Tugas Decision Tree

Nama = Lathif Ramadhan
NPM = 5231811022
Prodi/Kelas = Sains Data / 23A

Dataset

No	BB	TB	Gender	Roster Ideal
1	Ringan	Tinggi	Pria	Tidak Ideal
2	Sedang	Sedang	Wanita	Ideal
3	Ringan	Tinggi	Pria	Tidak Ideal
4	Ringan	Tinggi	Pria	Tidak Ideal
5	Sedang	Tinggi	Wanita	Ideal
6	Sedang	Pendek	Pria	Ideal
7	Ringan	Tinggi	Wanita	Tidak Ideal
8	Berat	Tinggi	Pria	Ideal
9	Ringan	Sedang	Pria	Ideal
10	Berat	Pendek	Wanita	Tidak Ideal

* Penentuan Level 0 / Root Node

- BB → Ringan = $1 - (P(\text{ideal}))^2 - (P(\text{tdk ideal}))^2$
  $= 1 - (1/5)^2 - (4/5)^2 = 0,32$
  - Sedang = $1 - (3/3)^2 - (0/3)^2 = 0$
  - Berat = $1 - (1/2)^2 - (1/2)^2 = 0,5$

Weighted average → $(\frac{5}{10})^{\text{Ringan}} \times 0,32 + (3/10)^{\text{Sedang}} \times 0 + (2/10) \times 0,5 = 0,26$

- TB → Pendek = $1 - (P(\text{ideal}))^2 - (P(\text{tdk ideal}))^2$
  $= 1 - (1/2)^2 - (1/2)^2 = 0,5$
  - Sedang = $1 - (2/2)^2 - (0/2)^2 = 0$
  - Tinggi = $1 - (2/6)^2 - (4/6)^2 = 0,44$

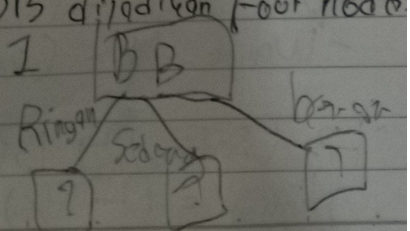
WA → $(2/10)^{\text{Pendek}} \times 0,5 + 2/10 \times 0^{\text{Sedang}} + 6/10 \times 0,44^{\text{tinggi}} = 0,36$

- Gender → Pria = $1 - (P(\text{ideal}))^2 - (P(\text{tdk ideal}))^2$
  $= 1 - (3/6)^2 - (3/6)^2 = 0,5$
  - Wanita = $1 - (2/4)^2 - (2/4)^2 = 0,5$

WA → $6/10 \times 0,5 + 4/10 \times 0,5 = 0,5$

Karena nilai WA terkecil 0,26 (BB), maka BB dijadikan root node

LV 1



* Penentuan Level 1

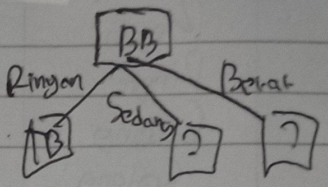
- BB (ringan) → TB
  - tinggi = $1 - (P(\text{ideal}))^2 - (P(\text{tdk ideal}))^2$
  $= 1 - (0/4)^2 - (4/4)^2$
  $= 0$

Tinggi

- Sedang = $1 - (1/1)^2 - (0/1)^2 = 0$ WA = $9/10 \times 0 + 1/10 \times 0 + \frac{0}{10} \times 1$
- Pendek = $1 - (0/0)^2 - (0/0)^2 = 1$ $= 0$

a) BB (Ringan) → Gender

- Pria = $1 - (P(ideal))^2 - (P(tdk\ ideal))^2$
  $= 1 - (1/9)^2 - (3/9)^2 = 0,375$ WA = $9/10 \cdot 0,375 + 1/10 \cdot 0$
- Wanita = $1 - (0/1)^2 - (1/1)^2 = 0$ $= 0,5$

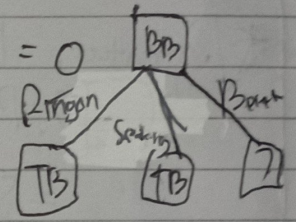


c) BB (Sedang) → TB

- Tinggi = $1 - (P(ideal))^2 - (P(tdk\ ideal))^2$
  $= 1 - (1/1)^2 - (0/1)^2 = 0$ W.A = $\frac{1}{10} \times 0 + \frac{1}{10} \times 0 + \frac{1}{10} \times 0$
- Sedang = $1 - (1/1)^2 - (0/1)^2 = 0$ $= 0$
- Pendek = $1 - (1/1)^2 - (0/1)^2 = 0$

d) BB (Sedang) → Gender

- Pria = $1 - (1/1)^2 - (0/1)^2 = 0$ W.A. = $\frac{1}{10} \cdot 0 + \frac{2}{10} \times 0 = 0$
- Wanita = $1 - (2/2)^2 - (0/2)^2 = 0$

