#

r=int(input())

c=int(input())

arr=[]

for i in range(r):

L=list(map(int,input().split()))

arr.append(L)

result=[]

for i in range(c):

if i%2==0:

for j in range(r):

result.append(arr[j][i])

else:

for j in range(r-1,-1,-1):

result.append(arr[j][i])

print(' '.join(map(str,result)))

#

n=int(input())

m=int(input())

a=[]

for i in range(n):

L=list(map(int,input().split()))

a.append(L)

for i in range(n):

left=0

right=i

while left<m and right>=0:

print(a[left][right],end=" ")

left+=1

right-=1

print()

for i in range(1,n):

left=i

right=m-1

while left<m and right>=0:

print(a[left][right],end=" ")

left+=1

right-=1

print()