// 1) Given an array having 0,1 as input. We need to write a function that sorts the array in ascending order without using inbuilt sort function

// Input Array -> [0,1,1,0,1,0,0,1]

// Output -> [0,0,0,0,1,1,1,1]

function sortArray(a)

{

    let count0=0;

    let count1=0;

    result=[];

    for(let i=0;i<a.length;i++)

{

    if(a[i]==0)

    count0++;

    else

    count1++;

}

for(let i=0;i<count0;i++)

result[i]=0;

for(let i=count0;i<count0+count1;i++)

result[i]=1;

return result;

}

let arr=[0,1,1,0,1,0,0,1];

console.log(sortArray(arr));

// 2) Given 2D Array. A Magic square is a 2D array having n rows and n columns which will be having all elements as distinct and the sum of row, column or diagonal is equal to the same number.

// You need to check whether that array is a magic square or not.

function isMagicSquare(mat)

{

    let N = mat.length;

    var sumd1 = 0,sumd2=0;

    for (let i = 0; i < N; i++)

    {

       sumd1 = sumd1 + mat[i][i];

        sumd2 = sumd2 + mat[i][N-1-i];

    }

     if(sumd1!=sumd2)

        return false;

    for (let i = 0; i < N; i++) {

        let colSum = 0;

        let rowSum = 0;

        for (let j = 0; j < N; j++)

        {

            rowSum += mat[i][j];

            colSum += mat[j][i];

        }

        if (rowSum != colSum || colSum != sumd1)

            return false;

    }

    return true;

}

let mat = [[ 2, 7, 6 ],

           [ 9, 5, 1 ],

           [ 4, 3, 8 ]];

console.log(isMagicSquare(mat));