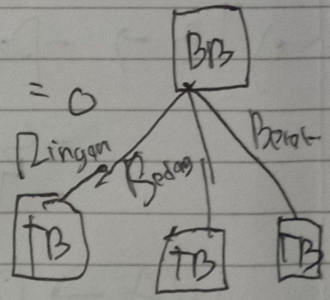


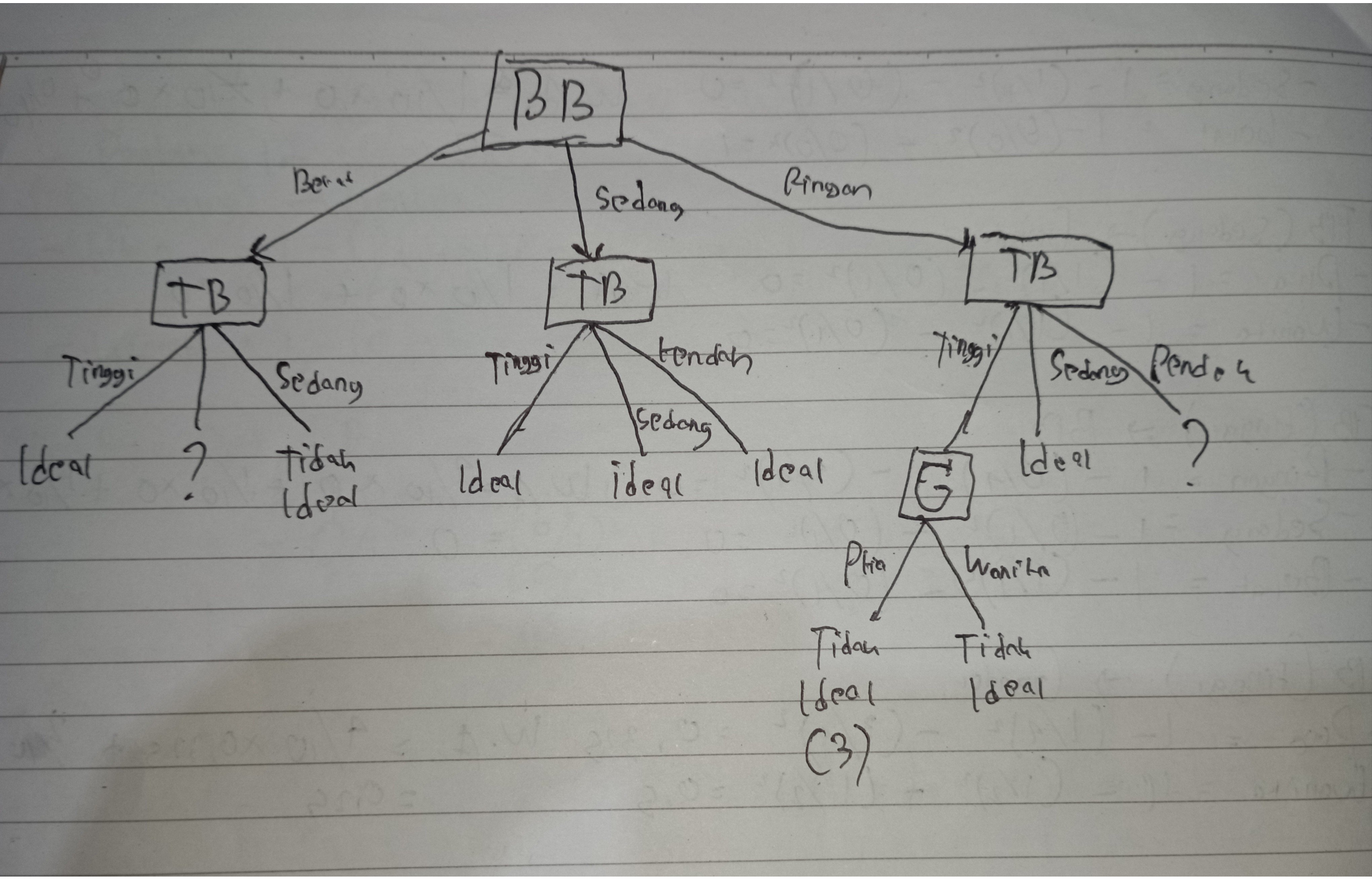
e) BB (berat) → TB

- Tinggi = $1 - (1/1)^2 - (0/1)^2 = 0$
- Sedang = $1 - (0/0)^2 - (0/0)^2 = 1$ WA. = $\frac{1}{10} \cdot 0 + \frac{0}{10} \cdot 1 + \frac{1}{10} \times 0$)
- Pendah = $1 - (0/1)^2 - (1/1)^2 = 0$ $= 0$

f) BB (berat) → Gender

- Pria = $1 - (1/1)^2 - (0/1)^2 = 0$ WA = $\frac{1}{10} \cdot 0 + \frac{1}{10} \times 0 = 0$
- Wanita = $1 - (0/1)^2 - (1/1)^2 = 0$




BB
Berat
Sedang
Ringan
TB
TB
TB
Tinggi
Sedang
Tinggi
Rendah
Sedang
Tinggi
Sedang
Pendek
Ideal
?
Tidak Ideal
Ideal
Ideal
Ideal
Ideal
?
G
Pria
Wanita
Tidak Ideal
Tidak Ideal
(3)