$$H_i = -\sum_{k=1}^{n} P_{ik} \log_2 (P_{ik})$$

Decision Tree Entropy

witdth	height	type
1	4	A
2	3	A
3	1	A
7	6	C
6	8	C
9	9	C
11	12	D
12	15	D
15	13	D

ROOT
WIDTH ≤ 3

Y   N

3A   3C, 3D

$$-\left(\left(\frac{3}{3}\log_2\frac{3}{3}\right) + \left(\frac{0}{3}\log_2\frac{0}{3}\right) + \left(\frac{0}{3}\log_2\frac{0}{3}\right)\right)$$

$$\boxed{0}$$

$$-\left(\left(\frac{3}{6}\log_2\frac{3}{6}\right) + \left(\frac{3}{6}\log_2\frac{3}{6}\right) + \left(\frac{0}{6}\log_2\frac{0}{6}\right)\right)$$

$$\boxed{0.301}$$