

Menentukan bobot pada tiap-tiap kriteria yang akan kita sediakan.

#### Daftar Kriteria

Kode kriteria	Kriteria	Bobot
C1	RAM laptop	40
C2	Prosesor laptop	35
C3	Ukuran layar laptop	25
C4	Kapasitas penyimpanan laptop	30
C5	ketahanan baterai	35
C6	Harga laptop	20
Jumlah		185

#### Daftar Alternatif

A1	ASUS ROG Zephyrus G14
A2	Apple MacBook Air M2
A3	Lenovo ThinkPad X1 Carbon Gen 11
A4	HP Spectre x360 14
A5	Acer Swift X 14 (RTX 4050)

Normalisasi =

$$W1 = \frac{40}{40+35+25+30+35+20} = 0.2162$$

$$W2 = \frac{35}{40+35+25+30+35+20} = 0.1892$$

$$W3 = \frac{25}{40+35+25+30+35+20} = 0.1351$$

$$W4 = \frac{30}{40+35+25+30+35+20} = 0.1622$$

$$W5 = \frac{35}{40+35+25+30+35+20} = 0.1892$$

$$W6 = \frac{20}{40+35+25+30+35+20} = 0.1081$$

$$0.2162 + 0.1892 + 0.1351 + 0.1622 + 0.1892 + 0.1081 = 1$$

Tabel hasil normalisasi

Kode kriteria	Kriteria	Bobot
C1	RAM laptop	0.2162
C2	Prosesor laptop	0.1892
C3	Ukuran layar laptop	0.1351
C4	Kapasitas penyimpanan laptop	0.1622
C5	ketahanan baterai	0.1892
C6	Harga laptop	0.1081
Jumlah		1

A	Kriteria					
	C1	C2	C3	C4	C5	C6
A1	6	4	11	6	8	15
A2	8	6	14	3	6	12
A3	10	7	13	5	5	10
A4	12	5	12	8	7	11
A5	6	8	15	9	9	9

$$\frac{C_{out} - C_{min}}{C_{max} - C_{min}}$$

$A1-C1$ $u_i(a_i)$ $= \frac{6-6}{12-6}$ $= \frac{0}{6}$ $=0$	$A1-C2$ $u_i(a_i)$ $= \frac{4-4}{8-4}$ $= \frac{0}{4}$ $=0$	$A1-C3$ $u_i(a_i)$ $= \frac{11-11}{15-11}$ $= \frac{0}{4}$ $=0$	$A1-C4$ $u_i(a_i)$ $= \frac{6-3}{9-3}$ $= \frac{3}{6}$ $=0,5$	$A1-C5$ $u_i(a_i)$ $= \frac{8-5}{9-5}$ $= \frac{3}{4}$ $=0,75$	$A1-C6$ $u_i(a_i)$ $= \frac{15-9}{15-9}$ $= \frac{6}{6}$ $=1$
--	---	---	---	--	---

A2-C1 $u_i(a_i)$ $= \frac{8-6}{12-6}$ $= \frac{2}{6}$ $= 0.333$	A2-C2 $u_i(a_i)$ $= \frac{6-4}{8-4}$ $= \frac{2}{4}$ $= 0.5$	A2-C3 $u_i(a_i)$ $= \frac{14-11}{15-11}$ $= \frac{3}{4}$ $= 0.75$	A2-C4 $u_i(a_i)$ $= \frac{3-3}{9-3}$ $= \frac{0}{6}$ $= 0$	A2-C5 $u_i(a_i)$ $= \frac{6-5}{9-5}$ $= \frac{1}{4}$ $= 0.25$	A2-C6 $u_i(a_i)$ $= \frac{12-9}{15-9}$ $= \frac{3}{6}$ $= 0.5$
---	--	---	--	---	--

A3-C1 $u_i(a_i)$ $= \frac{10-6}{12-6}$ $= \frac{4}{6}$ $= 0,667$	A3-C2 $u_i(a_i)$ $= \frac{7-4}{8-4}$ $= \frac{3}{4}$ $= 0,75$	A3-C3 $u_i(a_i)$ $= \frac{13-11}{15-11}$ $= \frac{2}{4}$ $= 0,5$	A3-C4 $u_i(a_i)$ $= \frac{5-3}{9-3}$ $= \frac{2}{6}$ $= 0,333$	A3-C5 $u_i(a_i)$ $= \frac{5-5}{9-5}$ $= \frac{0}{4}$ $= 0$	A3-C6 $u_i(a_i)$ $= \frac{10-9}{15-9}$ $= \frac{1}{6}$ $= 0,167$
--	---	--	--	--	--

