

Practice Problems and Brief Note on Identification Trees

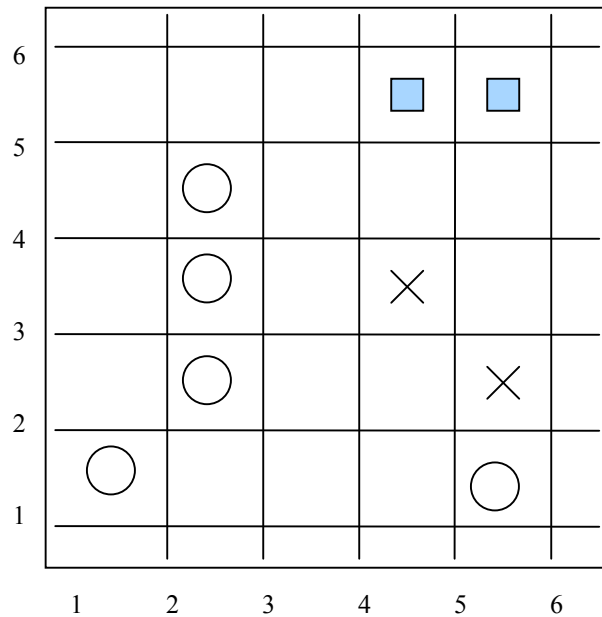
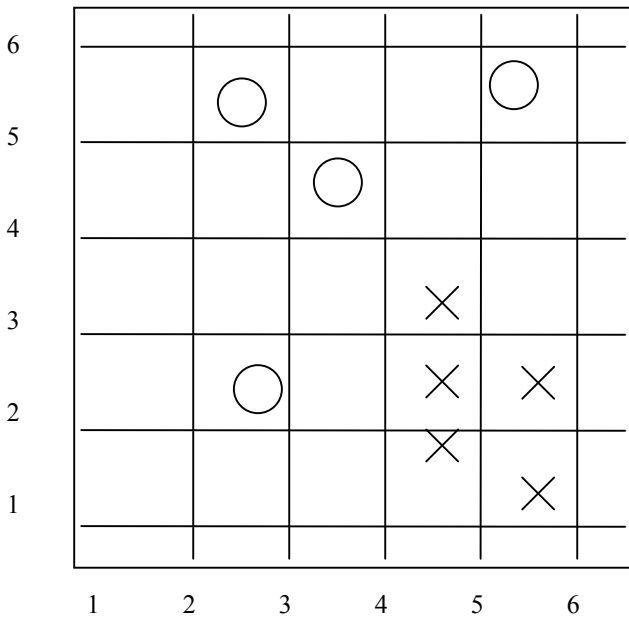
By Kimberle Koile
(Original date: before Fall 2004)

Use the entropy graphs on page 2 to determine the best splits for building an ID tree for the each of the following data sets, and draw the trees.

Recall that the best split for a set of data minimizes the average disorder:

$$\text{Average disorder} = \sum_b \left(\frac{n_b}{n_t} \right) \times \left(\sum_c - \frac{n_{bc}}{n_b} \log_2 \left(\frac{n_{bc}}{n_b} \right) \right)$$

n_b is the total number of samples in a region b
 n_t is the total number of samples in all regions
 n_{bc} is the total of samples in region b of class c



Entropy: $E = -a \log_2 a - b \log_2 b - c \log_2 c \dots$

