Datasets

CP	thalac	target	residual
3	150	1	0,5
3	190	1	0,5
0	96	0	-0.5
1	174	0	-0.5
1	202	1	0,5

$$\boxed{0.5,\ 0.5,\ -0.5,\ -0.5,\ 0.5}$$

$$\text{similarity} = \frac{0.5 + 0.5 - 0.5 - 0.5 + 0.5}{(0.5 \times (1 - 0.5)) \times 5}$$

$$= \frac{(0.5)^2}{0.25 \times 5} = \frac{0.25}{1.25}$$

$$\text{root similarity} = \cancel{0.25} \quad (= 0.2)$$

kemungkinan node
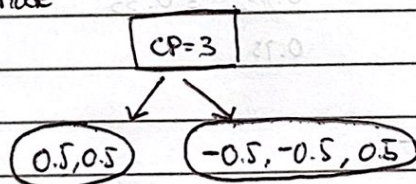
CP = 3

$$0.5, 0.5 \qquad -0.5, -0.5, 0.5$$

left S

$$= \frac{(0.5 + 0.5)^2}{(0.5 \times (1 - 0.5)) \times 2}$$

$$= \frac{1}{0.25 \times 2} = \frac{1}{0.5}$$

$$= 2$$

Right S $= \dfrac{(-0.5 - 0.5 + 0.5)^2}{(0.5 \times (1 - 0.5)) \times 3}$

$$= \frac{0.25}{\cancel{0.75}\ 0.75}$$

$$= 0.33$$

Gain = 2 + 0,33 - 0,2$\cancel{4}$

= $\cancel{2.08}$ 2.13

②

$$CP = 0$$

-0.5   0.5, 0.5, -0.5, 0.5

Left S =   Right S =

$$\frac{(-0.5)^2}{(0.5 \times (1-0.5))} = \frac{0.25}{0.25}$$ $$\frac{(0.5+0.5-0.5+0.5)^2}{(0.5\times(1-0.5))\times4}$$

$$= 1$$ $$= \frac{1}{1} = 1$$

Gain $= 1 + 1 - 0.2$

$$= 1.8$$

③

$$CP = 1$$

-0.5, 0.5   0.5, 0.5, -0.5

Left S = 0   Right S :

Gain $= 0 + 0.75 - 0.2$ $= \frac{(0.5+0.5-0.5)^2}{(0.5\times(1-0.5))\times3}$

$$= 0.55$$ $$= \frac{0.25}{0.75} = 0.33$$

96   150   174   190   202
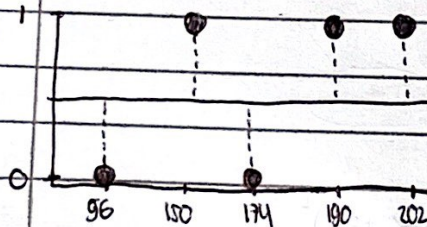
④

$$thalac < 123$$

-0.5   0.5, -0.5, 0.5, 0.5

Left S = $\frac{(-0.5)^2}{(0.5\times(1-0.5))}$ Right S = $\frac{(0.5-0.5+0.5+0.5)^2}{(0.5\times(1-0.5))\times4}$ Gain $= 1+1-0.2$

$$= \frac{0.125}{0.25}$$ $$= \frac{1}{1}$$ $$= 1.8$$

$$= 1$$ $$= 1$$

⑤

$$thalac < 163$$

$(-0.5, 0.5)$ $(-0.5, 0.5, 0.5)$

$left S = 0$ $Right S = \dfrac{(-0.5 + 0.5 + 0.5)^2}{(0.5 \times (1 - 0.5)) \times 3}$ $Gain = 0 + 0.33 - 0.2$

$$= 0.13$$

$$= \dfrac{0.25}{0.75}$$

$$= 0.33$$

⑥

$$Thalac < 182$$

$(-0.5, 0.5, -0.5)$ $(0.5, 0.5)$

$left S = \dfrac{(-0.5 + 0.5 - 0.5)^2}{(0.5 \times (1 - 0.5)) \times 3}$ $Right S = \dfrac{(0.5 + 0.5)^2}{(0.5 \times (1 - 0.5)) \times 2}$ $Gain = 0.33 + 2 - 0.5$

$$= 2.13$$

$$= \dfrac{0.25}{0.75}$$ $$= \dfrac{1}{0.5}$$

$$= 0.33$$ $$= 2$$

⑦

$$Thalac < 196$$

$(-0.5, 0.5, -0.5, 0.5)$ (0.5)

$left = 0$ $Right S$ $Gain = 0 + 1 - 0.2$

$$= \dfrac{(0.5)^2}{(0.5 \times (1 - 0.5))}$$ $$= 0.8$$

$$= \dfrac{0.25}{0.25}$$

$$= 1$$

level selanjutnya (kedalaman berikutnya)

