Hostile brothers in a rectangle

Solve the following optimization problem

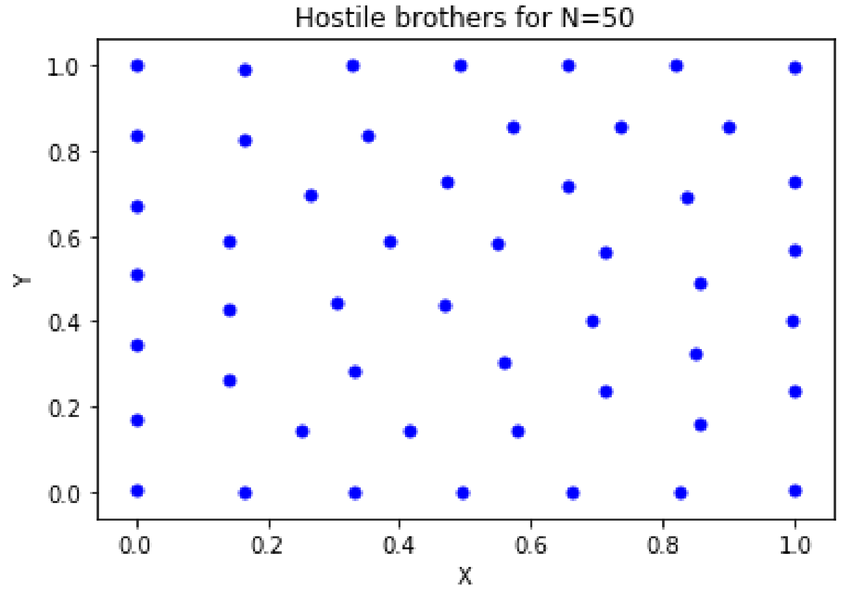
Find the locations of N brothers in a rectangle in a way that the minimum distance between each pair of brothers is maximum

$$\max_{x_i, y_i} \quad r$$

$$\left(x_i - x_j\right)^2 + \left(y_i - y_j\right)^2 \geq r^2$$

$$0 \leq x_i \leq 1$$

$$0 \leq y_i \leq 1$$



Ex11