BAB III
ANALISIS DAN PERANCANGAN

3.1 Analisis Sistem

Analisis sistem dilakukan untuk mempelajari dan menganalisa kebutuhan sistem yang akan dibuat, sehingga dapat dilakukan perancangan sistem dengan kriteria dan perangkat-perangkat yang ditentukan. Dari riset yang penulis lakukan di Auto 2000 manyar Gresik, mobil Toyota yang di pakai yaitu jenis MPV (*Multi Purpose Vehicle*), dan Hatchback. Jenis ini dipilih berdasarkan data penjualan terbanyak dari bulan juli – desember 2017. Dari data tersebut ada 7 alternatif mobil sebagai acuan pilihan yaitu New Avanzaa 1.3 E STD M/T, New Avanza 1.3 Veloz M/T, New Avanza 1.3 G M/T Basic, New Agya 1.0 G M/T, New Agya 1.2 G M/T , New Agya 1.2 G M/T TRD, dan New Yaris G CVT, dimana tipe mobil tersebut memiliki spesifikasi teknis yang berbeda, seperti kapasitas silinder (*Cylinder Capacity/cc*), transmisi, *type variant*, suspensi maupun spesifikasi teknis lainnya, untuk memilih sebuah mobil tidaklah semudah yang dibayangkan, banyak faktor yang harus menjadi pertimbangan sebelum memutuskan untuk membeli sebuah mobil. Masih banyak masyarakat yang ingin membeli mobil belum mengetahui faktor apa saja yang menjadi indikator dalam pemilihan mobil tersebut agar benar-benar cocok dan sesuai dengan kebutuhan mereka. Indikator yang perlu diperhatikan dalam pembelian mobil diantaranya adalah harga, jenis mobil, kapasitas penumpang, kapasitas mesin, transmisi, bahan bakar, keamanan/kenyamanan, dan beban maksimum.

3.2 Hasil Analisis Sistem

Sistem yang akan dibangun dalam pemilihan mobil adalah sistem pendukung keputusan rekomendasi mobil menggunakan metode *Electre*. *ELECTRE* (*Elimination and Choice Translation Reality*) merupakan salah satu metode pengambilan keputusan multikriteria dengan menggunakan perbandingan berpasangan alternatif-alternatif berdasarkan setiap kriteria yang sesuai. Aplikasi ini menggunakan beberapa kriteria yaitu harga, jenis mobil, kapasitas penumpang,

kapasitas mesin, transmisi, bahan bakar, warna, dan beban maksimum. Untuk metode *Electre* akan mengeliminasi setiap alternatif yang memiliki nilai e_{kl} terendah hingga menyisakan alternatif yang dominan.

Sistem pendukung keputusan pemilihan mobil dengan metode *Electre* diharapkan mampu membantu konsumen dalam memilih beberapa alternatif pilihan mobil yang lebih baik. Metode ini merupakan salah salah satu metode digunakan untuk menentukan peringkat dan menentukan alternatif terbaik. Konsep dasar metode *Electre* adalah untuk menangani hubungan *outranking* dengan menggunakan perbandingan berpasangan antara alternatif di bawah masing-masing kriteria secara terpisah. Hubungan *outranking* A_i . A_j menjelaskan bahwa bahkan ketika alternatif ke-i tidak mendominasi alternatif ke-j secara kuantitatif, maka pengambil keputusan masih dapat mengambil risiko A_i tentang karena hampir pasti lebih baik dari A_j. Alternatif dikatakan didominasi, jika ada alternatif lain yang mengungguli mereka dalam satu atau lebih atribut dan sama dalam atribut yang tersisa (Hwang dan Yoon, 1981). *Outranking* di sini adalah mengambil hasil terakhir dari semua perbandingan berpasangan setiap alternatif pada setiap kriteria, dimana peringkat dengan hasil terbanyak menjadi peringkat terbaik.

Dari hasil analisis sistem diatas maka dapat digambarkan diagram alir kerja sistem pendukung keputusan pemilihan mobil dengam metode *electre* ini di tunjukkan pada **gambar 3.1**

Gambar 3.1 *Diagram Alir*

Gambar 3.1 Menjelaskan tahap analisis yang dimulai dengan memberikan pilihan mobil. Kemudian sistem akan memulai menghitung metode *electre,* kemudian sistem akan menampilkan hasil untuk rekomendasi mobil.

3.3 Representasi Model

Data hasil penjualan mobil adalah data untuk melakukan proses pembuatan sistem pendukung keputusan untuk rekomendasi pemilihan mobil toyota sebagai acuan menentukan alternatif pemilihan mobil berdasarkan minat konsumen, agar mendapatkan mobil yang sesuai dengan kebutuhan, dana, dan tentunya sesuai dengan yang mereka harapkan. Data hasil penjualan mobil ini diperoleh dari PT. Toyota Auto 2000 selama 6 bulan, pada bulan Juni – Desember tahun 2017, dimana hasil penjualan diatas 51% digunakan sebagai data pilihan alternative mobil Toyota.

Sumber data yang digunakan adalah prosentase hasil penjualan, dan rata-rata *(average)* setiap bulan dari bulan Juni – Desember 2017. Tabel 3.1 menampilkan hasil penjualan mobil PT. Toyota Auto 2000 disetiap bulannya dalam satuan *unit* mobil.

Tabel 3.1 Laporan Hasil Penjualan Mobil PT. Toyota Auto 2000

No.	TYPE	Kategori	Target	Target 2017						
				JUL	AUG	SEP	OCT	NOV	DEC	AVG
1	NEW AVANZA 1.3 E STD M/T	MPV	100%	91%	76%	78%	62%	58%	82%	**74.50%**
2	NEW AVANZA 1.3 VELOZ M/T	MPV	100%	80%	78%	67%	57%	70%	80%	**72.00%**
3	NEW AVANZA 1.3 G M/T BASIC	MPV	100%	85%	79%	67%	70%	62%	58%	**70.17%**
4	NEW AGYA 1.0 G M/T	Hatchback	100%	88%	67%	58%	65%	68%	60%	**67.67%**
5	NEW AGYA 1.2 G M/T	Hatchback	100%	80%	70%	65%	55%	63%	58%	**65.17%**
6	NEW AGYA 1.2 G M/T TRD	Hatchback	100%	75%	67%	71%	56%	45%	72%	**64.33%**
7	NEW YARIS G CVT	Hatchback	100%	70%	65%	55%	60%	65%	66%	**63.50%**
8	NEW AGYA 1.2 G A/T TRD	Hatchback	100%	60%	56%	49%	3%5	45%	45%	**51.00%**
9	NEW AVANZA 1.3 E STD A/T	MPV	100%	53%	50%	45%	48%	38%	45%	**46.50%**
10	NEW AGYA 1.2 G A/T	Hatchback	100%	56%	54%	45%	35%	25%	58%	**45.50%**
11	NEW AVANZA 1.3 VELOZ A/T	MPV	100%	54%	50%	48%	35%	40%	45%	**45.33%**
12	NEW AVANZA 1.5 VELOZ A/T	MPV	100%	51%	48%	40%	35%	45%	47%	**44.33%**
13	NEW AVANZA 1.5 VELOZ M/T	MPV	100%	48%	45%	38%	40%	35%	38%	**40.67%**
14	NEW AVANZA 1.5 G M/T LIMITED	MPV	100%	50%	48%	35%	30%	25%	35%	**37.17%**
15	RUSH 1.5 G M/T LUX	SUV	100%	45%	38%	30%	27%	31%	35%	**34.33%**
16	NEW AVANZA 1.3 E A/T	MPV	100%	38%	36%	30%	25%	28%	37%	**32.33%**
17	ETIOS 1.2 JX M/T	Hatchback	100%	35%	25%	20%	32%	25%	30%	**27.83%**
18	NEW AVANZA 1.3 E M/T	MPV	100%	35%	30%	25%	20%	25%	30%	**27.50%**
19	NEW AVANZA 1.3 G A/T	MPV	100%	30%	29%	25%	20%	25%	28%	**26.17%**
20	NEW YARIS E CVT	Hatchback	100%	38%	15%	25%	29%	15%	31%	**25.50%**
21	RUSH 1.5 G A/T LUX	SUV	100%	36%	28%	21%	17%	20%	26%	**24.67%**
22	NEW AVANZA 1.3 G M/T	MPV	100%	28%	26%	26%	18%	20%	26%	**24.00%**
23	CALYA 1.2 E M/T	MPV	100%	23%	18%	20%	25%	25%	25%	**22.67%**
24	RUSH 1.5 S A/T TRD SPORTIVO ULTIMO	SUV	100%	35%	15%	25%	20%	15%	18%	**21.33%**
25	ALL NEW RUSH 1.5 G M/T TRD	SUV	100%	30%	24%	20%	15%	18%	20%	**21.17%**

Sumber : Data Laporan Hasil Penjualan mobil PT. Toyota Auto 2000

Dari data laporan hasil penjualan mobil diatas bahwa konsumen lebih memilih New Avanza 1.3 E STD M/T sebesar 74.50%, New Avanza 1.3 Veloz M/T sebesar 72.00%, New Avanza 1.3 G M/T Basic sebesar 70.17%, New Agya 1.0 G M/T sebesar 67.67%, New Agya 1.2 G M/T sebesar 65.17%, New Agya 1.2 G M/T TRD sebesar 64.33%, New Yaris G CVT sebesar 63.50%. Variabel-variabel penjualan diatas yang mencapai target melebihi 50% dijadikan patokan untuk sistem rekomendasi pemilihan mobil dengan alternatif sebagai berikut :

1. New Avanzaa 1.3 E STD M/T
2. New Avanza 1.3 Veloz M/T
3. New Avanza 1.3 G M/T Basic
4. New Agya 1.0 G M/T
5. New Agya 1.2 G M/T
6. New Agya 1.2 G M/T TRD
7. New Yaris G CVT

Alternatif tersebut akan diselesaikan dengan pendekatan metode *Electre,* sehingga sistem bisa memberikan rekomendasi yang tepat kepada pembeli tersebut.

3.3.1 Metode *Electre*

Berikut adalah langkah penyelesaiannya :

a. Menentukan Kriteria dan Bobot.

   Kriteria dan bobot ditentukan oleh pembuat keputusan berdasarkan *survey* dan kuisoner yang telah dilakukan oleh peneliti. Untuk setiap kriteria memiliki bobot masing-masing yang dapat digunakan sebagai parameter penyeleksian mobil.

1) Harga (F1)

Tabel 3.2 Kriteria Harga

Kriteria	Bobot
Murah	4
Cukup Mahal	3
Mahal	2
Sangan Mahal	1

2) Jenis Mobil (F2)

Tabel 3.3 Kriteria Jenis Mobil

Kriteria	Bobot
MPV	4
Hatchback	3
Sedan	2
SUV	1

3) Transmisi (F3)

Tabel 3.4 Kriteria Transmisi

Kriteria	Bobot
7-speed M/T	4
6-speed M/T	3
5-Speed A/T	2
4-Speed A/T	1

4) Kapasitas Mesin / CC (F4)

Tabel 3.5 Kriteria Kapasitas Mesin / CC

Kriteria	Bobot
1300 CC	4
1200 CC	3
1000 CC	2
998 CC	1

5) Bahan Bakar (F5)

Tabel 3.6 Kriteria Bahan Bakar

Kriteria	Bobot
Bensin	4
Solar	3

6) Kapasitas Penumpang (F6)

Tabel 3.7 Kriteria Kapasitas Penumpang

Kriteria	Bobot
7 Orang	4
5 Orang	3
4 Orang	2
2 Orang	1

7) Warna (F7)

Tabel 3.8 Kriteria Warna

Kriteria	Bobot
Black Metalic	4
White	3
Grey	2
Red	1

8) Beban Maksimum (F8)

Tabel 3.9 Kriteria Beban Maksimum

Kriteria	Bobot
600 kg	4
415 kg	3
405 kg	2
360 kg	1

Setelah mengetahui kriteria dan bobot yang diperoleh dari *survey* dan data, maka nilai yang diterima berupa angka untuk setiap alternatif. Dari data mobil yang telah dipilih diperoleh nilai sebagai berikut:

Tabel 3.10 Data Penilaian Alternatif

Alternatif	Kriteria							
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**
NewAvanzaa 1.3 E STD M/T	4	3	3	2	2	3	4	3
NewAvanza 1.3 Veloz M/T	4	2	3	2	2	2	2	2
NewAvanza 1.3GM/T Basic	4	1	3	2	2	3	2	2
New Agya 1.0 G M/T	4	4	3	3	2	4	3	4
New Agya 1.2 G M/T	4	1	3	1	1	2	2	2
New Agya 1.2 G M/T TRD	4	2	3	1	2	2	2	2
New Yaris G CVT	4	3	3	2	2	3	2	2
W	4	2	2	3	2	3	2	1

Ketentuan dari nilai bobot W yaitu 4=Sangat Penting, 3=Penting, 2=Cukup Penting, 1=Kurang Penting.

Langkah pertama yang harus dilakukan dalam metode *electre* adalah membentuk perbandingan berpasangan setiap alternatif pada setiap kriteria (a_{ij}). Nilai tersebut harus dinormalisasikan ke dalam suatu skala yang dapat diperbandingkan (x_{ij}):

$$x_{ij} = \frac{a_{ij}}{\sqrt{\sum_{i=1}^{M} a_{ij}^2}}$$;untuk i=1,2,3,…,m dan j=1,2,3,…,n

Hasil normalisasi alternatif dan kriteria akan menghasilkan Matriks R yang merupakan normalisasi dari matriks X atau matriks keputusan yaitu dengan cara sebagai berikut :

