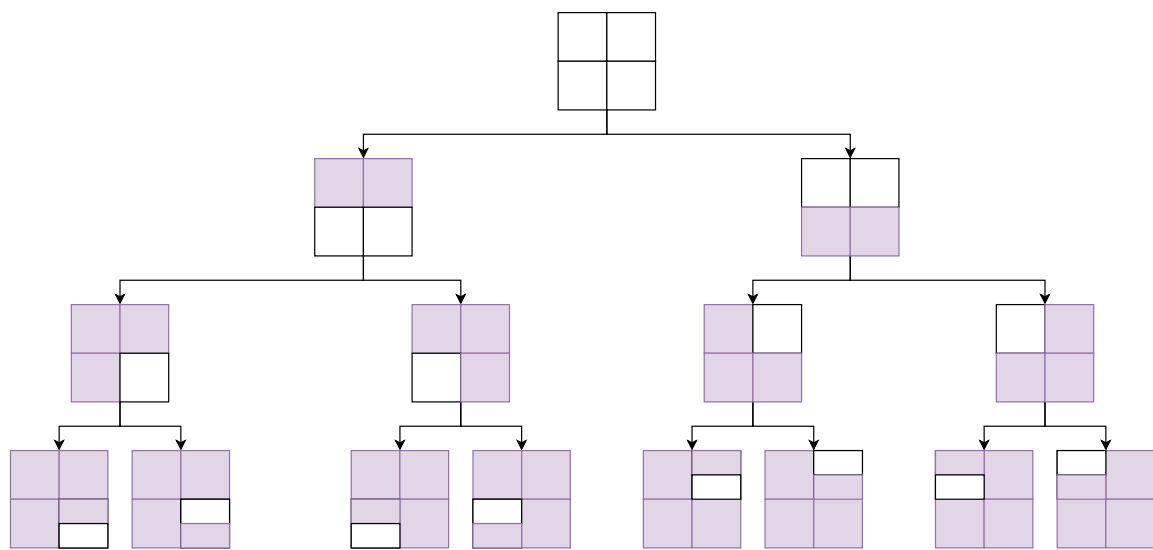


(a) Partition Tree



(b) Owen value calculation

$$\text{owen} \left( \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{white} & \text{white} \\ \hline \end{array} \right) = \frac{\left( \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{white} & \text{white} \\ \hline \end{array} - \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{shaded} & \text{shaded} \\ \hline \end{array} \right)}{2} + \frac{\left( \begin{array}{|c|c|} \hline \text{white} & \text{white} \\ \hline \text{white} & \text{white} \\ \hline \end{array} - \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{shaded} & \text{shaded} \\ \hline \end{array} \right)}{2}$$

$$\begin{aligned} \text{owen} \left( \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{shaded} & \text{white} \\ \hline \end{array} \right) &= \frac{\left( \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{shaded} & \text{white} \\ \hline \end{array} - \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{shaded} & \text{shaded} \\ \hline \end{array} \right)}{4} + \frac{\left( \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{white} & \text{shaded} \\ \hline \end{array} - \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{white} & \text{white} \\ \hline \end{array} \right)}{4} \\ &+ \frac{\left( \begin{array}{|c|c|} \hline \text{white} & \text{white} \\ \hline \text{shaded} & \text{white} \\ \hline \end{array} - \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{shaded} & \text{shaded} \\ \hline \end{array} \right)}{4} + \frac{\left( \begin{array}{|c|c|} \hline \text{white} & \text{white} \\ \hline \text{white} & \text{shaded} \\ \hline \end{array} - \begin{array}{|c|c|} \hline \text{shaded} & \text{shaded} \\ \hline \text{white} & \text{white} \\ \hline \end{array} \right)}{4} \end{aligned}$$