Data Clustering with Maximin Algorithm Tutorial Exercise

Employ the MAXIMIN algorithm in order to determine the number of classes corresponding to the samples drawn in Figure 1, using the following optimization criteria:

$$\text{a) } \Delta_{max} < \frac{||\mathbf{z}_1 - \mathbf{z}_2||_2}{2}.$$
$$\text{b) } \Delta_{max} < \frac{||\mathbf{z}_1 - \mathbf{z}_2||_2}{3}.$$

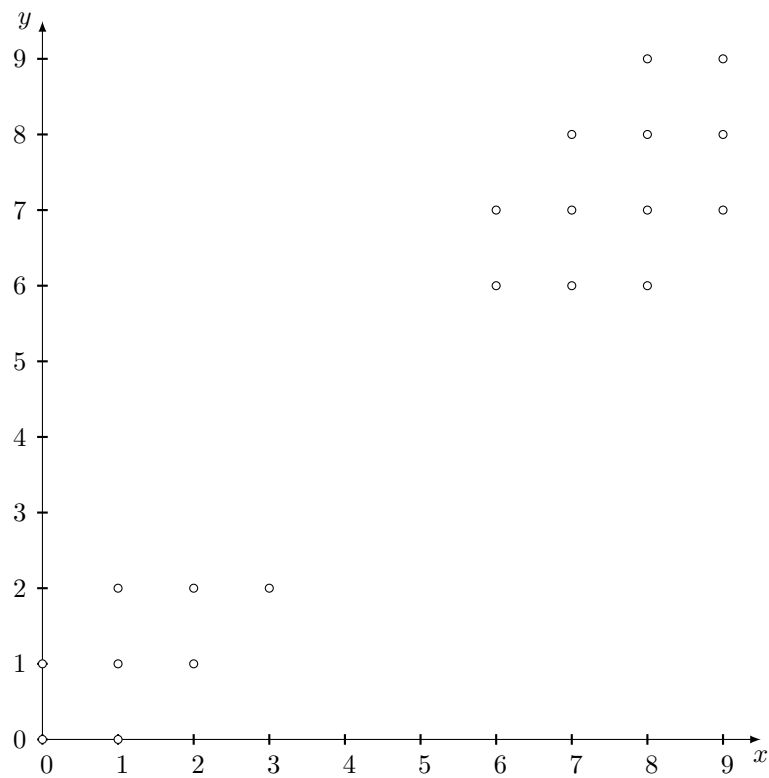where $\mathbf{z}_1$ and $\mathbf{z}_2$ are the centers of the first and second class, respectively.

Figure 1: Data points