$|X_1|=\sqrt{4^2+4^2+4^2+4^2+4^2+4^2+4^2}=10{,}58$

$r_{11}=\frac{X_{11}}{X_1}=\frac{4}{10{,}58}=0{,}3780$

$r_{21}=\frac{X_{21}}{X_1}=\frac{4}{10{,}58}=0{,}3780$

$r_{31}=\frac{X_{31}}{X_1}=\frac{4}{10{,}58}=0{,}3780$

$r_{41}=\frac{X_{41}}{X_1}=\frac{4}{10{,}58}=0{,}3780$

$r_{51}=\frac{X_{51}}{X_1}=\frac{4}{10{,}58}=0{,}3780$

$r_{61}=\frac{X_{61}}{X_1}=\frac{4}{10{,}58}=0{,}3780$

$r_{71}=\frac{X_{71}}{X_1}=\frac{4}{10{,}58}=0{,}3780$

$|X_2|=\sqrt{3^2+2^2+1^2+4^2+1^2+2^2+3^2}=6{,}633$

$r_{12}=\frac{X_{12}}{X_2}=\frac{3}{6{,}633}=0{,}4523$

$r_{22}=\frac{X_{22}}{X_2}=\frac{2}{6{,}633}=0{,}3015$

$r_{32}=\frac{X_{32}}{X_2}=\frac{1}{6{,}633}=0{,}1508$

$r_{42}=\frac{X_{42}}{X_2}=\frac{4}{6{,}633}=0{,}6030$

$r_{52}=\frac{X_{52}}{X_2}=\frac{1}{6{,}633}=0{,}1508$

$r_{62}=\frac{X_{62}}{X_2}=\frac{2}{6{,}633}=0{,}3015$

$r_{72}=\frac{X_{72}}{X_2}=\frac{3}{6{,}633}=0{,}4523$

$|X_3|=\sqrt{3^2+3^2+3^2+3^2+3^2+3^2+3^2}=7{,}9372$

$r_{13}=\frac{X_{13}}{X_3}=\frac{3}{7{,}9372}=0{,}3780$

$r_{23}=\frac{X_{23}}{X_3}=\frac{3}{7{,}9372}=0{,}3780$

$r_{33}=\frac{X_{33}}{X_3}=\frac{3}{7{,}9372}=0{,}3780$

$r_{43}=\frac{X_{43}}{X_3}=\frac{3}{7{,}9372}=0{,}3780$

$r_{53}=\frac{X_{53}}{X_3}=\frac{3}{7{,}9372}=0{,}3780$

$$r_{63}=\frac{X_{63}}{X_3}=\frac{3}{7,9372}=0,3780$$

$$r_{73}=\frac{X_{73}}{X_3}=\frac{3}{7,9372}=0,3780$$

$$|X_4|=\sqrt{2^2+2^2+2^2+3^2+1^2+1^2+2^2}=5,1961$$

$$r_{14}=\frac{X_{14}}{X_4}=\frac{2}{5,1961}=0,3849$$

$$r_{24}=\frac{X_{24}}{X_4}=\frac{2}{5,1961}=0,3849$$

$$r_{34}=\frac{X_{34}}{X_4}=\frac{2}{5,1961}=0,3849$$

$$r_{44}=\frac{X_{44}}{X_4}=\frac{3}{5,1961}=0,5774$$

$$r_{54}=\frac{X_{54}}{X_4}=\frac{1}{5,1961}=0,1925$$

$$r_{64}=\frac{X_{64}}{X_4}=\frac{1}{5,1961}=0,1925$$

$$r_{74}=\frac{X_{74}}{X_4}=\frac{2}{5,1961}=0,3849$$

$$|X_5|=\sqrt{2^2+2^2+2^2+2^2+1^2+2^2+2^2}=5$$

$$r_{15}=\frac{X_{15}}{X_5}=\frac{2}{5}=0,4000$$

$$r_{25}=\frac{X_{25}}{X_5}=\frac{2}{5}=0,4000$$

$$r_{35}=\frac{X_{35}}{X_5}=\frac{2}{5}=0,4000$$

$$r_{45}=\frac{X_{45}}{X_5}=\frac{2}{5}=0,4000$$

$$r_{55}=\frac{X_{55}}{X_5}=\frac{1}{5}=0,2000$$

$$r_{65}=\frac{X_{65}}{X_5}=\frac{2}{5}=0,4000$$

$$r_{75}=\frac{X_{75}}{X_5}=\frac{2}{5}=0,4000$$

$$|X_6|=\sqrt{3^2+2^2+3^2+4^2+2^2+2^2+3^2}=7,4161$$

$$r_{16}=\frac{X_{16}}{X_6}=\frac{3}{7,4161}=0,4045$$

$$r_{26}=\frac{X_{26}}{X_6}=\frac{2}{7,4161}=0,2697$$

$$r_{36}=\frac{X_{36}}{X_6}=\frac{3}{7{,}4161}=0{,}4045$$

$$r_{46}=\frac{X_{46}}{X_6}=\frac{4}{7{,}4161}=0{,}5394$$

$$r_{56}=\frac{X_{56}}{X_6}=\frac{2}{7{,}4161}=0{,}2697$$

$$r_{66}=\frac{X_{66}}{X_6}=\frac{2}{7{,}4161}=0{,}2697$$

$$r_{76}=\frac{X_{76}}{X_6}=\frac{3}{7{,}4161}=0{,}4045$$

$$|X_7|=\sqrt{4^2+2^2+2^2+3^2+2^2+2^2+2^2}=6{,}7082$$

$$r_{17}=\frac{X_{17}}{X_7}=\frac{4}{6{,}7082}=0{,}5963$$

$$r_{27}=\frac{X_{27}}{X_7}=\frac{2}{6{,}7082}=0{,}2981$$

$$r_{37}=\frac{X_{37}}{X_7}=\frac{2}{6{,}7082}=02981$$

$$r_{47}=\frac{X_{47}}{X_7}=\frac{3}{6{,}7082}=0{,}4472$$

$$r_{57}=\frac{X_{57}}{X_7}=\frac{2}{6{,}7082}=02981$$

$$r_{67}=\frac{X_{67}}{X_7}=\frac{2}{6{,}7082}=02981$$

$$r_{77}=\frac{X_{77}}{X_7}=\frac{2}{6{,}7082}=02981$$

$$|X_8|=\sqrt{3^2+2^2+2^2+4^2+2^2+2^2+2^2}=6{,}7082$$

$$r_{18}=\frac{X_{18}}{X_8}=\frac{3}{6{,}7082}=0{,}4472$$

$$r_{28}=\frac{X_{28}}{X_8}=\frac{2}{6{,}7082}=02981$$

$$r_{38}=\frac{X_{38}}{X_8}=\frac{2}{6{,}7082}=02981$$

$$r_{48}=\frac{X_{48}}{X_8}=\frac{4}{6{,}7082}=0{,}5963$$

$$r_{58}=\frac{X_{58}}{X_8}=\frac{2}{6{,}7082}=02981$$

$$r_{68}=\frac{X_{68}}{X_8}=\frac{2}{6{,}7082}=02981$$

$$r_{78}=\frac{X_{78}}{X_8}=\frac{2}{6{,}7082}=02981$$

Berikut adalah hasil normalisasi matriks X yang disebut matriks R.

$$R = \begin{vmatrix} 0{,}3780 & 0{,}4523 & 0{,}3780 & 0{,}3849 & 0{,}4000 & 0{,}4045 & 0{,}5963 & 0{,}4472 \\ 0{,}3780 & 0{,}3015 & 0{,}3780 & 0{,}3849 & 0{,}4000 & 0{,}2697 & 0{,}2981 & 0{,}2981 \\ 0{,}3780 & 0{,}1508 & 0{,}3780 & 0{,}3849 & 0{,}4000 & 0{,}4045 & 0{,}2981 & 0{,}2981 \\ 0{,}3780 & 0{,}6030 & 0{,}3780 & 0{,}5774 & 0{,}2000 & 0{,}5394 & 0{,}4472 & 0{,}5963 \\ 0{,}3780 & 0{,}1508 & 0{,}3780 & 0{,}1925 & 0{,}4000 & 0{,}2697 & 0{,}2981 & 0{,}2981 \\ 0{,}3780 & 0{,}3015 & 0{,}3780 & 0{,}1925 & 0{,}4000 & 0{,}2697 & 0{,}2981 & 0{,}2981 \\ 0{,}3780 & 0{,}4523 & 0{,}3780 & 0{,}3849 & 0{,}4000 & 0{,}4045 & 0{,}2981 & 0{,}2981 \end{vmatrix}$$

Setelah dinormalisasi menghasilkan mtriks R, langkah yang dilakukan oleh pengambil keputusan adalah memberikan bobot (faktor kepentingan) pada setiap kriteria yang mengekspresikan kepentingan relatifnya (w_i) dengan cara setiap kolom dari matriks X dikalikan bobot-bobot yang ditentukan oleh pembuat keputusan yang nantinya menghasilkan Matriks V, diperoleh dengan cara sebagai berikut :

$V_{11} = w_1 r_{11} = 4\ (0{,}3780) = 1{,}5119$
$V_{12} = w_2 r_{12} = 2\ (0{,}4523) = 0{,}9045$
$V_{13} = w_3 r_{13} = 2\ (0{,}3780) = 0{,}7559$
$V_{14} = w_4 r_{14} = 3\ (0{,}3849) = 1{,}1547$
$V_{15} = w_5 r_{15} = 2\ (0{,}4000) = 0{,}8000$
$V_{16} = w_6 r_{16} = 3\ (0{,}4045) = 1{,}2136$
$V_{17} = w_7 r_{17} = 2\ (0{,}5963) = 1{,}1926$
$V_{18} = w_8 r_{18} = 1\ (0{,}4472) = 0{,}4472$

$V_{21} = w_1 r_{21} = 4\ (0{,}3780) = 1{,}5119$
$V_{22} = w_2 r_{22} = 2\ (0{,}3015) = 0{,}6030$
$V_{23} = w_3 r_{23} = 2\ (0{,}3780) = 0{,}7559$
$V_{24} = w_4 r_{24} = 3\ (0{,}3849) = 1{,}1547$
$V_{25} = w_5 r_{25} = 2\ (0{,}4000) = 0{,}8000$

$V_{31} = w_1 r_{31} = 4\ (0{,}3780) = 1{,}5119$
$V_{32} = w_2 r_{32} = 2\ (0{,}1508) = 0{,}3015$
$V_{33} = w_3 r_{33} = 2\ (0{,}3780) = 0{,}7559$
$V_{34} = w_4 r_{34} = 3\ (0{,}3849) = 1{,}1547$
$V_{35} = w_5 r_{35} = 2\ (0{,}4000) = 0{,}8000$
$V_{36} = w_6 r_{36} = 3\ (0{,}4045) = 1{,}2136$
$V_{37} = w_7 r_{37} = 2\ (0{,}2981) = 0{,}5963$
$V_{38} = w_8 r_{38} = 1\ (0{,}2981) = 0{,}2981$

$V_{41} = w_1 r_{41} = 4\ (0{,}3780) = 1{,}5119$
$V_{42} = w_2 r_{42} = 2\ (0{,}6030) = 1{,}2060$
$V_{43} = w_3 r_{43} = 2\ (0{,}3780) = 0{,}7559$
$V_{44} = w_4 r_{44} = 3\ (0{,}5774) = 1{,}7321$
$V_{45} = w_5 r_{45} = 2\ (0{,}4000) = 0{,}8000$

$V_{26}= w_6r_{26} = 3\ (0{,}2697) = 0{,}8090$
$V_{27}= w_7r_{27} = 2\ (0{,}2981) = 0{,}5963$
$V_{28}= w_8r_{28} = 1\ (0{,}2981) = 0{,}2981$

$V_{46}= w_6r_{46} = 3\ (0{,}5394) = 1{,}6181$
$V_{47}= w_7r_{47} = 2\ (0{,}4472) = 0{,}8944$
$V_{48}= w_8r_{48} = 1\ (0{,}5963) = 0{,}5963$

$V_{51}= w_1r_{51} = 4\ (0{,}3780) = 1{,}5119$
$V_{52}= w_2r_{52} = 2\ (0{,}1508) = 0{,}3015$
$V_{53}= w_3r_{53} = 2\ (0{,}3780) = 0{,}7559$
$V_{54}= w_4r_{54} = 3\ (0{,}1925) = 0{,}5774$
$V_{55}= w_5r_{55} = 2\ (0{,}2000) = 0{,}4000$
$V_{56}= w_6r_{56} = 3\ (0{,}2697) = 0{,}8090$
$V_{57}= w_7r_{57} = 2\ (0{,}2981) = 0{,}5963$
$V_{58}= w_8r_{58} = 1\ (0{,}2981) = 0{,}2981$

$V_{71}= w_1r_{71} = 4\ (0{,}3780) = 1{,}5119$
$V_{72}= w_2r_{72} = 2\ (0{,}4523) = 0{,}9045$
$V_{73}= w_3r_{73} = 2\ (0{,}3780) = 0{,}7559$
$V_{74}= w_4r_{74} = 3\ (0{,}3849) = 1{,}1547$
$V_{75}= w_5r_{75} = 2\ (0{,}4000) = 0{,}8000$
$V_{76}= w_6r_{76} = 3\ (0{,}4045) = 1{,}2136$
$V_{77}= w_7r_{77} = 2\ (0{,}2981) = 0{,}5963$
$V_{78}= w_8r_{78} = 1\ (0{,}2981) = 0{,}2981$

$V_{61}= w_1r_{61} = 4\ (0{,}3780) = 1{,}5119$
$V_{62}= w_2r_{62} = 2\ (0{,}3015) = 0{,}6030$
$V_{63}= w_3r_{63} = 2\ (0{,}3780) = 0{,}7559$
$V_{64}= w_4r_{64} = 3\ (0{,}1925) = 0{,}5774$
$V_{65}= w_5r_{65} = 2\ (0{,}4000) = 0{,}8000$
$V_{66}= w_6r_{66} = 3\ (0{,}2697) = 0{,}8090$
$V_{67}= w_7r_{67} = 2\ (0{,}2981) = 0{,}5963$
$V_{68}= w_8r_{68} = 1\ (0{,}2981) = 0{,}2981$

Diperoleh matriks V :

$$V = \begin{vmatrix} 1{,}5119 & 0{,}9045 & 0{,}7559 & 1{,}1547 & 0{,}8000 & 1{,}2136 & 1{,}1926 & 0{,}4472 \\ 1{,}5119 & 0{,}6030 & 0{,}7559 & 1{,}1547 & 0{,}8000 & 0{,}8090 & 0{,}5963 & 0{,}2981 \\ 1{,}5119 & 0{,}3015 & 0{,}7559 & 1{,}1547 & 0{,}8000 & 1{,}2136 & 0{,}5963 & 0{,}2981 \\ 1{,}5119 & 1{,}2060 & 0{,}7559 & 1{,}7321 & 0{,}8000 & 1{,}6181 & 0{,}8944 & 0{,}5963 \\ 1{,}5119 & 0{,}3015 & 0{,}7559 & 0{,}5774 & 0{,}4000 & 0{,}8090 & 0{,}5963 & 0{,}2981 \\ 1{,}5119 & 0{,}6030 & 0{,}7559 & 0{,}5774 & 0{,}8000 & 0{,}8080 & 0{,}5963 & 0{,}2981 \\ 1{,}5119 & 0{,}9045 & 0{,}7559 & 1{,}1547 & 0{,}8000 & 1{,}2136 & 0{,}5963 & 0{,}2981 \end{vmatrix}$$

Setelah ditemukan matriks V maka selanjutnya ditentukan himpunan *corcodence,* dengan cara membandingkan alternatif (y_{kj}) lebih besar dari alternatif (y_{lj}) maka disimbolkan dengan (B), dan apabila alternatif (y_{kj}) lebih kecil dari alternatif (y_{lj}) maka disimbolkan dengan (S) dan tidak masuk sebagai himpunan *corcodance,* dirumuskan sebagai berikut :

$$C_{kl} = \{ j \mid y_{kj} \geq y_{lj} \} \text{ ; untuk j=1,2,3,…,n}$$

C_{12} = 1, $y_{11} > y_{21}$ = 1,5119 > 1,5119 = B
= 2, $y_{12} > y_{22}$ = 0,9045 > 0,6030 = B
= 3, $y_{13} > y_{23}$ = 0,7559 > 0,7559 = B
= 4, $y_{14} > y_{24}$ = 1,1547 > 1,1547 = B
= 5, $y_{15} > y_{25}$ = 0,8000 > 0,8000 = B
= 6, $y_{16} > y_{26}$ = 1,2136 > 0,8090 = B
= 7, $y_{17} > y_{27}$ = 1,1926 > 0,5963 = B
= 8, $y_{18} > y_{28}$ = 0,4472 > 0,2981 = B

C_{13} = 1, $y_{11} > y_{31}$ = 1,5119 > 1,5119 = B
= 2, $y_{12} > y_{32}$ = 0,9045 > 0,3015 = B
= 3, $y_{13} > y_{33}$ = 0,7559 > 0,7559 = B
= 4, $y_{14} > y_{34}$ = 1,1547 > 1,1547 = B
= 5, $y_{15} > y_{35}$ = 0,8000 > 0,8000 = B
= 6, $y_{16} > y_{36}$ = 1,2136 > 1,2136 = B
= 7, $y_{17} > y_{37}$ = 1,1926 > 0,5963 = B
= 8, $y_{18} > y_{38}$ = 0,4472 > 0,2981 = B

C_{14} = 1, $y_{11} > y_{41}$ = 1,5119 > 1,5119 = B
= 2, $y_{12} > y_{42}$ = 0,9045 > 1,2060 = S
= 3, $y_{13} > y_{43}$ = 0,7559 > 0,7559 = B
= 4, $y_{14} > y_{44}$ = 1,1547 > 1,7321 = S
= 5, $y_{15} > y_{45}$ = 0,8000 > 0,8000 = B
= 6, $y_{16} > y_{46}$ = 1,2136 > 1,6181 = S
= 7, $y_{17} > y_{47}$ = 1,1926 > 0,8944 = B
= 8, $y_{18} > y_{48}$ = 0,4472 > 0,5963 = S

C_{15} = 1, $y_{11} > y_{51}$ = 1,5119 > 1,5119 = B
= 2, $y_{12} > y_{52}$ = 0,9045 > 0,3015 = B
= 3, $y_{13} > y_{53}$ = 0,7559 > 0,7559 = B
= 4, $y_{14} > y_{54}$ = 1,1547 > 0,5774 = B
= 5, $y_{15} > y_{55}$ = 0,8000 > 0,4000 = B
= 6, $y_{16} > y_{56}$ = 1,2136 > 0,8090 = B
= 7, $y_{17} > y_{57}$ = 1,1926 > 0,5963 = B
= 8, $y_{18} > y_{58}$ = 0,4472 > 0,2981 = B

C_{16} = 1, $y_{11} > y_{61}$ = 1,5119 > 1,5119 = B
= 2, $y_{12} > y_{62}$ = 0,9045 > 0,6030 = B
= 3, $y_{13} > y_{63}$ = 0,7559 > 0,7559 = B
= 4, $y_{14} > y_{64}$ = 1,1547 > 0,5774 = B
= 5, $y_{15} > y_{65}$ = 0,8000 > 0,8000 = B
= 6, $y_{16} > y_{66}$ = 1,2136 > 0,8090 = B
= 7, $y_{17} > y_{67}$ = 1,1926 > 0,5963 = B

C_{17} = 1, $y_{11} > y_{71}$ = 1,5119 > 1,5119 = B
= 2, $y_{12} > y_{72}$ = 0,9045 > 0,9045 = B
= 3, $y_{13} > y_{73}$ = 0,7559 > 0,7559 = B
= 4, $y_{14} > y_{74}$ = 1,1547 > 1,1547 = B
= 5, $y_{15} > y_{75}$ = 0,8000 > 0,8000 = B
= 6, $y_{16} > y_{76}$ = 1,2136 > 1,2136 = B
= 7, $y_{17} > y_{77}$ = 1,1926 > 0,5963 = B

= 8, $y_{18} > y_{68}$ = 0,4472 > 0,2981 = B

= 8, $y_{18} > y_{78}$ = 0,4472 > 0,2981 = B

C_{21} = 1, $y_{21} > y_{11}$ = 1,5119 > 1,5119 = B
= 2, $y_{22} > y_{12}$ = 0,6030 > 0,9045 = S
= 3, $y_{23} > y_{13}$ = 0,7559 > 0,7559 = B
= 4, $y_{24} > y_{14}$ = 1,1547 > 1,1547 = B
= 5, $y_{25} > y_{15}$ = 0,8000 > 0,8000 = B
= 6, $y_{26} > y_{16}$ = 0,8090 > 1,2136 = S
= 7, $y_{27} > y_{17}$ = 0,5963 > 1,1926 = S
= 8, $y_{28} > y_{18}$ = 0,2981 > 0,4472 = S

C_{23} = 1, $y_{21} > y_{31}$ = 1,5119 > 1,5119 = B
= 2, $y_{22} > y_{32}$ = 0,6030 > 0,3015 = B
= 3, $y_{23} > y_{33}$ = 0,7559 > 0,7559 = B
= 4, $y_{24} > y_{34}$ = 1,1547 > 1,1547 = B
= 5, $y_{25} > y_{35}$ = 0,8000 > 0,8000 = B
= 6, $y_{26} > y_{36}$ = 0,8090 > 1,2136 = S
= 7, $y_{27} > y_{37}$ = 0,5963 > 0,5963 = B
= 8, $y_{28} > y_{38}$ = 0,2981 > 0,2981 = B

C_{24} = 1, $y_{21} > y_{41}$ = 1,5119 > 1,5119 = B
= 2, $y_{22} > y_{42}$ = 0,6030 > 1,2060 = S
= 3, $y_{23} > y_{43}$ = 0,7559 > 0,7559 = B
= 4, $y_{24} > y_{44}$ = 1,1547 > 1,7321 = S
= 5, $y_{25} > y_{45}$ = 0,8000 > 0,8000 = B
= 6, $y_{26} > y_{46}$ = 0,8090 > 1,6181 = S
= 7, $y_{27} > y_{47}$ = 0,5963 > 0,8944 = S
= 8, $y_{28} > y_{48}$ = 0,2981 > 0,5963 = S