A4-C1 $u_i(a_i)$ $= \frac{12-6}{6-6}$ $= \frac{6}{6}$ $= 1$	A4-C2 $u_i(a_i)$ $= \frac{5-4}{8-4}$ $= \frac{1}{4}$ $= 0,25$	A4-C3 $u_i(a_i)$ $= \frac{12-11}{15-11}$ $= \frac{1}{4}$ $= 0,25$	A4-C4 $u_i(a_i)$ $= \frac{8-3}{9-3}$ $= \frac{5}{6}$ $= 0,833$	A4-C5 $u_i(a_i)$ $= \frac{7-5}{9-5}$ $= \frac{2}{4}$ $= 0,5$	A4-C6 $u_i(a_i)$ $= \frac{11-9}{15-9}$ $= \frac{2}{6}$ $= 0,333$
---	---	---	--	--	--

A5-C1 $u_i(a_i)$ $= \frac{6-6}{12-6}$ $= \frac{0}{6}$ $= 0$	A5-C2 $u_i(a_i)$ $= \frac{8-4}{8-4}$ $= \frac{4}{4}$ $= 1$	A5-C3 $u_i(a_i)$ $= \frac{15-11}{15-11}$ $= \frac{4}{4}$ $= 1$	A5-C4 $u_i(a_i)$ $= \frac{9-3}{9-3}$ $= \frac{6}{6}$ $= 1$	A5-C5 $u_i(a_i)$ $= \frac{9-5}{9-5}$ $= \frac{4}{4}$ $= 1$	A5-C6 $u_i(a_i)$ $= \frac{9-9}{15-9}$ $= \frac{0}{4}$ $= 0$
---	--	--	--	--	---

Alternatif Pilihan							$\Sigma U(i)$
	C1	C2	C3	C4	C5	C6	
A1	0	0	0	0,5	0,75	1	0.3311
A2	0.333	0.5	0.75	0	0.25	0.5	0.3692
A3	0.667	0.75	0.5	0.333	0	0.167	0.4258
A4	1	0.25	0.25	0.833	0.5	0.333	0.5629
A5	0	1	1	1	1	0	0.6757

Langkah - langkah menghitung nilai akhir

$$U(A1) = (0.2162 \times 0) + (0.1892 \times 0) + (0.1351 \times 0) + (0.1622 \times 0.5) + (0.1892 \times 0.75) + (0.1081 \times 1) = 0 + 0 + 0 + 0.0811 + 0.1419 + 0.1081 = \mathbf{0.3311}$$

$$U(A2) = (0.2162 \times 0.333) + (0.1892 \times 0.5) + (0.1351 \times 0.75) + (0.1622 \times 0) + (0.1892 \times 0.25) + (0.1081 \times 0.5) = 0.072 + 0.0946 + 0.1013 + 0 + 0.0473 + 0.0540 = \mathbf{0.3692}$$

$$U(A3) = (0.2162 \times 0.667) + (0.1892 \times 0.75) + (0.1351 \times 0.5) + (0.1622 \times 0.333) + (0.1892 \times 0) + (0.1081 \times 0.167) = 0.1442 + 0.1419 + 0.0676 + 0.0540 + 0 + 0.0181 = \mathbf{0.4258}$$

$$U(A4) = (0.2162 \times 1) + (0.1892 \times 0.25) + (0.1351 \times 0.25) + (0.1622 \times 0.833) + (0.1892 \times 0.5) + (0.1081 \times 0.333) = 0.2162 + 0.0473 + 0.0338 + 0.1351 + 0.0946 + 0.0360 = \mathbf{0.5629}$$

$$U(A5) = (0.2162 \times 0) + (0.1892 \times 1) + (0.1351 \times 1) + (0.1622 \times 1) + (0.1892 \times 1) + (0.1081 \times 0) = 0 + 0.1892 + 0.1351 + 0.1622 + 0.1892 + 0 = \mathbf{0.6757}$$

Ranking	Alternatif	Nilai Akhir	Keterangan
1	Acer Swift X 14 (RTX 4050)	<b>0.6757</b>	<b>Rekomendasi Pilihan 1</b>
2	HP Spectre x360 14	0.5629	Rekomendasi Pilihan 2

3	Lenovo ThinkPad X1 Carbon Gen 11	0.4258	Rekomendasi Pilihan 3
4	Apple MacBook Air M2	0.3692	Rekomendasi Pilihan 4
5	ASUS ROG Zephyrus G14	0.3311	Rekomendasi Pilihan 5

## Kesimpulan

berdasarkan perhitungan yang sudah dilakukan menggunakan metode **SMART** untuk mencari mana laptop yang terbaik berdasarkan kriteria yang sudah ditentukan maka hasil terbaik jatuh kepada Laptop **Acer Swift X 14 (RTX 4050)** dengan nilai akhir **0.6757**, dan

Keunggulan terletak sebagai berikut :

1. RAM laptop = 6
2. Processor laptop = 8
3. Ukuran layar laptop = 15
4. Kapasitas penyimpanan laptop = 9
5. ketahanan baterai = 9
6. harga baterai = 9