosition:
        if board[x[0]] = board[x[1]] and board[x[1]] == board[x[2]]
                                    and board[x[0]] != " ";

            print (player + "won")

            return 0

    for i in board:
        if i == " ";
            return 1

    print ("Draw Match")


def algoWin(player):
    n = -1
    for x in WinningPosition:
        if (board[x[0]] == player and board[x[1]] == player) and
                                    checkIfAvailable(x[2]) == 1:

            n = x[2]
            break
```



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```
elif (board[x[1]] == player and board[x[2]] == player) and
                                    checkIfAvailable(x[0]) == 1:
    n = x[0]
    break
elif (board[x[0]] == player and board[x[2]] == player) and
                                    checkIfAvailable(x[1]) == 1:
    n = x[1]
    break
return n.

def stopPlayer(player):
n = -1
    for x in winningPosition:
        if (board[x[0]] == player and board[x[1]] == player) and
                                    checkIfAvailable(x[2]) == 1:
            n = x[2]
            break
        elif (board[x[1]] == player and board[x[2]] == player) and
                                    checkIfAvailable(x[0]) == 1:
            n = x[0]
            break
        elif (board[x[0]] == player and board[x[2]] == player) and
                                    checkIfAvailable(x[1]) == 1:
            n = x[1]
            break
    return n.
```



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```
def algoTryWin(player):
    n=-1
    for x in WinningPosition:
        if board[x[0]]==player and checkIfAvailable(x[2]==1) and
                                   checkIfAvailable(x[1]==1):
            if checkIfAvailable(x[2]==1):
                n = x[2]
                break.
            elif checkIfAvailable(x[1]==1);
                n = x[1]
                break
        elif board[x[1]]==player and checkIfAvailable(x[0]==1) and
                                     checkIfAvailable(x[2]==1):
            if checkIfAvailable(x[0]==1):
                n = x[0]
                break
            elif checkIfAvailable(x[2]==1):
                n = x[2]
                break.
        elif board[x[2]]==player and checkIfAvailable(x[0]==1) and
                                     checkIfAvailable(x[1]==1):
            if checkIfAvailable(x[0]==1):
                n = x[0]
                break
            elif checkIfAvailable(x[1]==1):
                n = x[1]
                break
    return n.
```



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```
def randomPos():
    while(1):
        n = random.randint(0,8)
        if checkIfAvailable(n) == 1;
            return n.

def algoPlay(x, y):
    n = algoWin(x)
    if n == -1
        n = stopPlayer(y)
    if n == -1
        n = algoTryWin(x)
    if n == -1:
        n = randomPos()
    print("Algorithm inserted at ", end=" ")
    print n
    board[n] = x

def play():
    boardDisplay()    // displays the board.
    flag = 1
    while(flag):
        algoPlay("X", "O")
        display boardDisplay()
```



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```
if checkWin("Agent 1")==1:
    print("Agent 2 Playing")
    algoPlay("O","X")
    displayboard()
    if checkWin("Agent 2")==O:
        flag = 0
    else
        flag =O
```



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