C_{25} = 1, $y_{21} > y_{51}$ = 1,5119 > 1,5119 = B
= 2, $y_{22} > y_{52}$ = 0,6030 > 0,3015 = B
= 3, $y_{23} > y_{53}$ = 0,7559 > 0,7559 = B
= 4, $y_{24} > y_{54}$ = 1,1547 > 0,5774 = B
= 5, $y_{25} > y_{55}$ = 0,8000 > 0,4000 = B
= 6, $y_{26} > y_{56}$ = 0,8090 > 0,8090 = B
= 7, $y_{27} > y_{57}$ = 0,5963 > 0,5963 = B
= 8, $y_{28} > y_{58}$ = 0,2981 > 0,2981 = B

C_{26} = 1, $y_{21} > y_{61}$ = 1,5119 > 1,5119 = B
= 2, $y_{22} > y_{62}$ = 0,6030 > 0,6030 = B
= 3, $y_{23} > y_{63}$ = 0,7559 > 0,7559 = B
= 4, $y_{24} > y_{64}$ = 1,1547 > 0,5774 = B
= 5, $y_{25} > y_{65}$ = 0,8000 > 0,8000 = B
= 6, $y_{26} > y_{66}$ = 0,8090 > 0,8090 = B
= 7, $y_{27} > y_{67}$ = 0,5963 > 0,5963 = B
= 8, $y_{28} > y_{68}$ = 0,2981 > 0,2981 = B

C_{27} = 1, $y_{21} > y_{71}$ = 1,5119 > 1,5119 = B
= 2, $y_{22} > y_{72}$ = 0,6030 > 0,9045 = S
= 3, $y_{23} > y_{73}$ = 0,7559 > 0,7559 = B
= 4, $y_{24} > y_{74}$ = 1,1547 > 1,1547 = B
= 5, $y_{25} > y_{75}$ = 0,8000 > 0,8000 = B
= 6, $y_{26} > y_{76}$ = 0,8090 > 1,2136 = S
= 7, $y_{27} > y_{77}$ = 0,5963 > 0,5963 = B
= 8, $y_{28} > y_{78}$ = 0,2981 > 0,2981 = B

C_{31} = 1, $y_{31} > y_{11}$ = 1,5119 > 1,5119 = B
= 2, $y_{32} > y_{12}$ = 0,3015 > 0,9045 = S
= 3, $y_{33} > y_{13}$ = 0,7559 > 0,7559 = B
= 4, $y_{34} > y_{14}$ = 1,1547 > 1,1547 = B

C_{32} = 1, $y_{31} > y_{21}$ = 1,5119 > 1,5119 = B
= 2, $y_{32} > y_{22}$ = 0,3015 > 0,6030 = S
= 3, $y_{33} > y_{23}$ = 0,7559 > 0,7559 = B
= 4, $y_{34} > y_{24}$ = 1,1547 > 1,1547 = B

= 5, $y_{35} > y_{15}$ = 0,8000 > 0,8000 = B
= 6, $y_{36} > y_{16}$ = 1,2136 > 1,2136 = B
= 7, $y_{37} > y_{17}$ = 0,5963 > 1,1926 = S
= 8, $y_{38} > y_{18}$ = 0,2981 > 0,4472 = S

= 5, $y_{35} > y_{25}$ = 0,8000 > 0,8000 = B
= 6, $y_{36} > y_{26}$ = 1,2136 > 0,8090 = B
= 7, $y_{37} > y_{27}$ = 0,5963 > 0,5963 = B
= 8, $y_{38} > y_{28}$ = 0,2981 > 0,2981 = B

C_{34} = 1, $y_{31} > y_{41}$ = 1,5119 > 1,5119 = B
= 2, $y_{32} > y_{42}$ = 0,3015 > 1,2060 = S
= 3, $y_{33} > y_{43}$ = 0,7559 > 0,7559 = B
= 4, $y_{34} > y_{44}$ = 1,1547 > 1,7321 = S
= 5, $y_{35} > y_{45}$ = 0,8000 > 0,8000 = B
= 6, $y_{36} > y_{46}$ = 1,2136 > 1,6181 = S
= 7, $y_{37} > y_{47}$ = 0,5963 > 0,8944 = S
= 8, $y_{38} > y_{48}$ = 0,2981 > 0,5963 = S

C_{35} = 1, $y_{31} > y_{51}$ = 1,5119 > 1,5119 = B
= 2, $y_{32} > y_{52}$ = 0,3015 > 0,3015 = B
= 3, $y_{33} > y_{53}$ = 0,7559 > 0,7559 = B
= 4, $y_{34} > y_{54}$ = 1,1547 > 0,5774 = B
= 5, $y_{35} > y_{55}$ = 0,8000 > 0,4000 = B
= 6, $y_{36} > y_{56}$ = 1,2136 > 0,8090 = B
= 7, $y_{37} > y_{57}$ = 0,5963 > 0,5963 = B
= 8, $y_{38} > y_{58}$ = 0,2981 > 0,2981 = B

C_{36} = 1, $y_{31} > y_{61}$ = 1,5119 > 1,5119 = B
= 2, $y_{32} > y_{62}$ = 0,3015 > 0,6030 = S
= 3, $y_{33} > y_{63}$ = 0,7559 > 0,7559 = B
= 4, $y_{34} > y_{64}$ = 1,1547 > 0,5774 = B
= 5, $y_{35} > y_{65}$ = 0,8000 > 0,8000 = B
= 6, $y_{36} > y_{66}$ = 1,2136 > 0,8090 = B
= 7, $y_{37} > y_{67}$ = 0,5963 > 0,5963 = B
= 8, $y_{38} > y_{68}$ = 0,2981 > 0,2981 = B

C_{37} = 1, $y_{31} > y_{71}$ = 1,5119 > 1,5119 = B
= 2, $y_{32} > y_{72}$ = 0,3015 > 0,9045 = S
= 3, $y_{33} > y_{73}$ = 0,7559 > 0,7559 = B
= 4, $y_{34} > y_{74}$ = 1,1547 > 1,1547 = B
= 5, $y_{35} > y_{75}$ = 0,8000 > 0,8000 = B
= 6, $y_{36} > y_{76}$ = 1,2136 > 1,2136 = B
= 7, $y_{37} > y_{77}$ = 0,5963 > 0,5963 = B
= 8, $y_{38} > y_{78}$ = 0,2981 > 0,2981 = B

C_{41} = 1, $y_{41} > y_{11}$ = 1,5119 > 1,5119 = B
= 2, $y_{42} > y_{12}$ = 1,2060 > 0,9045 = B
= 3, $y_{43} > y_{13}$ = 0,7559 > 0,7559 = B
= 4, $y_{44} > y_{14}$ = 1,7321 > 1,1547 = B
= 5, $y_{45} > y_{15}$ = 0,8000 > 0,8000 = B
= 6, $y_{46} > y_{16}$ = 1,6181 > 1,2136 = B
= 7, $y_{47} > y_{17}$ = 0,8944 > 1,1926 = S
= 8, $y_{48} > y_{18}$ = 0,5963 > 0,4472 = B

C_{42} = 1, $y_{41} > y_{21}$ = 1,5119 > 1,5119 = B
= 2, $y_{42} > y_{22}$ = 1,2060 > 0,6035 = B
= 3, $y_{43} > y_{23}$ = 0,7559 > 0,7559 = B
= 4, $y_{44} > y_{24}$ = 1,7321 > 1,1547 = B
= 5, $y_{45} > y_{25}$ = 0,8000 > 0,8000 = B
= 6, $y_{46} > y_{26}$ = 1,6181 > 0,8090 = B
= 7, $y_{47} > y_{27}$ = 0,8944 > 0,5963 = B
= 8, $y_{48} > y_{28}$ = 0,5963 > 0,2981 = B

C_{43} = 1, $y_{41} > y_{31}$ = 1,5119 > 1,5119 = B
= 2, $y_{42} > y_{32}$ = 1,2060 > 0,3015 = B
= 3, $y_{43} > y_{33}$ = 0,7559 > 0,7559 = B
= 4, $y_{44} > y_{34}$ = 1,7321 > 1,1547 = B
= 5, $y_{45} > y_{35}$ = 0,8000 > 0,8000 = B
= 6, $y_{46} > y_{36}$ = 1,6181 > 1,2136 = B
= 7, $y_{47} > y_{37}$ = 0,8944 > 0,5963 = S
= 8, $y_{48} > y_{38}$ = 0,5963 > 0,2981 = B

C_{45} = 1, $y_{41} > y_{51}$ = 1,5119 > 1,5119 = B
= 2, $y_{42} > y_{52}$ = 1,2060 > 0,3015 = B
= 3, $y_{43} > y_{53}$ = 0,7559 > 0,7559 = B
= 4, $y_{44} > y_{54}$ = 1,7321 > 0,5774 = B
= 5, $y_{45} > y_{55}$ = 0,8000 > 0,4000 = B
= 6, $y_{46} > y_{56}$ = 1,6181 > 0,8090 = B
= 7, $y_{47} > y_{57}$ = 0,8944 > 0,5963 = B
= 8, $y_{48} > y_{58}$ = 0,5963 > 0,2981 = B

C_{46} = 1, $y_{41} > y_{61}$ = 1,5119 > 1,5119 = B
= 2, $y_{42} > y_{62}$ = 1,2060 > 0,6030 = B
= 3, $y_{43} > y_{63}$ = 0,7559 > 0,7559 = B
= 4, $y_{44} > y_{64}$ = 1,7321 > 0,5774 = B
= 5, $y_{45} > y_{65}$ = 0,8000 > 0,8000 = B
= 6, $y_{46} > y_{66}$ = 1,6181 > 0,8090 = B
= 7, $y_{47} > y_{67}$ = 0,8944 > 0,5963 = B
= 8, $y_{48} > y_{68}$ = 0,5963 > 0,2981 = B

C_{47} = 1, $y_{41} > y_{71}$ = 1,5119 > 1,5119 = B
= 2, $y_{42} > y_{72}$ = 1,2060 > 0,9045 = B
= 3, $y_{43} > y_{73}$ = 0,7559 > 0,7559 = B
= 4, $y_{44} > y_{74}$ = 1,7321 > 1,1547 = B
= 5, $y_{45} > y_{75}$ = 0,8000 > 0,8000 = B
= 6, $y_{46} > y_{76}$ = 1,6181 > 1,2136 = B
= 7, $y_{47} > y_{77}$ = 0,8944 > 0,5963 = B
= 8, $y_{48} > y_{78}$ = 0,5963 > 0,2981 = B

C_{51} = 1, $y_{51} > y_{11}$ = 1,5119 > 1,5119 = B
= 2, $y_{52} > y_{12}$ = 0,3015 > 0,9045 = S
= 3, $y_{53} > y_{13}$ = 0,7559 > 0,7559 = B
= 4, $y_{54} > y_{14}$ = 0,5774 > 1,1547 = S
= 5, $y_{55} > y_{15}$ = 0,4000 > 0,8000 = S
= 6, $y_{56} > y_{16}$ = 0,8090 > 1,2136 = S
= 7, $y_{57} > y_{17}$ = 0,5963 > 1,1926 = S
= 8, $y_{58} > y_{18}$ = 0,2981 > 0,4472 = S

C_{52} = 1, $y_{51} > y_{21}$ = 1,5119 > 1,5119 = B
= 2, $y_{52} > y_{22}$ = 0,3015 > 0,6030 = S
= 3, $y_{53} > y_{23}$ = 0,7559 > 0,7559 = B
= 4, $y_{54} > y_{24}$ = 0,5774 > 1,1547 = S
= 5, $y_{55} > y_{25}$ = 0,4000 > 0,8000 = S
= 6, $y_{56} > y_{26}$ = 0,8090 > 0,8090 = B
= 7, $y_{57} > y_{27}$ = 0,5963 > 0,5963 = B
= 8, $y_{58} > y_{28}$ = 0,2981 > 0,2981 = B

C_{53} = 1, $y_{51} > y_{31}$ = 1,5119 > 1,5119 = B
= 2, $y_{52} > y_{32}$ = 0,3015 > 0,3015 = B
= 3, $y_{53} > y_{33}$ = 0,7559 > 0,7559 = B
= 4, $y_{54} > y_{34}$ = 0,5774 > 1,1547 = S
= 5, $y_{55} > y_{35}$ = 0,4000 > 0,8000 = S

C_{54} = 1, $y_{51} > y_{41}$ = 1,5119 > 1,5119 = B
= 2, $y_{52} > y_{42}$ = 0,3015 > 1,2060 = S
= 3, $y_{53} > y_{43}$ = 0,7559 > 0,7559 = B
= 4, $y_{54} > y_{44}$ = 0,5774 > 1,7321 = S
= 5, $y_{55} > y_{45}$ = 0,4000 > 0,8000 = S

= 6, $y_{56} > y_{36} = 0{,}8090 > 1{,}2136 = S$ = 6, $y_{56} > y_{46} = 0{,}8090 > 1{,}6181 = S$

= 7, $y_{57} > y_{37} = 0{,}5963 > 0{,}5963 = B$ = 7, $y_{57} > y_{47} = 0{,}5963 > 0{,}8944 = S$

= 8, $y_{58} > y_{38} = 0{,}2981 > 0{,}2981 = B$ = 8, $y_{58} > y_{48} = 0{,}2981 > 0{,}5963 = S$

C_{56} = 1, $y_{51} > y_{61} = 1{,}5119 > 1{,}5119 = B$ C_{57} = 1, $y_{51} > y_{71} = 1{,}5119 > 1{,}5119 = B$

= 2, $y_{52} > y_{62} = 0{,}3015 > 0{,}3015 = B$ = 2, $y_{52} > y_{72} = 0{,}3015 > 0{,}9045 = S$

= 3, $y_{53} > y_{63} = 0{,}7559 > 0{,}7559 = B$ = 3, $y_{53} > y_{73} = 0{,}7559 > 0{,}7559 = B$

= 4, $y_{54} > y_{64} = 0{,}5774 > 1{,}1547 = S$ = 4, $y_{54} > y_{74} = 0{,}5774 > 1{,}1547 = S$

= 5, $y_{55} > y_{65} = 0{,}4000 > 0{,}8000 = S$ = 5, $y_{55} > y_{75} = 0{,}4000 > 0{,}8000 = S$

= 6, $y_{56} > y_{66} = 0{,}8090 > 1{,}2136 = S$ = 6, $y_{56} > y_{76} = 0{,}8090 > 1{,}2136 = S$

= 7, $y_{57} > y_{67} = 0{,}5963 > 0{,}5963 = B$ = 7, $y_{57} > y_{77} = 0{,}5963 > 0{,}5963 = B$

= 8, $y_{58} > y_{68} = 0{,}2981 > 0{,}2981 = B$ = 8, $y_{58} > y_{78} = 0{,}2981 > 0{,}2981 = B$

C_{61} = 1, $y_{61} > y_{11} = 1{,}5119 > 1{,}5119 = B$ C_{62} = 1, $y_{61} > y_{21} = 1{,}5119 > 1{,}5119 = B$

= 2, $y_{62} > y_{12} = 0{,}6030 > 0{,}9045 = S$ = 2, $y_{62} > y_{22} = 0{,}6030 > 0{,}6030 = B$

= 3, $y_{63} > y_{13} = 0{,}7559 > 0{,}7559 = B$ = 3, $y_{63} > y_{23} = 0{,}7559 > 0{,}7559 = B$

= 4, $y_{64} > y_{14} = 0{,}5774 > 1{,}1547 = S$ = 4, $y_{64} > y_{24} = 0{,}5774 > 1{,}1547 = S$

= 5, $y_{65} > y_{15} = 0{,}8000 > 0{,}8000 = B$ = 5, $y_{65} > y_{25} = 0{,}8000 > 0{,}8000 = B$

= 6, $y_{66} > y_{16} = 0{,}8090 > 1{,}2136 = S$ = 6, $y_{66} > y_{26} = 0{,}8090 > 0{,}8090 = B$

= 7, $y_{67} > y_{17} = 0{,}5963 > 1{,}1926 = S$ = 7, $y_{67} > y_{27} = 0{,}5963 > 0{,}5963 = B$

= 8, $y_{68} > y_{18} = 0{,}2981 > 0{,}4472 = S$ = 8, $y_{68} > y_{28} = 0{,}2981 > 0{,}2981 = B$

C_{63} = 1, $y_{61} > y_{31} = 1{,}5119 > 1{,}5119 = B$ C_{64} = 1, $y_{61} > y_{41} = 1{,}5119 > 1{,}5119 = B$

= 2, $y_{62} > y_{32} = 0{,}6030 > 0{,}3015 = B$ = 2, $y_{62} > y_{42} = 0{,}6030 > 1{,}2060 = S$

= 3, $y_{63} > y_{33} = 0{,}7559 > 0{,}7559 = B$ = 3, $y_{63} > y_{43} = 0{,}7559 > 0{,}7559 = B$

= 4, $y_{64} > y_{34} = 0{,}5774 > 1{,}1547 = S$ = 4, $y_{64} > y_{44} = 0{,}5774 > 1{,}7321 = S$

= 5, $y_{65} > y_{35} = 0{,}8000 > 0{,}8000 = B$ = 5, $y_{65} > y_{45} = 0{,}8000 > 0{,}8000 = B$

= 6, $y_{66} > y_{36} = 0{,}8090 > 1{,}2136 = S$ = 6, $y_{66} > y_{46} = 0{,}8090 > 1{,}6181 = S$

= 7, $y_{67} > y_{37} = 0{,}5963 > 0{,}5963 = B$ = 7, $y_{67} > y_{47} = 0{,}5963 > 0{,}8944 = S$

