

1. On the first round, we must consider all the attribute choices. We thus have:

$$\begin{aligned} ENT(A, d) &= ENT(a, d) + ENT(\bar{a}, d) \\ &= Pr(a) \left[-Pr(d|a) \cdot \log_2(Pr(d|a)) - Pr(d|a) \cdot \log_2(Pr(d|a)) \right] \\ &\quad + Pr(\bar{a}) \left[-Pr(d|\bar{a}) \cdot \log_2(Pr(d|\bar{a})) - Pr(d|\bar{a}) \cdot \log_2(Pr(d|\bar{a})) \right] \end{aligned}$$

- 2.