Gini Index (Decision Tree)

$$Gini(t) = 1 - \sum_{j} \left[p(j|t) \right]^2 .$$

$p(j|t)$ is the relative frequency of class j at node t.

$$Gini_{split} = \sum_{i=1}^{k} \frac{n_i}{n} \left(Gini(i) \right)$$

$n_i = \#$ of records at child i

$n = \#$ of records. at node p.

Information Gain = Gini (parent) − $Gini_{split}$ (children)