= 8, $y_{68} > y_{38} = 0{,}2981 > 0{,}2981 = B$ = 8, $y_{68} > y_{48} = 0{,}2981 > 0{,}5963 = S$

C_{65} = 1, $y_{61} > y_{51} = 1{,}5119 > 1{,}5119 = B$ C_{67} = 1, $y_{61} > y_{71} = 1{,}5119 > 1{,}5119 = B$

= 2, $y_{62} > y_{52} = 0{,}6030 > 0{,}3015 = B$ = 2, $y_{62} > y_{72} = 0{,}6030 > 0{,}9045 = S$

= 3, $y_{63} > y_{53} = 0{,}7559 > 0{,}7559 = B$ = 3, $y_{63} > y_{73} = 0{,}7559 > 0{,}7559 = B$

= 4, $y_{64} > y_{54} = 0{,}5774 > 0{,}5774 = B$ = 4, $y_{64} > y_{74} = 0{,}5774 > 1{,}1547 = S$

= 5, $y_{65} > y_{55} = 0{,}8000 > 0{,}4000 = B$ = 5, $y_{65} > y_{75} = 0{,}8000 > 0{,}8000 = B$

= 6, $y_{66} > y_{56} = 0{,}8090 > 0{,}8090 = B$ = 6, $y_{66} > y_{76} = 0{,}8090 > 1{,}2136 = S$

= 7, $y_{67} > y_{57} = 0{,}5963 > 0{,}5963 = B$ = 7, $y_{67} > y_{77} = 0{,}5963 > 0{,}5963 = B$

= 8, $y_{68} > y_{58} = 0{,}2981 > 0{,}2981 = B$ = 8, $y_{68} > y_{78} = 0{,}2981 > 0{,}2981 = B$

$C_{71} = 1$, $y_{71} > y_{11} = 1{,}5119 > 1{,}5119 = B$ $C_{72} = 1$, $y_{71} > y_{21} = 1{,}5119 > 1{,}5119 = B$

= 2, $y_{72} > y_{12} = 0{,}9045 > 0{,}9045 = B$ = 2, $y_{72} > y_{22} = 0{,}9045 > 0{,}6030 = B$

= 3, $y_{73} > y_{13} = 0{,}7559 > 0{,}7559 = B$ = 3, $y_{73} > y_{23} = 0{,}7559 > 0{,}7559 = B$

= 4, $y_{74} > y_{14} = 1{,}1547 > 1{,}1547 = B$ = 4, $y_{74} > y_{24} = 1{,}1547 > 1{,}1547 = B$

= 5, $y_{75} > y_{15} = 0{,}8000 > 08000 = B$ = 5, $y_{75} > y_{25} = 0{,}8000 > 0{,}8000 = B$

= 6, $y_{76} > y_{16} = 1{,}2136 > 1{,}2136 = B$ = 6, $y_{76} > y_{26} = 1{,}2136 > 0{,}8090 = B$

= 7, $y_{77} > y_{17} = 0{,}5963 > 1{,}1926 = S$ = 7, $y_{77} > y_{27} = 0{,}5963 > 0{,}5963 = B$

= 8, $y_{78} > y_{18} = 0{,}2981 > 0{,}4472 = S$ = 8, $y_{78} > y_{28} = 0{,}2981 > 0{,}2981 = B$

$C_{73} = 1$, $y_{71} > y_{31} = 1{,}5119 > 1{,}5119 = B$ $C_{74} = 1$, $y_{71} > y_{41} = 1{,}5119 > 1{,}5119 = B$

= 2, $y_{72} > y_{32} = 0{,}9045 > 0{,}3015 = B$ = 2, $y_{72} > y_{42} = 0{,}9045 > 1{,}2060 = S$

= 3, $y_{73} > y_{33} = 0{,}7559 > 0{,}7559 = B$ = 3, $y_{73} > y_{43} = 0{,}7559 > 0{,}7559 = B$

= 4, $y_{74} > y_{34} = 1{,}1547 > 1{,}1547 = B$ = 4, $y_{74} > y_{44} = 1{,}1547 > 1{,}7321 = S$

= 5, $y_{75} > y_{35} = 0{,}8000 > 08000 = B$ = 5, $y_{75} > y_{45} = 0{,}8000 > 0{,}8000 = B$

= 6, $y_{76} > y_{36} = 1{,}2136 > 1{,}2136 = B$ = 6, $y_{76} > y_{46} = 1{,}2136 > 1{,}6181 = S$

= 7, $y_{77} > y_{37} = 0{,}5963 > 0{,}5963 = B$ = 7, $y_{77} > y_{47} = 0{,}5963 > 0{,}8944 = S$

= 8, $y_{78} > y_{38} = 0{,}2981 > 0{,}2981 = B$ = 8, $y_{78} > y_{48} = 0{,}2981 > 0{,}5963 = S$

$C_{75} = 1$, $y_{71} > y_{51} = 1{,}5119 > 1{,}5119 = B$ $C_{76} = 1$, $y_{71} > y_{61} = 1{,}5119 > 1{,}5119 = B$

= 2, $y_{72} > y_{52} = 0{,}9045 > 0{,}3015 = B$ = 2, $y_{72} > y_{62} = 0{,}9045 > 0{,}6030 = B$

= 3, $y_{73} > y_{53} = 0{,}7559 > 0{,}7559 = B$ = 3, $y_{73} > y_{63} = 0{,}7559 > 0{,}7559 = B$

= 4, $y_{74} > y_{54} = 1{,}1547 > 0{,}5774 = B$ = 4, $y_{74} > y_{64} = 1{,}1547 > 0{,}5774 = B$

= 5, $y_{75} > y_{55} = 0{,}8000 > 04000 = B$ = 5, $y_{75} > y_{65} = 0{,}8000 > 0{,}8000 = B$

= 6, $y_{76} > y_{56} = 1{,}2136 > 0{,}8090 = B$ = 6, $y_{76} > y_{66} = 1{,}2136 > 0{,}8090 = B$

= 7, $y_{77} > y_{57} = 0{,}5963 > 0{,}5963 = B$ = 7, $y_{77} > y_{67} = 0{,}5963 > 0{,}5963 = B$

= 8, $y_{78} > y_{58} = 0{,}2981 > 0{,}2981 = B$ = 8, $y_{78} > y_{68} = 0{,}2981 > 0{,}2981 = B$

Setelah membandingkan membandingkan alternatif (y_{kj}) dengan alternatif (y_{lj}) berikut adalah hasil himpunan *corcodence.*

Tabel 3.11 Himpunan *Corcodence*

Ckl	Himpunan	Ckl	Himpunan
C12	{1,2,3,4,5,6,7,8}	C45	{1,2,3,4,5,6,7,8}
C13	{1,2,3,4,5,6,7,8}	C46	{1,2,3,4,5,6,7,8}
C14	{1,3,5,7}	C47	{1,2,3,4,5,6,7,8}
C15	{1,2,3,4,5,6,7,8}	C51	{1,3}
C16	{1,2,3,4,5,6,7,8}	C52	{1,3,6,7,8}
C17	{1,2,3,4,5,6,7,8}	C53	{1,2,3,7,8}
C21	{1,3,4,5}	C54	{1,3}
C23	{1,2,3,4,5,7,8}	C56	{1,3,4,6,7,8}
C24	{1,3,5}	C57	{1,3,7,8}
C25	{1,2,3,4,5,6,7,8}	C61	{1,3,5}
C26	{1,2,3,4,5,6,7,8}	C62	{1,2,3,5,6,7,8}
C27	{1,3,4,5,7,8}	C63	{1,2,3,5,7,8}
C31	{1,3,4,5,6}	C64	{1,3,5}
C32	{1,3,4,5,6,7,8}	C65	{1,2,3,4,5,6,7,8}
C34	{1,3,5}	C67	{1,3,5,7,8}
C35	{1,2,3,4,5,6,7,8}	C71	{1,2,3,4,5,6}
C36	{1,3,4,5,6,7,8}	C72	{1,2,3,4,5,6,7,8}
C37	{1,3,4,5,6,7,8}	C73	{1,2,3,4,5,6,7,8}
C41	{1,2,3,4,5,6,8}	C74	{1,3,5}
C42	{1,2,3,4,5,6,7,8}	C75	{1,2,3,4,5,6,7,8}
C43	{1,2,3,4,5,6,7,8}	C76	{1,2,3,4,5,6,7,8}

Langkah yang keempat adalah menetukan matriks *concordance.* Untuk menetukan nilai dari elemen-elemen pada matriks *concordance* adalah dengan menjumlahkan bobot-bobot (w = 4,2,2,3,2,3,2,1) yang termasuk dalam himpunan bagian *concordance,* secara matematisnya adalah sebagai berikut:

$$c_{kl} = \sum_{j \in C_{kl}} w_j \text{ , untuk j=1,2,3,…,n}$$

Tabel 3.12 Menghitung Matriks *Corcodence*

Ckl	Hasil	Ckl	Hasil
C12	19	C45	19
C13	19	C46	19
C14	10	C47	19
C15	19	C51	6
C16	19	C52	12
C17	19	C53	11
C21	11	C54	6
C23	16	C56	15
C24	8	C57	9
C25	19	C61	8
C26	19	C62	16
C27	14	C63	13
C31	14	C64	8
C32	17	C65	19
C34	8	C67	11
C35	19	C71	16
C36	17	C72	19
C37	17	C73	19
C41	17	C74	8
C42	19	C75	19
C43	19	C76	19

maka hasil dari matriks C adalah sebagai berikut :

$$C = \begin{vmatrix} - & 19 & 10 & 19 & 19 & 19 & 19 \\ 11 & - & 16 & 8 & 19 & 19 & 14 \\ 14 & 17 & - & 8 & 19 & 17 & 17 \\ 17 & 19 & 19 & - & 19 & 19 & 19 \\ 6 & 12 & 11 & 6 & - & 15 & 9 \\ 8 & 16 & 13 & 8 & 19 & - & 11 \\ 16 & 19 & 19 & 8 & 19 & 19 & - \end{vmatrix}$$

Selanjutnya menentukan himpunan *discordence,* dengan cara membandingkan alternatif (y_{kj}) lebih kecil dari alternatif (y_{lj}) maka disimbolkan dengan (B), dan apabila alternatif (y_{kj}) lebih besar dari alternatif (y_{lj}) maka

disimbolkan dengan (S) dan tidak masuk sebagai himpunan *discordance,* dirumuskan sebagai berikut :dengan cara sebagai berikut :

$$D_{kl} = \{ j \mid y_{kj} < y_{lj} \}$$; untuk j=1,2,3,…,n

D_{12} = 1, $y_{11} < y_{21}$ = 1,5119 < 1,5119 = B
= 2, $y_{12} < y_{22}$ = 0,9045 < 0,6030 = S
= 3, $y_{13} < y_{23}$ = 0,7559 < 0,7559 = B
= 4, $y_{14} < y_{24}$ = 1,1547 < 1,1547 = B
= 5, $y_{15} < y_{25}$ = 0,8000 < 0,8000 = B
= 6, $y_{16} < y_{26}$ = 1,2136 < 0,8090 = S
= 7, $y_{17} < y_{27}$ = 1,1926 < 0,5963 = S
= 8, $y_{18} < y_{28}$ = 0,4472 < 0,2981 = S

D_{13} = 1, $y_{11} < y_{31}$ = 1,5119 < 1,5119 = B
= 2, $y_{12} < y_{32}$ = 0,9045 < 0,3015 = S
= 3, $y_{13} < y_{33}$ = 0,7559 < 0,7559 = B
= 4, $y_{14} < y_{34}$ = 1,1547 < 1,1547 = B
= 5, $y_{15} < y_{35}$ = 0,8000 < 0,8000 = B
= 6, $y_{16} < y_{36}$ = 1,2136 < 1,2136 = B
= 7, $y_{17} < y_{37}$ = 1,1926 < 0,5963 = S
= 8, $y_{18} < y_{38}$ = 0,4472 < 0,2981 = S

D_{14} = 1, $y_{11} < y_{41}$ = 1,5119 < 1,5119 = B
= 2, $y_{12} < y_{42}$ = 0,9045 < 1,2060 = B
= 3, $y_{13} < y_{43}$ = 0,7559 < 0,7559 = B
= 4, $y_{14} < y_{44}$ = 1,1547 < 1,7321 = B
= 5, $y_{15} < y_{45}$ = 0,8000 < 0,8000 = B
= 6, $y_{16} < y_{46}$ = 1,2136 < 1,6181 = B
= 7, $y_{17} < y_{47}$ = 1,1926 < 0,8944 = S
= 8, $y_{18} < y_{48}$ = 0,4472 < 0,5963 = B

D_{15}= 1, $y_{11} < y_{51}$ = 1,5119 < 1,5119 = B
= 2, $y_{12} < y_{52}$ = 0,9045 < 0,3015 = S
= 3, $y_{13} < y_{53}$ = 0,7559 < 0,7559 = B
= 4, $y_{14} < y_{54}$ = 1,1547 < 0,5774 = S
= 5, $y_{15} < y_{55}$ = 0,8000 < 0,4000 = S
= 6, $y_{16} < y_{56}$ = 1,2136 < 0,8090 = S
= 7, $y_{17} < y_{57}$ = 1,1926 < 0,5963 = S
= 8, $y_{18} < y_{58}$ = 0,4472 < 0,2981 = S

D_{16} = 1, $y_{11} < y_{61}$ = 1,5119 < 1,5119 = B
= 2, $y_{12} < y_{62}$ = 0,9045 < 0,6030 = S
= 3, $y_{13} < y_{63}$ = 0,7559 < 0,7559 = B
= 4, $y_{14} < y_{64}$ = 1,1547 < 0,5774 = S
= 5, $y_{15} < y_{65}$ = 0,8000 < 0,8000 = B
= 6, $y_{16} < y_{66}$ = 1,2136 < 0,8090 = S
= 7, $y_{17} < y_{67}$ = 1,1926 < 0,5963 = S
= 8, $y_{18} < y_{68}$ = 0,4472 < 0,2981 = S

D_{17} = 1, $y_{11} < y_{71}$ = 1,5119 < 1,5119 = B
= 2, $y_{12} < y_{72}$ = 0,9045 < 0,9045 = B
= 3, $y_{13} < y_{73}$ = 0,7559 < 0,7559 = B
= 4, $y_{14} < y_{74}$ = 1,1547 < 1,1547 = B
= 5, $y_{15} < y_{75}$ = 0,8000 < 0,8000 = B
= 6, $y_{16} < y_{76}$ = 1,2136 < 1,2136 = B
= 7, $y_{17} < y_{77}$ = 1,1926 < 0,5963 = S
= 8, $y_{18} < y_{78}$ = 0,4472 < 0,2981 = S

D_{21} = 1, $y_{21} < y_{11}$ = 1,5119 < 1,5119 = B
= 2, $y_{22} < y_{12}$ = 0,6030 < 0,9045 = B

D_{23}= 1, $y_{21} < y_{31}$ = 1,5119 < 1,5119 = B
= 2, $y_{22} < y_{32}$ = 0,6030 < 0,3015 = S

= 3, $y_{23} < y_{13} = 0{,}7559 < 0{,}7559 = B$ = 3, $y_{23} < y_{33} = 0{,}7559 < 0{,}7559 = B$

= 4, $y_{24} < y_{14} = 1{,}1547 < 1{,}1547 = B$ = 4, $y_{24} < y_{34} = 1{,}1547 < 1{,}1547 = B$

= 5, $y_{25} < y_{15} = 0{,}8000 < 0{,}8000 = B$ = 5, $y_{25} < y_{35} = 0{,}8000 < 0{,}8000 = B$

= 6, $y_{26} < y_{16} = 0{,}8090 < 1{,}2136 = B$ = 6, $y_{26} < y_{36} = 0{,}8090 < 1{,}2136 = B$

= 7, $y_{27} < y_{17} = 0{,}5963 < 1{,}1926 = B$ = 7, $y_{27} < y_{37} = 0{,}5963 < 0{,}5963 = B$

= 8, $y_{28} < y_{18} = 0{,}2981 < 0{,}4472 = B$ = 8, $y_{28} < y_{38} = 0{,}2981 < 0{,}2981 = B$

D_{24} = 1, $y_{21} < y_{41} = 1{,}5119 < 1{,}5119 = B$ D_{25} = 1, $y_{21} < y_{51} = 1{,}5119 < 1{,}5119 = B$

= 2, $y_{22} < y_{42} = 0{,}6030 < 1{,}2060 = B$ = 2, $y_{22} < y_{52} = 0{,}6030 < 0{,}3015 = S$

= 3, $y_{23} < y_{43} = 0{,}7559 < 0{,}7559 = B$ = 3, $y_{23} < y_{53} = 0{,}7559 < 0{,}7559 = B$

= 4, $y_{24} < y_{44} = 1{,}1547 < 1{,}7321 = B$ = 4, $y_{24} < y_{54} = 1{,}1547 < 1{,}1547 = S$

= 5, $y_{25} < y_{45} = 0{,}8000 < 0{,}8000 = B$ = 5, $y_{25} < y_{55} = 0{,}8000 < 0{,}4000 = S$

= 6, $y_{26} < y_{46} = 0{,}8090 < 1{,}6181 = B$ = 6, $y_{26} < y_{56} = 0{,}8090 < 0{,}8090 = B$

= 7, $y_{27} < y_{47} = 0{,}5963 < 0{,}8944 = B$ = 7, $y_{27} < y_{57} = 0{,}5963 < 0{,}5963 = B$

= 8, $y_{28} < y_{48} = 0{,}2981 < 0{,}5963 = B$ = 8, $y_{28} < y_{58} = 0{,}2981 < 0{,}2981 = B$

D_{26} = 1, $y_{21} < y_{61} = 1{,}5119 < 1{,}5119 = B$ D_{27} = 1, $y_{21} < y_{71} = 1{,}5119 < 1{,}5119 = B$

