Fadli Kurnia

Yes 8
No 9

$G(\text{Root}) = 1 - \left(\frac{3}{12}\right)^2 - \left(\frac{9}{12}\right)^2$
$= 1 - \left(\frac{1}{4}\right)^2 - \left(\frac{3}{4}\right)^2$
$= 1 - \frac{1}{16} - \frac{9}{16}$
$= 1 - \frac{10}{16} = \frac{6}{16} = 0,375$

A. Time
Short (7 data : Yes = 2 NO = 5
$G(\text{Short}) = 1 - \left(\frac{2}{7}\right)^2 - \left(\frac{5}{7}\right)^2$
$= 1 - \frac{4}{49} - \frac{25}{49} = 1 - \frac{29}{49} = \frac{20}{49} = 0.408$

Long (5 data) : Yes = 1, NO = 4
$G(\text{long}) = 1 - \left(\frac{1}{5}\right)^2 - \left(\frac{4}{5}\right)^2$
$= 1 - \frac{1}{25} - \frac{16}{25} = \frac{8}{25} = 0,32$
$G(\text{Time} = \frac{7}{12}(0.408) + \frac{5}{12}(0.32)$
$= 0.238 + 0.133 = 0.371$

Large (4 data) Yes : 1 NO. 3
$G(\text{Large}) = 1 - \left(\frac{1}{4}\right)^2 - \left(\frac{3}{4}\right)^2$
$= 1 - \frac{1}{16} - \frac{9}{16} = \frac{6}{16} = 0,375$

Small (8 data) Yes : 2 NO 6
$G(\text{Small}) = 1 - \left(\frac{2}{8}\right)^2 - \left(\frac{6}{8}\right)^2$
$= 1 - \frac{4}{64} - \frac{36}{64} = \frac{24}{64} = 0,375$

$G(\text{Package}) = \frac{4}{12}(0,375) + \frac{8}{12}(0.375)$
$= 0.125 + 0.25 = 0,375$

No. :

Frequency

$G(\text{High}) = 1 - \left(\frac{1}{5}\right) - \left(\frac{4}{8}\right)^2 = 0.32$

Medium (4 data) Yes = 2 NO = 2

$G(\text{Medium} = 1 - \left(\frac{2}{4}\right)^2 - \left(\frac{2}{4}\right)^2$

$= 1 - 0.25 - 0.25 = 0.5$

$G(\text{Frequency}) = \frac{5}{12}(0.32) + \frac{4}{12}(0.5) + \frac{3}{12}$

$= 0.133 + 0.167 + 0 = 0.300$

Priority

$G(\text{High}) = 1 - \left(\frac{2}{6}\right)^2 - \left(\frac{4}{6}\right)^2$

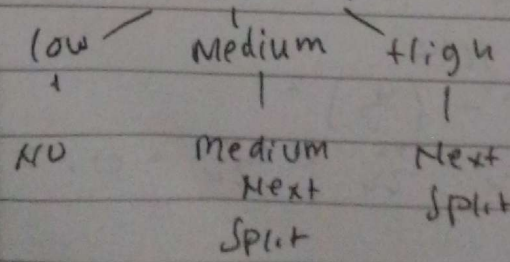
$= 1 - \frac{4}{36} - \frac{16}{36} = \frac{16}{36} = 0.444$

$G(\text{low}) = 1 - \left(\frac{1}{6}\right)^2 - \left(\frac{5}{6}\right)^2$

$= 1 - \frac{1}{36} - \frac{25}{36} = \frac{10}{36} = 0.278$

$G(\text{Priority}) = \frac{6}{12}(0.444) + \frac{6}{12}(0.278)$

$= 0.222 + 0.139 = 0.361$



No. :

Struktur Decision Tree:

ini memprediksi apakah akan terjadi problem (masalah)

If Frequency : Low THEN Problem ? : NO

Penjelasan : jika frekuensi pengirimnya low. tidak ada masalah yang terjadi (2 dari 2 kasus).

If Frequency : High THEN

IF Time : short THEN problem ? : NO

IF Time : long THEN

IF Package : small THEN problem ? : YES

IF Package size : large THEN problem ? : NO

- Nah ini jika frekuensinya high, keputusannya bergantung pd atribut nya Time (waktu) jika time adalah short. tdk ada masalahnya (3 dari 3 kasus). jika time adalah long, keputusan selanjutnya bergantung pada Package size (ukuran paket), ukuran small akan menghasilkan (yes) large (tdk)

IF Frequency : Medium THEN

IF Time : long THEN Problem ? : NO

IF Time : short THEN problem ? : NO

- jika F Medium. keputusannya bergantung pada si Time. jika Time long. tidak ada masalah (1 dari 1 kasus) jika time adalah short datanya tdk konsisten. simpul induk (Fr : Medium)

No. :

$$GINI = 1 - \sum_{i=1}^{n} P_i^2$$

$$Gini\ split = \frac{n_1}{n} Gini(S_1) + \frac{n_2}{n} Gini(S_2) + \dots$$