①

$$CP=0$$

(-0.5) $(-0.5, 0.5)$ Gain: $0.1 + 0 - 0.33$

left $S = (-0.5)^2$ Right $S = 0$ $= \cancel{1.00}\ 0.67$

$(0.5 \times (1-0.5))$

$= \dfrac{0.25}{0.25} = 1$

②

$$CP=1$$

$(-0.5, 0.5)$ (-0.5)

left $S = (-0.5+0.5)^2$ Right $S = (-0.5)^2$ Gain: $0+1-0.33$

$(0.5 \times (1-0.5)) \times 2$ $(0.5 \times (1-0.5))$ $= 0.67$

$= 0$ $= \dfrac{0.25}{0.15}$

$= 1$

③

$$Thalac < 135$$

(-0.5) $(-0.5, 0.5)$

left $S = (-0.5)^2$ Right $S = (-0.5+0.5)^2$ Gain $= 0.1 + 0 - 0.33$

$(0.5 \times (1-0.5))$ $(0.5 \times (1-0.5)) \times 2$ $= 0.67$

$= \dfrac{0.25}{0.25}$ $= 0$

$= 1$

④

$$Thalar < 180$$ left $S = (-0.5-0.5)^2$ Right $S = (0.5)^2$ Gain $= 2+1-0.3$

$(-0.5, -0.5)$ (0.5) $(0.5 \times (1-0.5)) \times 2$ $(0.5 \times (1-0.5))$ $= 2.67$

$= \dfrac{1}{0.5}$ $= \dfrac{0.25}{0.25}$

$= 2$ $= 1$

level selanjutnya (kedalaman selanjutnya)

①
$$CP = 0$$

-0.5 -0.5

Left : $(-0.5)^2$ Right S : $(-0.5)^2$ Gain : $1 + 1 - 2$

$\dfrac{0.5 \times (1 - 0.5)}{}$ $(0.5 \times (1 - 0.5))$ $= 0$

$= \dfrac{0.25}{0.25}$ $= \dfrac{0.25}{0.25}$

$= 1$ $= 1$

②
$$CP = 1$$

-0.5 -0.5

Left S : $(-0.5)^2$ Right S = 1   Gain = 0

$(0.5 \times (1 - 0.5))$

$= 1$

③
Thalac < 135

-0.5 -0.5

Left S = 1   Right S = 1   Gain = 0

Pohon yg dibuat

CP = 3

Thalac < 170   Thalac < 108

0.5 0.5 CP = 0 0.5 2
 2   2

                     -0.5 -0.5
                      -2   -2

Menghitung Output Value

1.
$$\frac{0.5}{(0.5 \times (1-0.5))}$$

$$= \frac{0.5}{0.25} = 2$$

3) $\frac{0.5}{(0.5 \times (1-0.5))} = 2$

4) $\frac{-0.5}{(0.5 \times (1-0.5))}$

$$= \frac{-0.5}{0.25} = -2$$

2.
$$\frac{0.5}{(0.5 \times (1-0.5))}$$

$$= \frac{0.5}{0.25} = 2$$

CP	Thalac	Target	new_Probability	residual
3	150	1	0.65	0.35
3	190	1	0.65	0.35
0	96	0	0.35	-0.35
1	174	0	0.35	-0.35
1	202	1	0.65	0.35

1. $0 + (0.3 \times 2) = 0.6$

Probability $= \frac{e^{0.6}}{1 + e^{0.6}} = \frac{1.822}{1 + 1.822}$

$$= 0.65$$

4) $0 + (0.3 \times -2) = -0.6$

$$= \frac{e^{-0.6}}{1 + e^{-0.6}}$$

$$= 0.35$$

2. $0 + (0.3 \times 2) = 0.6$

$$= \frac{e^{0.6}}{1 + e^{0.6}} = 0.65$$

5.) $0 + (0.3 \times 2) = 0.6$

$$= \frac{e^{0.6}}{1 + e^{0.6}}$$

$$= 0.65$$

3. $0 + (0.3 \times -2) = -0.6$

$$= \frac{e^{-0.6}}{1 + e^{-0.6}}$$

$$= \frac{0.549}{1.549} \quad -0.35$$

Buat Pohon baru berdasarkan residual baru

~~Root~~ $\boxed{0.35, 0.35, -0.35, -0.35, 0.35}$

Root Similarity : $\dfrac{(0.35 + 0.35 - 0.35 - 0.35 + 0.35)^2}{(0.65 \times (1 - 0.65)) \times 3 + (0.35 \times (1 - 0.35)) \times 2}$

$$= \dfrac{(0.35)^2}{0.68 + 0.45}$$

$$= \dfrac{0.1225}{1.13} = 0.1$$