= 2, $y_{22} < y_{62} = 0{,}6030 < 0{,}6030 = B$ = 2, $y_{22} < y_{72} = 0{,}6030 < 0{,}9045 = B$

= 3, $y_{23} < y_{63} = 0{,}7559 < 0{,}7559 = B$ = 3, $y_{23} < y_{73} = 0{,}7559 < 0{,}7559 = B$

= 4, $y_{24} < y_{64} = 1{,}1547 < 0{,}5574 = S$ = 4, $y_{24} < y_{74} = 1{,}1547 < 1{,}1547 = B$

= 5, $y_{25} < y_{65} = 0{,}8000 < 0{,}8000 = B$ = 5, $y_{25} < y_{75} = 0{,}8000 < 0{,}8000 = B$

= 6, $y_{26} < y_{66} = 0{,}8090 < 0{,}8090 = B$ = 6, $y_{26} < y_{76} = 0{,}8090 < 1{,}2136 = B$

= 7, $y_{27} < y_{67} = 0{,}5963 < 0{,}5963 = B$ = 7, $y_{27} < y_{77} = 0{,}5963 < 0{,}5963 = B$

= 8, $y_{28} < y_{68} = 0{,}2981 < 0{,}2981 = B$ = 8, $y_{28} < y_{78} = 0{,}2981 < 0{,}2981 = B$

D_{31} = 1, $y_{31} < y_{11} = 1{,}5119 < 1{,}5119 = B$ D_{32} = 1, $y_{31} < y_{21} = 1{,}5119 < 1{,}5119 = B$

= 2, $y_{32} < y_{12} = 0{,}3015 < 0{,}9045 = B$ = 2, $y_{32} < y_{22} = 0{,}3015 < 0{,}6030 = B$

= 3, $y_{33} < y_{13} = 0{,}7559 < 0{,}7559 = B$ = 3, $y_{33} < y_{23} = 0{,}7559 < 0{,}7559 = B$

= 4, $y_{34} < y_{14} = 1{,}1547 < 1{,}1547 = B$ = 4, $y_{34} < y_{24} = 1{,}1547 < 1{,}1547 = B$

= 5, $y_{35} < y_{15} = 0{,}8000 < 0{,}8000 = B$ = 5, $y_{35} < y_{25} = 0{,}8000 < 0{,}8000 = B$

= 6, $y_{36} < y_{16} = 1{,}2136 < 1{,}2136 = B$ = 6, $y_{36} < y_{26} = 1{,}2136 < 0{,}8090 = S$

= 7, $y_{37} < y_{17} = 0{,}5963 < 1{,}1926 = B$ = 7, $y_{37} < y_{27} = 0{,}5963 < 0{,}5963 = B$

= 8, $y_{38} < y_{18} = 0{,}2981 < 0{,}4472 = B$ = 8, $y_{38} < y_{28} = 0{,}2981 < 0{,}2981 = B$

D_{34} = 1, $y_{31} < y_{41}$ = 1,5119 < 1,5119 = B
= 2, $y_{32} < y_{42}$ = 0,3015 < 1,2060 = B
= 3, $y_{33} < y_{43}$ = 0,7559 < 0,7559 = B
= 4, $y_{34} < y_{44}$ = 1,1547 < 1,7321 = B
= 5, $y_{35} < y_{45}$ = 0,8000 < 0,8000 = B
= 6, $y_{36} < y_{46}$ = 1,2136 < 1,6181 = B
= 7, $y_{37} < y_{47}$ = 0,5963 < 0,8944 = B
= 8, $y_{38} < y_{48}$ = 0,2981 < 0,5963 = B

D_{35} = 1, $y_{31} < y_{51}$ = 1,5119 < 1,5119 = B
= 2, $y_{32} < y_{52}$ = 0,3015 < 0,3015 = B
= 3, $y_{33} < y_{53}$ = 0,7559 < 0,7559 = B
= 4, $y_{34} < y_{54}$ = 1,1547 < 0,5774 = S
= 5, $y_{35} < y_{55}$ = 0,8000 < 0,4000 = S
= 6, $y_{36} < y_{56}$ = 1,2136 < 0,8090 = S
= 7, $y_{37} < y_{57}$ = 0,5963 < 0,5963 = B
= 8, $y_{38} < y_{58}$ = 0,2981 < 0,2981 = B

D_{36} = 1, $y_{31} < y_{61}$ = 1,5119 < 1,5119 = B
= 2, $y_{32} < y_{62}$ = 0,3015 < 0,6030 = B
= 3, $y_{33} < y_{63}$ = 0,7559 < 0,7559 = B
= 4, $y_{34} < y_{64}$ = 1,1547 < 0,5774 = S
= 5, $y_{35} < y_{65}$ = 0,8000 < 0,8000 = B
= 6, $y_{36} < y_{66}$ = 1,2136 < 0,8090 = S
= 7, $y_{37} < y_{67}$ = 0,5963 < 0,5963 = B
= 8, $y_{38} < y_{68}$ = 0,2981 < 0,2981 = B

D_{37} = 1, $y_{31} < y_{71}$ = 1,5119 < 1,5119 = B
= 2, $y_{32} < y_{72}$ = 0,3015 < 0,9045 = B
= 3, $y_{33} < y_{73}$ = 0,7559 < 0,7559 = B
= 4, $y_{34} < y_{74}$ = 1,1547 < 1,1547 = B
= 5, $y_{35} < y_{75}$ = 0,8000 < 0,8000 = B
= 6, $y_{36} < y_{76}$ = 1,2136 < 1,2136 = B
= 7, $y_{37} < y_{77}$ = 0,5963 < 0,5963 = B
= 8, $y_{38} < y_{78}$ = 0,2981 < 0,2981 = B

D_{41} = 1, $y_{41} < y_{11}$ = 1,5119 < 1,5119 = B
= 2, $y_{42} < y_{12}$ = 1,2060 < 0,9045 = S
= 3, $y_{43} < y_{13}$ = 0,7559 < 0,7559 = B
= 4, $y_{44} < y_{14}$ = 1,7321 < 1,1547 = S
= 5, $y_{45} < y_{15}$ = 0,8000 < 0,8000 = B
= 6, $y_{46} < y_{16}$ = 1,6181 < 1,2136 = S
= 7, $y_{47} < y_{17}$ = 0,8944 < 1,1926 = B
= 8, $y_{48} < y_{18}$ = 0,5963 < 0,4472 = S

D_{42} = 1, $y_{41} < y_{21}$ = 1,5119 < 1,5119 = B
= 2, $y_{42} < y_{22}$ = 1,2060 < 0,6030 = S
= 3, $y_{43} < y_{23}$ = 0,7559 < 0,7559 = B
= 4, $y_{44} < y_{24}$ = 1,7321 < 1,1547 = S
= 5, $y_{45} < y_{25}$ = 0,8000 < 0,8000 = B
= 6, $y_{46} < y_{26}$ = 1,6181 < 0,8090 = S
= 7, $y_{47} < y_{27}$ = 0,8944 < 0,5963 = S
= 8, $y_{48} < y_{28}$ = 0,5963 < 0,2981 = S

D_{43} = 1, $y_{41} < y_{31}$ = 1,5119 < 1,5119 = B
= 2, $y_{42} < y_{32}$ = 1,2060 < 0,3015 = S
= 3, $y_{43} < y_{33}$ = 0,7559 < 0,7559 = B
= 4, $y_{44} < y_{34}$ = 1,7321 < 1,1547 = S
= 5, $y_{45} < y_{35}$ = 0,8000 < 0,8000 = B

D_{45} = 1, $y_{41} < y_{51}$ = 1,5119 < 1,5119 = B
= 2, $y_{42} < y_{52}$ = 1,2060 < 0,3015 = S
= 3, $y_{43} < y_{53}$ = 0,7559 < 0,7559 = B
= 4, $y_{44} < y_{54}$ = 1,7321 < 0,5744 = S
= 5, $y_{45} < y_{55}$ = 0,8000 < 0,4000 = S

= 6, $y_{46} < y_{36} = 1,6181 < 1,2136 = S$ = 6, $y_{46} < y_{56} = 1,6181 < 0,8090 = S$

= 7, $y_{47} < y_{37} = 0,8944 < 0,5963 = S$ = 7, $y_{47} < y_{57} = 0,8944 < 0,5963 = S$

= 8, $y_{48} < y_{38} = 0,5963 < 0,2981 = S$ = 8, $y_{48} < y_{58} = 0,5963 < 0,2981 = S$

D_{46} = 1, $y_{41} < y_{61} = 1,5119 < 1,5119 = B$ D_{47} = 1, $y_{41} < y_{71} = 1,5119 < 1,5119 = B$

= 2, $y_{42} < y_{62} = 1,2060 < 0,6030 = S$ = 2, $y_{42} < y_{72} = 1,2060 < 0,9045 = S$

= 3, $y_{43} < y_{63} = 0,7559 < 0,7559 = B$ = 3, $y_{43} < y_{73} = 0,7559 < 0,7559 = B$

= 4, $y_{44} < y_{64} = 1,7321 < 0,5774 = S$ = 4, $y_{44} < y_{74} = 1,7321 < 1,1547 = S$

= 5, $y_{45} < y_{65} = 0,8000 < 0,8000 = B$ = 5, $y_{45} < y_{75} = 0,8000 < 0,8000 = B$

= 6, $y_{46} < y_{66} = 1,6181 < 0,8090 = S$ = 6, $y_{46} < y_{76} = 1,6181 < 1,2136 = S$

= 7, $y_{47} < y_{67} = 0,8944 < 0,5963 = S$ = 7, $y_{47} < y_{77} = 0,8944 < 0,5963 = S$

= 8, $y_{48} < y_{68} = 0,5963 < 0,2981 = S$ = 8, $y_{48} < y_{78} = 0,5963 < 0,2981 = S$

D_{51} = 1, $y_{51} < y_{11} = 1,5119 < 1,5119 = B$ D_{52} = 1, $y_{51} < y_{11} = 1,5119 < 1,5119 = B$

= 2, $y_{52} < y_{12} = 0,3015 < 0,9045 = B$ = 2, $y_{52} < y_{12} = 0,3015 < 0,6030 = B$

= 3, $y_{53} < y_{13} = 0,7559 < 0,7559 = B$ = 3, $y_{53} < y_{13} = 0,7559 < 0,7559 = B$

= 4, $y_{54} < y_{14} = 0,5774 < 1,1547 = B$ = 4, $y_{54} < y_{14} = 0,5774 < 1,1547 = B$

= 5, $y_{55} < y_{15} = 0,4000 < 0,8000 = B$ = 5, $y_{55} < y_{15} = 0,4000 < 0,8000 = B$

= 6, $y_{56} < y_{16} = 0,8090 < 1,2136 = B$ = 6, $y_{56} < y_{16} = 0,8090 < 0,8090 = B$

= 7, $y_{57} < y_{17} = 0,5963 < 1,1926 = B$ = 7, $y_{57} < y_{17} = 0,5963 < 0,5963 = B$

= 8, $y_{58} < y_{18} = 0,2981 < 0,4472 = B$ = 8, $y_{58} < y_{18} = 0,2981 < 0,2981 = B$

D_{53} = 1, $y_{51} < y_{31} = 1,5119 < 1,5119 = B$ D_{54} = 1, $y_{51} < y_{41} = 1,5119 < 1,5119 = B$

= 2, $y_{52} < y_{32} = 0,3015 < 0,3015 = B$ = 2, $y_{52} < y_{42} = 0,3015 < 1,2060 = B$

= 3, $y_{53} < y_{33} = 0,7559 < 0,7559 = B$ = 3, $y_{53} < y_{43} = 0,7559 < 0,7559 = B$

= 4, $y_{54} < y_{34} = 0,5774 < 1,1547 = B$ = 4, $y_{54} < y_{44} = 0,5774 < 1,7321 = B$

= 5, $y_{55} < y_{35} = 0,4000 < 0,8000 = B$ = 5, $y_{55} < y_{45} = 0,4000 < 0,8000 = B$

= 6, $y_{56} < y_{36} = 0,8090 < 1,2136 = B$ = 6, $y_{56} < y_{46} = 0,8090 < 1,6181 = B$

= 7, $y_{57} < y_{37} = 0,5963 < 0,5963 = B$ = 7, $y_{57} < y_{47} = 0,5963 < 0,8944 = B$

= 8, $y_{58} < y_{38} = 0,2981 < 0,2981 = B$ = 8, $y_{58} < y_{48} = 0,2981 < 0,5963 = B$

D_{56} = 1, $y_{51} < y_{61} = 1,5119 < 1,5119 = B$ D_{57} = 1, $y_{51} < y_{71} = 1,5119 < 1,5119 = B$

= 2, $y_{52} < y_{62} = 0,3015 < 0,6030 = B$ = 2, $y_{52} < y_{72} = 0,3015 < 0,9045 = B$

= 3, $y_{53} < y_{63} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{54} < y_{64} = 0{,}5774 < 0{,}5774 = B$
= 5, $y_{55} < y_{65} = 0{,}4000 < 0{,}8000 = B$
= 6, $y_{56} < y_{66} = 0{,}8090 < 0{,}8090 = B$
= 7, $y_{57} < y_{67} = 0{,}5963 < 0{,}5963 = B$
= 8, $y_{58} < y_{68} = 0{,}2981 < 0{,}2981 = B$

= 3, $y_{53} < y_{73} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{54} < y_{74} = 0{,}5774 < 1{,}1547 = B$
= 5, $y_{55} < y_{75} = 0{,}4000 < 0{,}8000 = B$
= 6, $y_{56} < y_{76} = 0{,}8090 < 1{,}2136 = B$
= 7, $y_{57} < y_{77} = 0{,}5963 < 0{,}5963 = B$
= 8, $y_{58} < y_{78} = 0{,}2981 < 0{,}2981 = B$

$D_{61} = 1$, $y_{61} < y_{11} = 1{,}5119 < 1{,}5119 = B$
= 2, $y_{62} < y_{12} = 0{,}6030 < 0{,}9045 = B$
= 3, $y_{63} < y_{13} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{64} < y_{14} = 0{,}5774 < 1{,}1547 = B$
= 5, $y_{65} < y_{15} = 0{,}8000 < 0{,}8000 = B$
= 6, $y_{66} < y_{16} = 0{,}8090 < 1{,}2136 = B$
= 7, $y_{67} < y_{17} = 0{,}5963 < 1{,}1926 = B$
= 8, $y_{68} < y_{18} = 0{,}2981 < 0{,}4472 = B$

$D_{62} = 1$, $y_{61} < y_{21} = 1{,}5119 < 1{,}5119 = B$
= 2, $y_{62} < y_{22} = 0{,}6030 < 0{,}6030 = B$
= 3, $y_{63} < y_{23} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{64} < y_{24} = 0{,}5774 < 1{,}1547 = B$
= 5, $y_{65} < y_{25} = 0{,}8000 < 0{,}8000 = B$
= 6, $y_{66} < y_{26} = 0{,}8090 < 0{,}8090 = B$
= 7, $y_{67} < y_{27} = 0{,}5963 < 0{,}5963 = B$
= 8, $y_{68} < y_{28} = 0{,}2981 < 0{,}2981 = B$

$D_{63} = 1$, $y_{61} < y_{31} = 1{,}5119 < 1{,}5119 = B$
= 2, $y_{62} < y_{32} = 0{,}6030 < 0{,}3015 = B$
= 3, $y_{63} < y_{33} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{64} < y_{34} = 0{,}5774 < 1{,}1547 = B$
= 5, $y_{65} < y_{35} = 0{,}8000 < 0{,}8000 = B$
= 6, $y_{66} < y_{36} = 0{,}8090 < 1{,}2136 = B$
= 7, $y_{67} < y_{37} = 0{,}5963 < 0{,}5963 = B$
= 8, $y_{68} < y_{38} = 0{,}2981 < 0{,}2981 = B$

$D_{64} = 1$, $y_{61} < y_{41} = 1{,}5119 < 1{,}5119 = B$
= 2, $y_{62} < y_{42} = 0{,}6030 < 1{,}2060 = B$
= 3, $y_{63} < y_{43} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{64} < y_{44} = 0{,}5774 < 1{,}7321 = B$
= 5, $y_{65} < y_{45} = 0{,}8000 < 0{,}8000 = B$
= 6, $y_{66} < y_{46} = 0{,}8090 < 1{,}6181 = B$
= 7, $y_{67} < y_{47} = 0{,}5963 < 0{,}8944 = B$
= 8, $y_{68} < y_{48} = 0{,}2981 < 0{,}5963 = B$

$D_{65} = 1$, $y_{61} < y_{51} = 1{,}5119 < 1{,}5119 = B$
= 2, $y_{62} < y_{52} = 0{,}6030 < 0{,}3015 = S$
= 3, $y_{63} < y_{53} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{64} < y_{54} = 0{,}5774 < 0{,}5774 = B$
= 5, $y_{65} < y_{55} = 0{,}8000 < 0{,}4000 = S$
= 6, $y_{66} < y_{56} = 0{,}8090 < 0{,}8090 = B$
= 7, $y_{67} < y_{57} = 0{,}5963 < 0{,}5963 = B$
= 8, $y_{68} < y_{58} = 0{,}2981 < 0{,}2981 = B$

$D_{67} = 1$, $y_{61} < y_{71} = 1{,}5119 < 1{,}5119 = B$
= 2, $y_{62} < y_{72} = 0{,}6030 < 0{,}9045 = B$
= 3, $y_{63} < y_{73} = 0{,}7559 < 0{,}7559 = B$
= 4, $y_{64} < y_{74} = 0{,}5774 < 1{,}1547 = B$
= 5, $y_{65} < y_{75} = 0{,}8000 < 0{,}8000 = B$
= 6, $y_{66} < y_{76} = 0{,}8090 < 1{,}2136 = B$
= 7, $y_{67} < y_{77} = 0{,}5963 < 0{,}5963 = B$
= 8, $y_{68} < y_{78} = 0{,}2981 < 0{,}2981 = B$

