import rhinoscriptsyntax as rs

import random as rnd

#input matrix

num = int(input("input x for matrix x\*x"))

#side number of the circle

side = rnd.randint(5,10)

print('side number :',side)

#create pt list for matrix

ptList1 = []

for i in range(num):

    for j in range(num):

        pt = (i,j,0)

        ptList1.append(pt)

#create a circle inside the matrix

radius = i/2

centriod = (radius,radius,0)

circle = rs.AddCircle(centriod,radius)

rs.HideObject(circle)

#pt list2 :get points from the circle as attractors

ptList2 = rs.DivideCurve(circle, side, False, True)

#get the distance between pt and attractor

distanceList = []

for i in range(len(ptList1)):

    attractor = ptList2[i%side]

    distance = rs.Distance(ptList1[i],attractor)

    distanceList.append(distance)

#regenerate the distanc10e

denominator = max(distanceList)

distanceList = [i/denominator/2 for i in distanceList]

#draw circles

for i in range(len(ptList1)):

    rs.AddCircle(ptList1[i],distanceList[i])