##print out matrix clockwise

##pay attention to this:

##1. Clearly define the range of start and end points in range function

##2. Define the boundary for validity check

<https://www.acwing.com/problem/content/description/39/>

<https://blog.csdn.net/yiyiwudian/article/details/46707875>

<https://zhuanlan.zhihu.com/p/38716707>

class Solution(object):

def printMatrix(self, matrix):

"""

:type matrix: List[List[int]]

:rtype: List[int]

"""

def printM(matrix,row,col,start):

for ele in matrix[start][start:col-start]:

ret.append(ele)

if start<=col-start-1:

for i in range(start+1,row-start):

ret.append(matrix[i][col-start-1])

if start<row-start-1 and start<col-start-1:

for i in range(col-start-2,start-1,-1):

ret.append(matrix[row-start-1][i])

if start<col-start-1 and start<row-start-2:

for i in range(row-start-2,start,-1):

ret.append(matrix[i][start])

if not matrix:

return []

row,col = len(matrix),len(matrix[0])

start = 0

ret = []

while row>2\*start and col>2\*start:

printM(matrix,row,col,start)

start+=1

return ret