D_{71} = 1, $y_{71} < y_{11}$ = 1,5119 < 1,5119 = B
= 2, $y_{72} < y_{12}$ = 0,9045 < 0,9045 = B
= 3, $y_{73} < y_{13}$ = 0,7559 < 0,7559 = B
= 4, $y_{74} < y_{14}$ = 1,1547 < 1,1547 = B
= 5, $y_{75} < y_{15}$ = 0,8000 < 0,8000 = B
= 6, $y_{76} < y_{16}$ = 1,2136 < 1,2136 = B
= 7, $y_{77} < y_{17}$ = 0,5963 < 1,1926 = B
= 8, $y_{78} < y_{18}$ = 0,2981 < 0,4472 = B

D_{72} = 1, $y_{71} < y_{21}$ = 1,5119 < 1,5119 = B
= 2, $y_{72} < y_{22}$ = 0,9045 < 0,6030 = S
= 3, $y_{73} < y_{23}$ = 0,7559 < 0,7559 = B
= 4, $y_{74} < y_{24}$ = 1,1547 < 1,1547 = B
= 5, $y_{75} < y_{25}$ = 0,8000 < 0,8000 = B
= 6, $y_{76} < y_{26}$ = 1,2136 < 0,8090 = S
= 7, $y_{77} < y_{27}$ = 0,5963 < 0,5963 = B
= 8, $y_{78} < y_{28}$ = 0,2981 < 0,2981 = B

D_{73} = 1, $y_{71} < y_{31}$ = 1,5119 < 1,5119 = B
= 2, $y_{72} < y_{32}$ = 0,9045 < 0,3015 = S
= 3, $y_{73} < y_{33}$ = 0,7559 < 0,7559 = B
= 4, $y_{74} < y_{34}$ = 1,1547 < 1,1547 = B
= 5, $y_{75} < y_{35}$ = 0,8000 < 0,8000 = B
= 6, $y_{76} < y_{36}$ = 1,2136 < 1,2136 = B
= 7, $y_{77} < y_{37}$ = 0,5963 < 0,5963 = B
= 8, $y_{78} < y_{38}$ = 0,2981 < 0,2981 = B

D_{74} = 1, $y_{71} < y_{41}$ = 1,5119 < 1,5119 = B
= 2, $y_{72} < y_{42}$ = 0,9045 < 1,2060 = B
= 3, $y_{73} < y_{43}$ = 0,7559 < 0,7559 = B
= 4, $y_{74} < y_{44}$ = 1,1547 < 1,7321 = B
= 5, $y_{75} < y_{45}$ = 0,8000 < 0,8000 = B
= 6, $y_{76} < y_{46}$ = 1,2136 < 1,6181 = B
= 7, $y_{77} < y_{47}$ = 0,5963 < 0,8944 = B
= 8, $y_{78} < y_{48}$ = 0,2981 < 0,5963 = B

D_{75} = 1, $y_{71} < y_{51}$ = 1,5119 < 1,5119 = B
= 2, $y_{72} < y_{52}$ = 0,9045 < 0,3015 = S
= 3, $y_{73} < y_{53}$ = 0,7559 < 0,7559 = B
= 4, $y_{74} < y_{54}$ = 1,1547 < 0,5774 = S
= 5, $y_{75} < y_{55}$ = 0,8000 < 0,4000 = S
= 6, $y_{76} < y_{56}$ = 1,2136 < 0,8090 = S
= 7, $y_{77} < y_{57}$ = 0,5963 < 0,5963 = B
= 8, $y_{78} < y_{58}$ = 0,2981 < 0,2981 = B

D_{76} = 1, $y_{71} < y_{61}$ = 1,5119 < 1,5119 = B
= 2, $y_{72} < y_{62}$ = 0,9045 < 0,6030 = S
= 3, $y_{73} < y_{63}$ = 0,7559 < 0,7559 = B
= 4, $y_{74} < y_{64}$ = 1,1547 < 0,5774 = S
= 5, $y_{75} < y_{65}$ = 0,8000 < 0,8000 = B
= 6, $y_{76} < y_{66}$ = 1,2136 < 0,8090 = S
= 7, $y_{77} < y_{67}$ = 0,5963 < 0,5963 = B
= 8, $y_{78} < y_{68}$ = 0,2981 < 0,2981 = B

Setelah membandingkan membandingkan alternatif (y_{kj}) dengan alternatif (y_{lj}) berikut adalah hasil himpunan *discordence.*

Tabel 3.13 Himpunan *Discordence*

Ckl	Himpunan	Ckl	Himpunan
D12	{1,3,4,5}	D45	{1,3}
D13	{1,3,4,5,6}	D46	{1,3,5}
D14	{1,2,3,4,5,6,8}	D47	{1,3,5}
D15	{1,3}	D51	{1,2,3,4,5,6,7,8}
D16	{1,3,5}	D52	{1,2,3,4,5,6,7,8}
D17	{1,2,3,4,5,6}	D53	{1,2,3,4,5,6,7,8}
D21	{1,2,3,4,5,6,7,8}	D54	{1,2,3,4,5,6,7,8}
D23	{1,3,4,5,6,7,8}	D56	{1,2,3,4,5,6,7,8}
D24	{1,2,3,4,5,6,7,8}	D57	{1,2,3,4,5,6,7,8}
D25	{1,3,6,7,8}	D61	{1,2,3,4,5,6,7,8}
D26	{1,2,3,5,6,7,8}	D62	{1,2,3,4,5,6,7,8}
D27	{1,2,3,4,5,6,7,8}	D63	{1,3,4,5,6,7,8}
D31	{1,2,3,4,5,6,7,8}	D64	{1,2,3,4,5,6,7,8}
D32	{1,2,3,4,5,7,8}	D65	{1,3,4,6,7,8}
D34	{1,2,3,4,5,6,7,8}	D67	{1,2,3,4,5,6,7,8}
D35	{1,2,3,7,8}	D71	{1,2,3,4,5,6,7,8}
D36	{1,2,3,5,7,8}	D72	{1,3,4,5,7,8}
D37	{1,2,3,4,5,6,7,8}	D73	{1,3,4,5,6,7,8}
D41	{1,3,5,7}	D74	{1,2,3,4,5,6,7,8}
D42	{1,3,5}	D75	{1,3,7,8}
D43	{1,3,5}	D76	{1,3,5,7,8}

Selanjutnya mencari matriks D yaitu matriks *discordance,* untuk menetukan nilai dari elemen-elemen pada matriks *discordance* adalah dengan membagi maksimum selisih nilai kriteria yang termasuk dalam himpunan bagian *discordance* dengan maksimum selisih nilai seluruh kriteria yang ada, secara matematisnya adalah sebagai berikut (Triantaphyllou dkk, 1998):

$$d_{kl} = \frac{\max\{|y_{kj} - y_{lj}|\}_{j \in D_{kl}}}{\max\{|y_{kj} - y_{lj}|\}_{\forall_j}}$$

Berikut adalah perhitungan matriks *discordance* :

$$d_{12} = \frac{\max\{|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0{,}3015|;|0|;|0|;|0|;|-0{,}4045|;|-0.5963|;|-0.1419|\}} = \frac{0}{-0.5963} = 0$$

$$d_{13} = \frac{\max\{|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0{,}6030|;|0|;|0|;|0|;|0|;|-0.5963|;|-0.1419|\}} = \frac{0}{-0.6030} = 0$$

$$d_{14} = \frac{\max\{|0|;|0{,}3015|;|0,|;|0{,}5774|;|0|;|0{,}4045|;|-0{,}2981|;|0{,}1491|\}}{\max\{|0|;|0{,}3015|;|0,|;|0{,}5774|;|0|;|0{,}4045|;|-0{,}2981|;|0{,}1491|\}} = \frac{0{,}5774}{0{,}5774} = 1$$

$$d_{15} = \frac{\max\{|0|;|0|\}}{\max\{|0|;|-0{,}6030|;|0,|;|-0{,}5774|;|-0{,}4000|;|-0{,}4045|;|-5963|;|-0{,}1491|\}} = \frac{0}{-0{,}6030} = 0$$

$$d_{16} = \frac{\max\{|0|;|0|;|0|\}}{\max\{|0|;|-0{,}3015|;|0,|;|-0{,}5774|;|0|;|-0{,}4045|;|-5963|;|-0{,}1491|\}} = \frac{0}{-0{,}5963} = 0$$

$$d_{17} = \frac{\max\{|0|;|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|0|;|0,|;|0,|;|0|;|0|;|-5963|;|-0{,}1491|\}} = \frac{0}{-0{,}5963} = 0$$

$$d_{21} = \frac{\max\{|0|;|0{,}3015|;|0|;|0|;|0|;|0{,}4045|;|0{,}5963|;|0{,}1491|\}}{\max\{|0|;|0{,}3015|;|0|;|0|;|0|;|0{,}4045|;|0{,}5963|;|0{,}1491|\}} = \frac{0{,}5963}{0{,}5963} = 1$$

$$d_{23} = \frac{\max\{|0|;|0|;|0|;|0|;|0{,}4045|;|0|;|0|\}}{\max\{|0|;|-0{,}3015|;|0|;|0|;|0|;|0{,}4045|;|0|;|0|\}} = \frac{0{,}4045}{0{,}4045} = 1$$

$$d_{24} = \frac{\max\{|0|;|0{,}6030|;|0|;|0{,}5774|;|0|;|0{,}8090|;|0{,}2981|;|0{,}2981|\}}{\max\{|0|;|0{,}6030|;|0|;|0{,}5774|;|0|;|0{,}8090|;|0{,}2981|;|0{,}2981|\}} = \frac{0{,}8090}{0{,}8090} = 1$$

$$d_{25} = \frac{\max\{|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0{,}3015|;|0|;-|0{,}5774|;|-0{,}4000|;|0|;|0|;|0|\}} = \frac{0}{-0.5774} = 0$$

$$d_{26} = \frac{\max\{|0|;|0|;|0|;|0|;|0;|0|;|0|\}}{\max\{|0|;|0|;|0|;|-0{,}5774|;|0|;|0|;|0|;|0|\}} = \frac{0}{-0.5774} = 0$$

$$d_{27} = \frac{\max\{|0|;|0{,}3015|;|0|;|0|;|0|;|0{,}4045|;|0|;|0|\}}{\max\{|0|;|0{,}3015|;|0|;|0|;|0|;|0{,}4045|;|0|;|0|\}} = \frac{0{,}4045}{0{,}4045} = 1$$

$$d_{31} = \frac{\max\{|0|;|0{,}6030|;|0|;|0|;|0|;|0|;|0|;|0{,}5963|;|0{,}1491|\}}{\max\{|0|;|0{,}6030|;|0|;|0|;|0|;|0|;|0|;|0{,}5963|;|0{,}1491|\}} = \frac{0{,}6035}{0{,}6035} = 1$$

$$d_{32} = \frac{\max\{|0|;|0{,}3015|;|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|0|;|0|;|0|;|0|;|0|;|-0{,}4045|;|0|;|0|\}} = \frac{0{,}3015}{-0{,}4045} = -1$$

$$d_{34} = \frac{\max\{|0|;|0{,}9045|;|0|;|0{,}5774|;|0|;|0{,}4045|;|0{,}2981|;|0{,}2981|\}}{\max\{|0|;|0{,}9045|;|0|;|0{,}5774|;|0|;|0{,}4045|;|0{,}2981|;|0{,}2981|\}} = \frac{0{,}9045}{0{,}9045} = 1$$

$$d_{35} = \frac{\max\{|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|0|;|0|;|-0{,}5774|;|-0{,}4000|;|-0{,}4045|;|0|;|0|\}} = \frac{0}{-0{,}5774} = 0$$

$$d_{36} = \frac{\max\{|0|;|0{,}3015|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|0{,}3015|;|0|;|-0{,}5774|;|0|;|-0{,}4045|;|0|;|0|\}} = \frac{0{,}3015}{0{,}3015} = 1$$

$$d_{34} = \frac{\max\{|0|;|0{,}6030|;|0|;|0|;|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|0{,}6030|;|0|;|0|;|0|;|0|;|0|;|0|;|0|\}} = \frac{0{,}6030}{0{,}6030} = 1$$

$$d_{41} = \frac{\max\{|0|;|0|;|0|;|0{,}2981|\}}{\max\{|0|;|-0{,}9045|;|0|;|-0{,}5774|;|0|;|-0{,}4045|;|0{,}2981|;|-0{,}1491|\}} = \frac{0{,}2981}{0{,}2981} = 1$$

$$d_{42} = \frac{\max\{|0|;|0|;|0|\}}{\max\{|0|;|-0{,}6030|;|0|;|-0{,}5774|;|0|;|-0{,}8090|;|0{,}2981|;|-0{,}2981|\}} = \frac{0}{-0{,}8090} = 0$$

$$d_{43} = \frac{\max\{|0|;|0|;|0|\}}{\max\{|0|;|-0,9045|;|0|;|-0,5774|;|0|;|-0,4045|;|0,2981|;|-0,2981|\}} = \frac{0}{-0,9045} = 0$$

$$d_{45} = \frac{\max\{|0|;|0|\}}{\max\{|0|;|-0,9045|;|0|;|-0,5774|;|-0,4000|;|-0,8090|;|0,2981|;|-0,2981|\}} = \frac{0}{-0,9045} = 0$$

$$d_{46} = \frac{\max\{|0|;|0|;|0|\}}{\max\{|0|;|-0,6030|;|0|;|-1,1547|;|0|;|-0,8090|;|0,2981|;|-0,2981|\}} = \frac{0}{-1,1547} = 0$$

$$d_{47} = \frac{\max\{|0|;|0|;|0|\}}{\max\{|0|;|-0,3015|;|0|;|-0,5774|;|0|;|-0,4045|;|0,2981|;|-0,2981|\}} = \frac{0}{-0,5774} = 0$$

$$d_{51} = \frac{\max\{|0|;|0,6030|;|0|;|0,5774|;|0,4000|;|0,4045|;|0,5963|;|0,1491|\}}{\max\{|0|;|0,6030|;|0|;|0,5774|;|0,4000|;|0,4045|;|0,5963|;|0,1491|\}} = \frac{0,6030}{0,6030} = 1$$

$$d_{52} = \frac{\max\{|0|;|0,3015|;|0|;|0,5774|;|0,4000|;|0|;|0|;|0|\}}{\max\{|0|;|0,3015|;|0|;|0,5774|;|0,4000|;|0|;|0|;|0|\}} = \frac{0,5774}{0,5774} = 1$$

$$d_{53} = \frac{\max\{|0|;|0|;|0|;|0,5774|;|0,4000|;|0,4045|;|0|;|0|\}}{\max\{|0|;|0|;|0|;|0,5774|;|0,4000|;|0,4045|;|0|;|0|\}} = \frac{0,5774}{0,5774} = 1$$

$$d_{54} = \frac{\max\{|0|;|0,9045|;|0|;|1,1547|;|0,4000|;|0,8090|;|0,2981|;|0,2981|\}}{\max\{|0|;|0,9045|;|0|;|1,1547|;|0,4000|;|0,8090|;|0,2981|;|0,2981|\}} = \frac{1,1547}{1,1547} = 1$$

$$d_{56} = \frac{\max\{|0|;|0,3015|;|0|;|0|;|0,4000|;|0|;|0|;|0|\}}{\max\{|0|;|0,3015|;|0|;|0|;|0,4000|;|0|;|0|;|0|\}} = \frac{0,4000}{0,4000} = 1$$

$$d_{57} = \frac{\max\{|0|;|0,6030|;|0|;|0,5774|;|0,4000|;|0,4045|;|0|;|0|\}}{\max\{|0|;|0,6030|;|0|;|0,5774|;|0,4000|;|0,4045|;|0|;|0|\}} = \frac{0,6030}{0,6030} = 1$$

$$d_{61} = \frac{\max\{|0|;|0,3015|;|0|;|0,5774|;|0|;|0,4045|;|0,5963|;|0,1491|\}}{\max\{|0|;|0,3015|;|0|;|0,5774|;|0|;|0,4045|;|0,5963|;|0,1491|\}} = \frac{0,5963}{0,5963} = 1$$

$$d_{61} = \frac{\max\{|0|;|0|;|0|;|0,5774|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|0|;|0|;|0,5774|;|0|;|0|;|0|;|0|\}} = \frac{0,5774}{0,5774} = 1$$

$$d_{63} = \frac{\max\{|0|;|0|;|0,5774|;|0|;|0,4045|;|0|;|0|\}}{\max\{|0|;|-0,3015|;|0|;|0,5774|;|0|;|0,4045|;|0|;|0|\}} = \frac{0,5774}{0,5774} = 1$$

$$d_{64} = \frac{\max\{|0|;|0,6030|;|0|;|1,1547|;|0|;|0,8090|;|0,2981|;|0,2981|\}}{\max\{|0|;|0,6030|;|0|;|1,1547|;|0|;|0,8090|;|0,2981|;|0,2981|\}} = \frac{1,1547}{1,1547} = 1$$

$$d_{65} = \frac{\max\{|0|;|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0,3015|;|0|;|0|;|-0,4000|;|0|;|0|;|01|\}} = \frac{0}{-0,4000} = 0$$

$$d_{67} = \frac{\max\{|0|;|0,3015|;|0|;|0,5774|;|0|;|0,4045|;|0|;|0|\}}{\max\{|0|;|0,3015|;|0|;|0,5774|;|0|;|0,4045|;|0|;|0|\}} = \frac{0,5774}{0,5774} = 1$$

$$d_{71} = \frac{\max\{|0|;|0|;|0|;|0|;|0|;|0|;|0|;|0,5963|;|0,1491|\}}{\max\{|0|;|0|;|0|;|0|;|0|;|0|;|0|;|0,5963|;|0,1491|\}} = \frac{0,5963}{0,5963} = 1$$

$$d_{72} = \frac{\max\{|0|;|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0,3015|;|0|;|0|;|0|;|-0,4045|;|0|;|0|\}} = \frac{0}{-0,4045} = 0$$

$$d_{73} = \frac{\max\{|0|;|0|;|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0{,}6030|;|0|;|0|;|0|;|0|;|0|;|0|\}} = \frac{0}{-0{,}6030} = 0$$

$$d_{74} = \frac{\max\{|0|;|0{,}3015|;|0|;|05774|;|0|;|0{,}4045|;|0{,}2981|;|0{,}2981|\}}{\max\{|0|;|0{,}3015|;|0|;|05774|;|0|;|0{,}4045|;|0{,}2981|;|0{,}2981|\}} = \frac{0{,}5774}{0{,}5774} = 1$$

$$d_{75} = \frac{\max\{|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0{,}6030|;|0|;|-0{,}5774|;|-0{,}4000|;|-0{,}4045|;|0|;|0|\}} = \frac{0}{-0{,}6030} = 0$$

$$d_{76} = \frac{\max\{|0|;|0|;|0|;|0|;|0|\}}{\max\{|0|;|-0{,}3015|;|0|;|-0{,}5774|;|0|;|-0{,}4045|;|0|;|0|\}} = \frac{0}{-0{,}5774} = 0$$

maka matriks *discordance* adalah :

$$D = \begin{vmatrix} - & 0 & 0 & 1 & 0 & 0 & 0 \\ 1 & - & 1 & 1 & 0 & 0 & 1 \\ 1 & 0 & - & 1 & 0 & 0 & 1 \\ 0 & 0 & 0 & - & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 & - & 1 & 1 \\ 1 & 1 & 1 & 1 & 0 & - & 1 \\ 1 & 0 & 0 & 1 & 0 & 0 & - \end{vmatrix}$$

