

Outlook

Sunny

Overcast

$E(\text{Sunny}) = -\frac{2}{5} \log_2\left(\frac{2}{5}\right) - \frac{3}{5} \log_2\left(\frac{3}{5}\right) = 0.971$

$E(\text{Sunny} | \text{Temp.}) = \left(\frac{2}{5} \cdot 0\right) + \left(\frac{2}{5} \cdot 1\right) + \left(\frac{1}{5} \cdot 0\right) = 0.4$

$= 0.971 - 0.4 = 0.571$

$E(\text{Sunny} | \text{Humidity}) = \left(\frac{3}{5} \cdot 0\right) + \left(\frac{2}{5} \cdot 0\right) = 0$

$= 0.971 - 0 = 0.971 \leftarrow \text{Best}$

$E(\text{Sunny} | \text{Wind}) = \left(\frac{2}{5} \cdot 0\right) + \left(\frac{3}{5} \cdot 0.918\right) = 0.551$

$= 0.971 - 0.551 = 0.420$

Rain

$E(\text{Rain}) = -\frac{3}{5} \log_2\left(\frac{3}{5}\right) - \left(\frac{2}{5}\right) \log_2\left(\frac{2}{5}\right) = 0.971$

$E(\text{Rain} | \text{Temp.}) = \left(\frac{3}{5} \cdot 0.918\right) + \left(\frac{2}{5} \cdot 1\right) = 0.951$

$= 0.971 - 0.951 = 0.020$

$E(\text{Rain} | \text{Humidity}) = \left(\frac{2}{5} \cdot 1\right) + \left(\frac{3}{5} \cdot 0.918\right) = 0.951$

$= 0.971 - 0.951 = 0.020$

$E(\text{Rain} | \text{Wind}) = \left(\frac{3}{5} \cdot 0\right) + \left(\frac{2}{5} \cdot 0\right) = 0$

$= 0.971 - 0 = 0.971 \leftarrow \text{Best}$