Matriks *corcodence* dan *discordance* telah diketahui maka selanjutnya dilakukan perhitunagn untuk mencari matriks F. Matriks F diperoleh dari membandingkan setiap elemen matriks *corcodence* dengan nilai *threshold*. Nilai *threshold* untuk matriks *corcodence* adalah sebagai berikut:

$$\begin{aligned} c = {} & 19 + 19 + 10 + 19 + 19 + 19 + 11 + 14 + 8 + 19 + 19 + 17 + 17 + 17 \\ & + 8 + 19 + 17 + 17 + 19 + 19 + 19 + 19 + 19 + 19 + 6 + 12 \\ & + 11 + 6 + 15 + 9 + 8 + 16 + 13 + 8 + 19 + 11 + 16 + 19 \\ & + 19 + 8 + 19 + 19 = \frac{634}{7(7-1)} = \frac{634}{42} = 15{,}10 \end{aligned}$$

maka diperoleh matriks F sebagai berikut :

$$F = \begin{vmatrix} - & 1 & 1 & 0 & 1 & 1 & 1 \\ 0 & - & 1 & 0 & 1 & 1 & 0 \\ 0 & 1 & - & 0 & 1 & 1 & 1 \\ 1 & 1 & 1 & - & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 & - & 1 & 0 \\ 0 & 1 & 0 & 0 & 1 & - & 0 \\ 1 & 1 & 1 & 0 & 1 & 1 & - \end{vmatrix}$$

kemudian dilakukan perhitungan untuk mencari matriks G, dengan membandingkan nilai setiap elemen matriks *discordance* dengan nilai *threshold* dari matriks *discordance.*

Nilai *threshold* untuk matriks *discorcodence* adalah sebagai berikut:

$$d = 0+0+1+0+0+0+1+1+1+0+0+1+1+1+1+0+1+1$$
$$+1+0+0+0+0+0+1+1+1+1+1+1+1+1+1$$
$$+1+0+0 = \frac{22}{7(7-1)} = \frac{22}{42} = 0{,}52$$

maka diperoleh matriks G sebagai berikut :

$$G = \begin{vmatrix} - & 0 & 0 & 1 & 0 & 0 & 0 \\ 1 & - & 1 & 1 & 0 & 0 & 1 \\ 1 & 1 & - & 1 & 0 & 1 & 1 \\ 1 & 0 & 0 & - & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 & - & 1 & 1 \\ 1 & 1 & 1 & 1 & 0 & - & 1 \\ 1 & 0 & 0 & 1 & 0 & 0 & - \end{vmatrix}$$

Setelah diketahui matriks F dan matriks G, selanjutnya mencari matriks E yang diperoleh dari perkalian antara matriks F dengan matriks G, maka diperoleh nilai matriks E sebagai berikut:

$$E = \begin{vmatrix} - & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & - & 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & - & 0 & 0 & 1 & 1 \\ 1 & 0 & 0 & - & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & - & 1 & 0 \\ 0 & 1 & 1 & 0 & 0 & - & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & - \end{vmatrix}$$

Matriks E merupakan matriks terakhir yang merekomendasikan bahwa alternatif ketiga dan altenatif keenam adalah alternatif yang paling dominan dibanding alternatif lainnya.

Dari perhitungan manual metode *Electre* alternatif ketiga yaitu "New Avanza 1.3 G M/T Basic" yang paling dominan, berikut adalah tabel hasil perangkingan :

Tabel 3.14 Hasil Perangkingan

0	A1
1	A2
3	A3
1	A4
1	A5
1	A6
1	A7

Keterangan :

A1 = New Avanzaa 1.3 E STD M/T

A2 = New Avanza 1.3 Veloz M/T

A3 = New Avanza 1.3 G M/T Basic

A4 = New Agya 1.0 G M/T

A5 = New Agya 1.2 G M/T

A6 = New Agya 1.2 G M/T TRD

A7 = New Yaris G CVT

Untuk mengetahui kebenaran pada aplikasi yang telah dibuat menghasilkan keluaran yang sesuai dengan rancangan, maka perlu dilakukan perbandingan antara hasil *output* proses pada sistem dengan perhitungan manual. Jika keluaran yang dihasilkan pada perhitungan secara manual berbeda dengan *output* pada aplikasi, maka dapat disimpulkan bahwa terjadi kesalahan pada proses implementasi sehingga akan dilakukan perbaikan kembali. Namun, jika *output* yang dihasilkan pada perhitungan aplikasi dan manual sama, maka dapat disimpulkan bahwa proses implementasi tersebut telah berhasil.

3.4 Perancangan Sistem

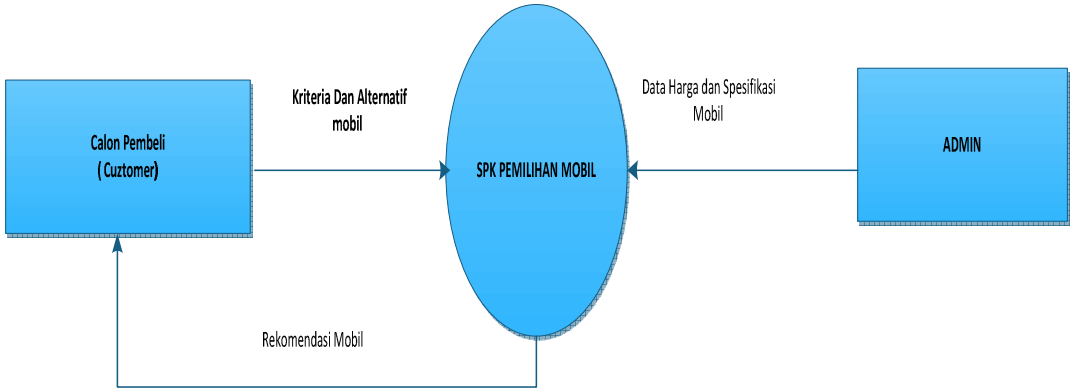
Perancangan sistem adalah merancang atau mendesain suatu sistem yang baik, yang isinya adalah langkah-langkah operasi dalam proses pengolahan data dan prosedur untuk mendukung sistem operasi.

Menurut Jogiyanto. HM (1991), dalam bukunya yang berjudul Analisis dan Desain Sistem, perancangan sistem dapat diartikan sebagai berikut :

1) Tahap setelah analisis dari siklus pengembangan sistem.
2) Pendefinisian dari kebutuhan-kebutuhan fungsional.
3) Persiapan untuk rancang bangun implementasi.
4) Menggambarkan bagaimana suatu sistem dibentuk.
5) Yang dapat berupa penggambaran perencanaan dan pembuatan sketsa atau pengaturan dari beberapa elemen yang terpisah ke dalam satu kesatuan yang utuh dan berfungsi.
6) Termasuk mengkonfigurasi dari komponen perangkat keras dari suatu sistem.

3.4.1 Diagram Konteks

Diagram konteks merupakan gambaran sebuah alur sistem, dan dibawah ini merupakan alur sistem pendukung keputusan pembelian mobil. Berikut diagram konteks dapat dilihat pada **Gambar 3.3** dibawah ini.



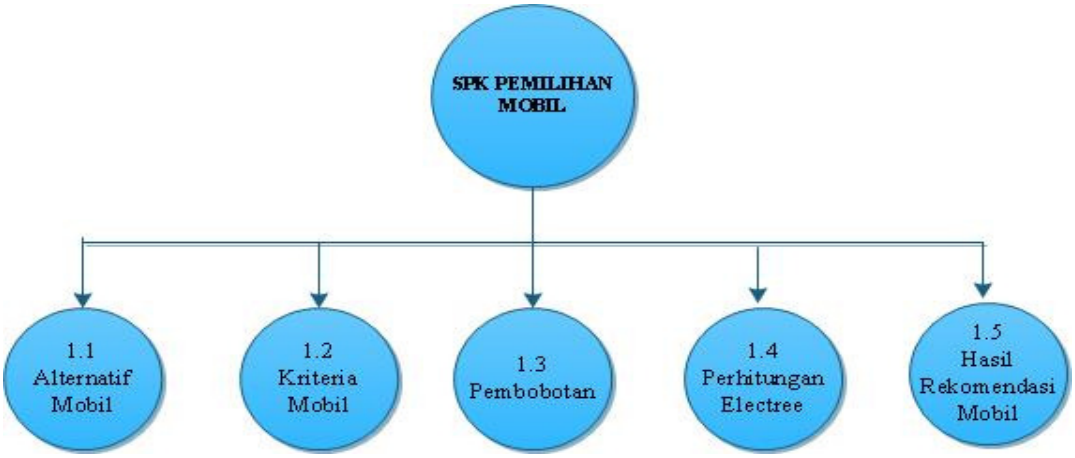
Gambar 3.2 Diagram Konteks Aplikasi

Keterangan :

1. Admin menginputkan data Harga dan Spesifikasi mobil
2. Calon pembeli memilih beberapa mobil yang sesuai kebutuhannya untuk diproses oleh sistem
3. Sistem memberikan rekomendasi mobil yang paling sesuai untuk calon pembeli tersebut.

3.4.2 Diagram Berjenjang

Diagaram Berjenjang untuk Sistem Pendukung Keputusan Pemilihan Mobil adalah sebagai berikut :

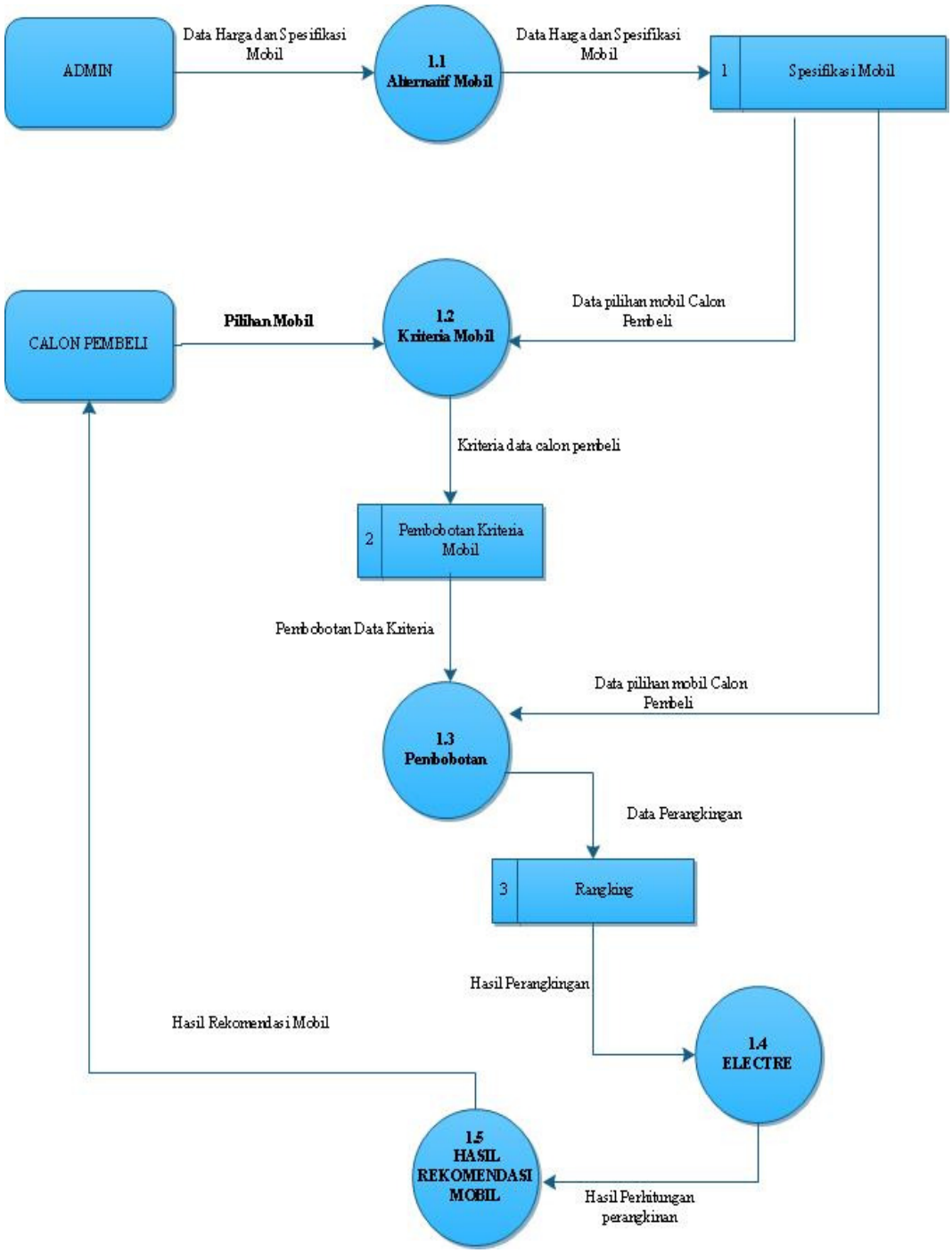


Gambar 3.3 Diagram Berjenjang Aplikasi Sistem Pendukung Keputusan Pemilihan Mobil Menggunakan Metode *Electree*

Dalam gambar 3.4 dapat dijelaskan sebagai berikut :

- Top Level : Aplikasi Sistem Pendukung Keputusan Pemilihan Mobil
- Level 0 : 1.1 Alternatif Mobil
  1.2 Kriteria Mobil
  1.3 Pembobotan
  1.4 Perhitungan Electre
  1.5 Hasil Rekomendasi mobil

3.4.3 DFD Level 0 Sistem



Gambar 3.4 DFD Level 0 Sistem Berjenjang Aplikasi Sistem Pendukung Keputusan Pemilihan Mobil Menggunakan Metode *Electree*

Keterangan :

1. Admin menginputkan data harga dan spesifikasi mobil kedalam sistem.
2. Calon pembeli memilih beberapa mobil yang sesuai kebutuhannya untuk kemudian diproses dengan metode *Electre* hingga menghasilkan *output* berupa rekomendasi mobil yang paling sesuai dengan kebutuhan calon pembeli.

3.5 Struktur Tabel

Struktur tabel merupakan susunan tabel yang ada pada database yang tersimpan pada komputer. Struktur tabel berfungsi sebagai penyusun tabel yang telah dibuat.

3.5.1 Tabel *User* (Admin)

Tabel *User* (Admin) ini digunakan pemilik sistem atau *stekholder* untuk mengedit atau menambah data pada sistem pendukung keputuan pemilihan mobil.

Tabel 3.15 Tabel *User* (Admin)

No	Nama Field	Type Data	Lenght	Keterangan
1	Id_user	INT	3	Primary
2	User	Varchar	20	
3	Password	Char	40	

3.5.2 Tabel Spesifikasi Mobil

Tabel ini berisi kriteria – kriteria mobil beserta spesifikasi yang nantinya akan dipilih oleh calon pembeli.

Tabel 3.16 Tabel Spesifikasi Mobil

No	Nama Field	Type Data	Lenght	Keterangan
1	Id_mobil	INT	5	Primary
2	Nama mobil	Varchar	10	
3	Merk	Varchar	10	
4	Tipe	Varchar	10	
5	Jenis	Varchar	10	
6	Harga	Varchar	10	
7	Transmisi	Varchar	10	
8	Isi silinder	Varchar	10	
9	Ukuran bahan bakar	Varchar	10	
10	Kapasitas penumpang	Varchar	10	
11	Ukuran beban maksimum	Varchar	10	
12	Kapasitas mesin	Varchar	10	
13	Beban maksimum	Varchar	10	
14	Warna	Varchar	10	
15	Gambar	Varchar	10	
16	Keterangan	Varchar	10	

3.5.3 Tabel Pembobotan

Tabel ini adalah table pemberian nilai bobot pada setiap kriteria.

Tabel 3.17 Tabel Pembobotan

No	Nama Field	Type Data	Lenght	Keterangan
1	Id pembobotan	Varchar	30	Primary
2	Id mobil	INT	2	
3	F1	INT	2	
4	F2	INT	2	
5	F3	INT	2	
6	F4	INT	2	
7	F5	INT	2	
8	F6	INT	2	
9	F7	INT	2	
10	F8	INT	2	

3.5.4 Tabel Penilaian

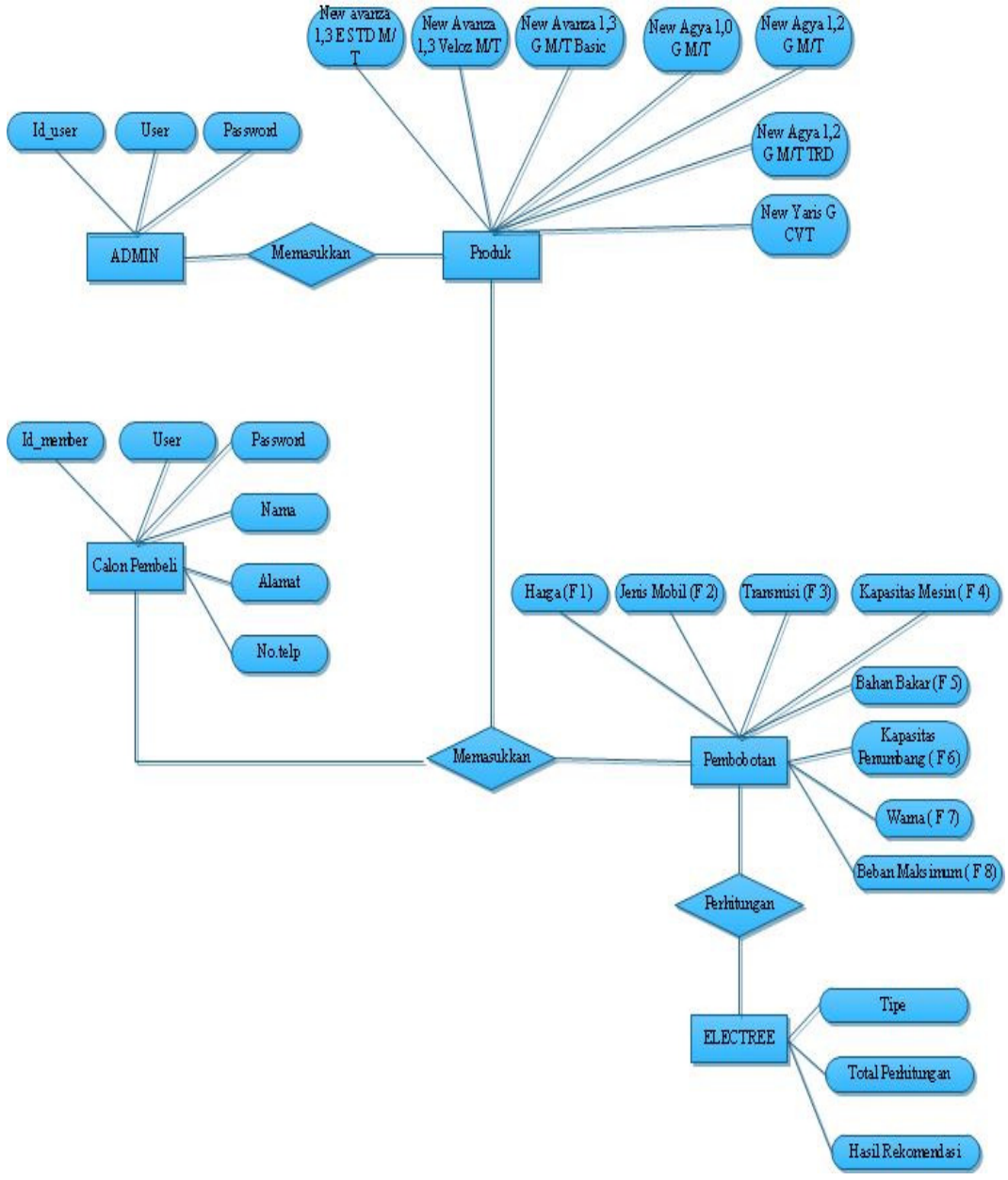
Tabel ini berisi tentang penilaian kepuasan pelanggan, dari hasil Rekomendasi mobil yang dihasilkan.

Tabel 3.18 Tabel Penilaian

No	Nama Field	Type Data	Lenght	Keterangan
1	Id penilaian	Varchar	20	Primary
2	Kriteria	INT	11	
3	Puas	INT	10	
4	Tidak puas	INT	10	

3.6 ERD (*Entity Relation Diagram*)

Konsep data model merupakan bentuk data yang masih dikonsep untuk direalisasikan dengan tabel-tabel yang lain dan data ini bukan merupakan tabel pada keadaan yang sebenarnya karena masih perlu dilakukan proses *generic* untuk menjadi tabel yang sesuai dengan sebenarnya. Karena masih konsep maka kunci-kunci relasi dari tabel yang lain belum di masukkan diagram ERD *database*yang dirancang dapat dilihat pada Gambar 3.5



Gambar 3.5 ERD (*Entity Relation Diagram*)

3.7 Analisis Kebutuhan Sistem

1. Kebutuhan Perangkat Keras

Perangkat keras adalah alat yang digunakan utnuk menunjang dalam pembuatan sistem. Dalam pembuatan sistem ini perangkat keras yang digunakan yaitu laptop atau komputer dengan spesifikasi :

a. Processor Intel Pentium 2.00 Ghs
b. RAM 2 GB
c. HDD 250 GB
d. *Monitor* 14”
e. Mouse
f. Hardisk Minimal 40 GB atau lebih
g. Printer

2. Kebutuhan Perangkat Lunak

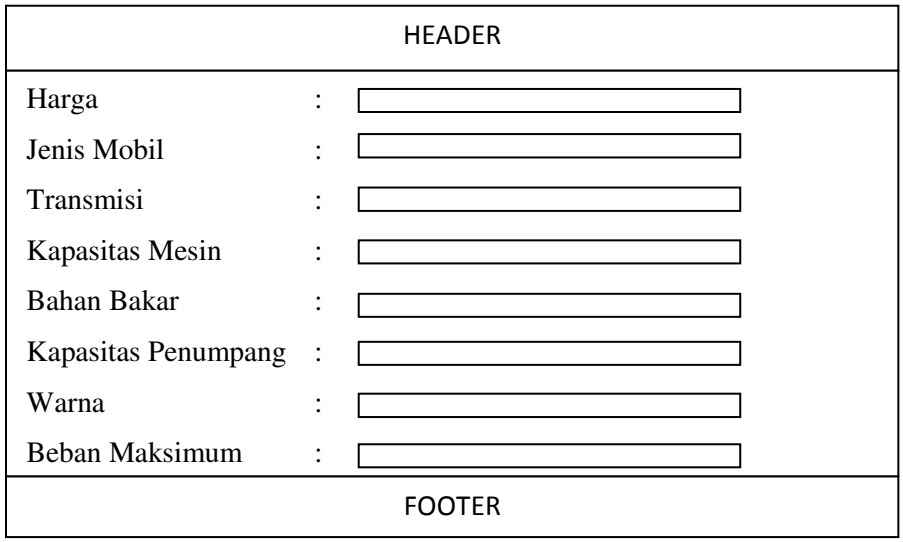
Perangkat lunak adalah program atau aplikasi yang digunakan untuk membangun sistem. Perangkat lunak yang dibutuhkan dalam pembuatan sistem ini adalah :

a. *Windows* 8
b. *Web Server* : Apache
c. *Database* Server : MySQL
d. Bahasa Pemrograman : PHP
e. SQLyog Enterprise
f. Microsoft Visio

3.8 Perancangan *Interface*

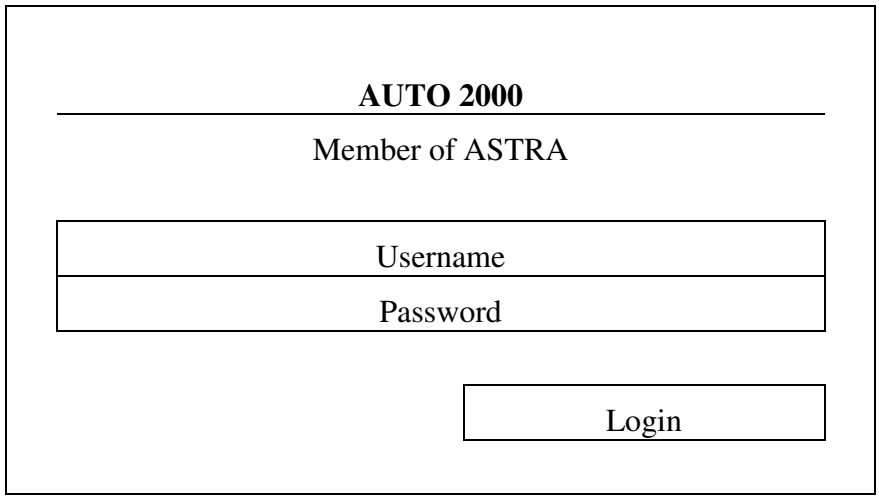
3.8.1 Desain *Input User*

Data *input* ini adalah data yang akan dimasukkan oleh calon pembeli dalam memilih kriteria yang diingkan. *User* tidak perlu melakukan login.



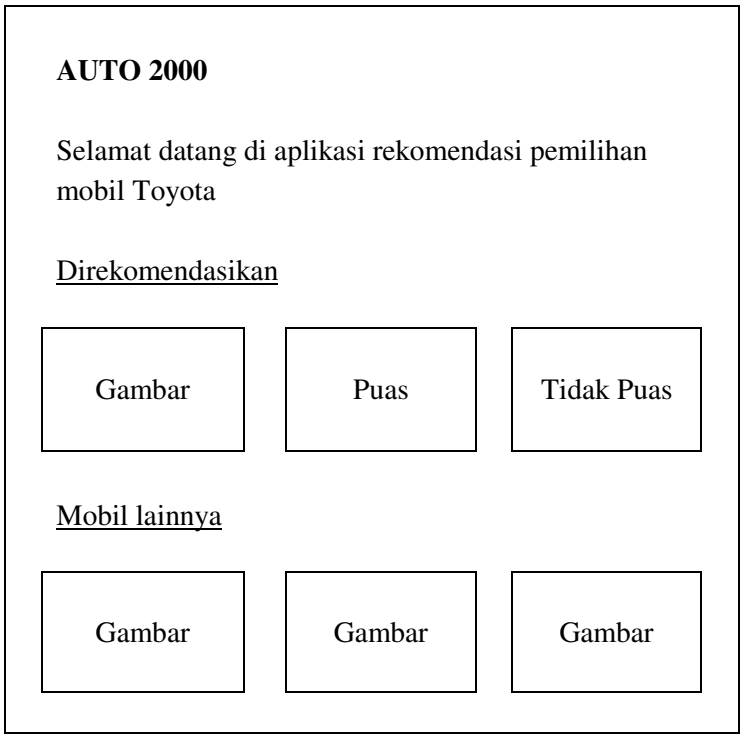
Gambar 3.6 Desain *Input User*

3.8.2 Desain Halaman *Login* Admin



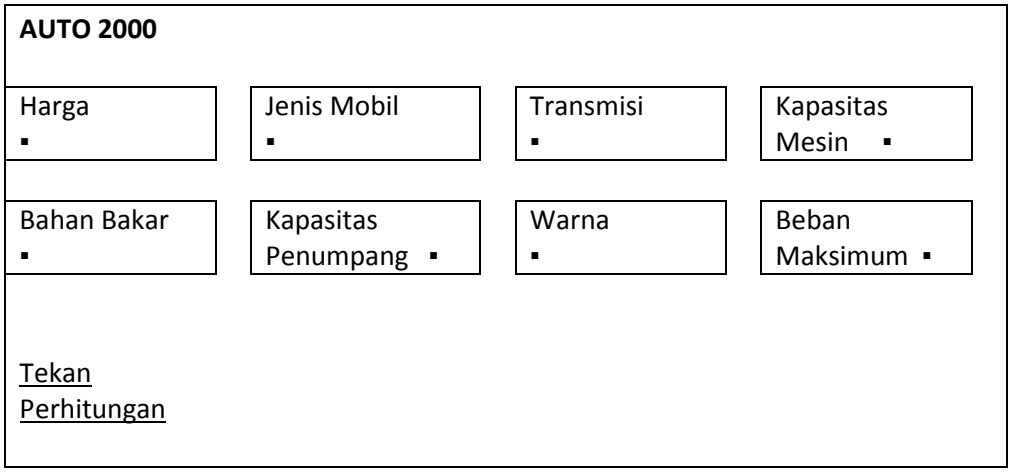
Gambar 3.7 Desain *Login* Admin

3.8.3 Desain Halaman Penilaian Hasil Rekomendasi



Gambar 3.8 Desain Penilaian Hasil Rekomendasi

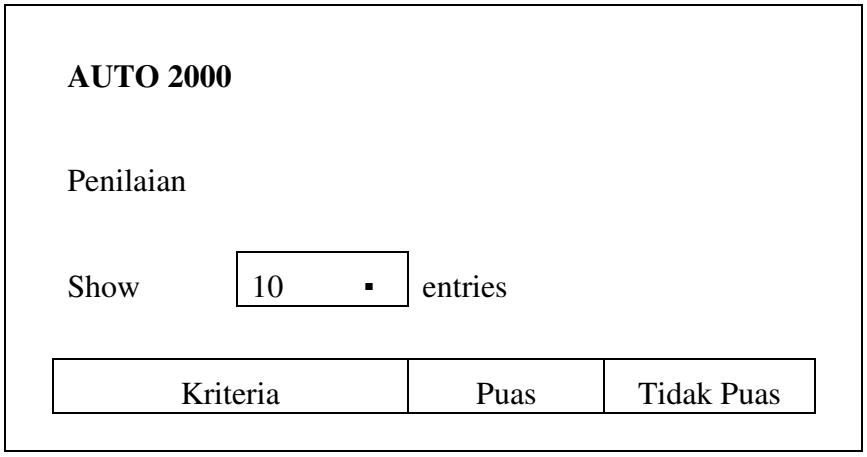
3.8.4 Desain Halaman Rincian Perhitungan Metode *Electre*



Gambar 3.9 Desain Rincian Perhitungan Metode *Electre*

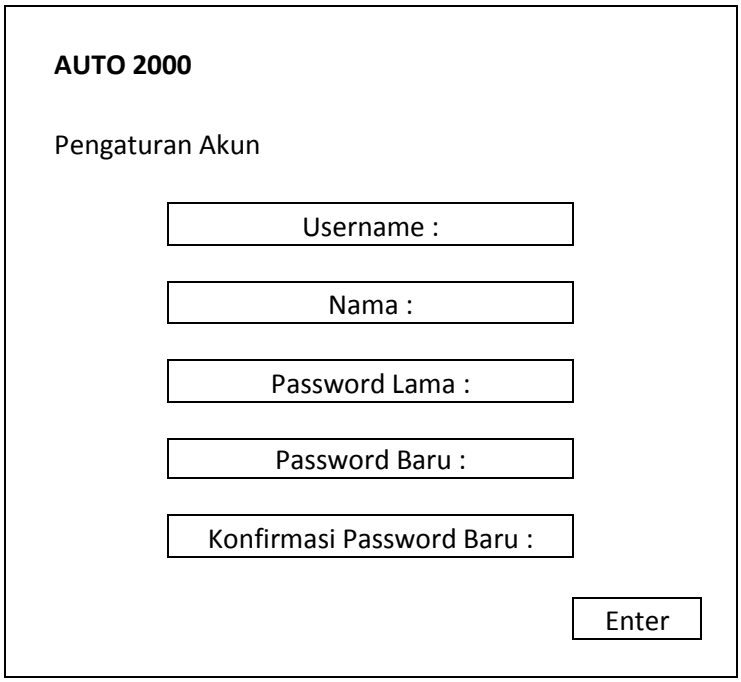
3.8.5 Desain Halaman Daftar Penilaian Pelanggan

Halaman ini menampilkan detail penilaian dari setiap kriteria yang konsumen masukkan.



Gambar 3.10 Desain Halaman Penilaian Pelanggan

3.8.6 Desain Halaman Pengaturan *Akun*



Gambar 3.11 Desain Halaman Pengaturan *Akun*

3.9 Skenario Pengujian Sistem

Skenario pengujian pertama yang dilakukan adalah dengan memasukkan data-data yang sudah diperoleh dari PT Toyota Auto 2000. Dengan memasukkan alternatif mobil dan kriteria yang akan dipilih konsumen yang meliputi : Harga, jenis mobil, transmisi, kapasitas mesin, bahan bakar, kapasitas penumpang, warna, dan beban maksimum. Dimana setiap kriteria sudah terdapat bobot masing-masing.

Skenario kedua pengujian sistem ini adalah memasukkan kriteria-kriteria mobil yang tentunya sudah disediakan. Kriteria ini ada 4 pembobotan yaitu : bobot nilai (1) kurang penting, bobot nilai (2) cukup pentimg, bobot nilai (3) penting, dan bobot nilai (4) sangat penting.

Skenario ketiga setelah calon pembeli memasukkan kriteria yang dipilih menurut pendapat mereka, yang selanjutnya akan dihitungan menggunakan metode electre dengan membandingan setiap kriteria yang telah dipilih untuk merekomendasikan pilihan mobil, hasil nilai terbanyak dari perhitungan akan menjadi peringkat pertama dan hasil tersebut adalah rekomendasi mobil Toyota dari kriteria yang konsumen pilih.

Namun dalam proses perhitunganya akan terdapat dimana jumlah atau peringkat yang sama, hal ini menjadi konsekuensi dari metode electree sendiri. Peringkat dengan jumlah hasil yang sama tersebut akan dijadikan peringkat pertama dan sebagai hasil rekomendasi. Detail perhitungan metode electree dapat dilihat di bagian admin. Sedaangkan detail penilaian tingkat kepuasan konsumen ada pada lapiran bagian kedua.

Diharapkan sistem ini sedikit banyak bisa membantu konsumen untuk pemilihan mobil yang sesuai dengan keinginannya yang tentunya dengan kriteria yang telah diinginkan.