

LAMPIRAN

Lampiran 1

Hasil Cek Turnitin

PENENTUAN RUTE DISTRIBUSI DENGAN
MEMPERTIMBANGKAN MULTI PRODUCT DAN
CAPACITATED VEHICLE ROUTING PROBLEM (CVRP) DI PT.
ACIS EKAMULIA SUCAKTI

ORIGINALITY REPORT

% 11	% 11	% 3	% 3
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	id.123dok.com Internet Source	% 2
2	eprints.binus.ac.id Internet Source	% 1
3	journal.ubm.ac.id Internet Source	% 1
4	www.scribd.com Internet Source	% 1
5	eprints.umg.ac.id Internet Source	% 1
6	123dok.com Internet Source	% 1
7	informatika.stei.itb.ac.id Internet Source	% 1
8	blogsainulh.wordpress.com Internet Source	% 1

Lampiran 2.

Running Software Lingo cluster 1

Global optimal solution found.

Objective value:	74.24000
Objective bound:	74.24000
Infeasibilities:	0.000000
Extended solver steps:	18352
Total solver iterations:	138310

Rute yang paling optimal ialah:

rute pengiriman dari ritel 1 ke ritel 11 sebesar 15km
 rute pengiriman dari ritel 2 ke ritel 1 sebesar 8km
 rute pengiriman dari ritel 3 ke ritel 2 sebesar 8.1km
 rute pengiriman dari ritel 4 ke ritel 5 sebesar 4.1km
 rute pengiriman dari ritel 5 ke ritel 6 sebesar 0.24km
 rute pengiriman dari ritel 6 ke ritel 10 sebesar 3.4km
 rute pengiriman dari ritel 7 ke ritel 8 sebesar 3.4km
 rute pengiriman dari ritel 8 ke ritel 9 sebesar 2.1km
 rute pengiriman dari ritel 9 ke ritel 3 sebesar 16km
 rute pengiriman dari ritel 10 ke ritel 7 sebesar 8.2km
 rute pengiriman dari ritel 11 ke ritel 4 sebesar 5.7km

Variable	Value
R	0.1000000E+08
TL(1)	40.00000
TL(2)	40.00000
TL(3)	40.00000
TL(4)	40.00000
TL(5)	40.00000
TL(6)	40.00000
TL(7)	40.00000
TL(8)	40.00000
TL(9)	40.00000
TL(10)	40.00000

TL(11)	40.00000
TB(1)	480.0000
TB(2)	420.0000
TB(3)	540.0000
TB(4)	420.0000
TB(5)	540.0000
TB(6)	480.0000
TB(7)	480.0000
TB(8)	480.0000
TB(9)	480.0000
TB(10)	480.0000
TB(11)	540.0000
TT(1)	1080.000
TT(2)	1380.000
TT(3)	1260.000
TT(4)	1380.000
TT(5)	1200.000
TT(6)	1260.000
TT(7)	1200.000
TT(8)	1260.000
TT(9)	1020.000
TT(10)	1320.000
TT(11)	1380.000
T(1)	1410.000
T(2)	976.8600
T(3)	924.7100
T(4)	588.5500
T(5)	634.7000
T(6)	675.0600
T(7)	772.4600
T(8)	817.5600
T(9)	860.7100
T(10)	720.1600
T(11)	540.0000
X(1, 1)	0.000000
X(1, 2)	0.000000
X(1, 3)	0.000000
X(1, 4)	0.000000

X(1, 5)	0.000000
X(1, 6)	0.000000
X(1, 7)	0.000000
X(1, 8)	0.000000
X(1, 9)	0.000000
X(1, 10)	0.000000
X(1, 11)	1.000000
X(2, 1)	1.000000
X(2, 2)	0.000000
X(2, 3)	0.000000
X(2, 4)	0.000000
X(2, 5)	0.000000
X(2, 6)	0.000000
X(2, 7)	0.000000
X(2, 8)	0.000000
X(2, 9)	0.000000
X(2, 10)	0.000000
X(2, 11)	0.000000
X(3, 1)	0.000000
X(3, 2)	1.000000
X(3, 3)	0.000000
X(3, 4)	0.000000
X(3, 5)	0.000000
X(3, 6)	0.000000
X(3, 7)	0.000000
X(3, 8)	0.000000
X(3, 9)	0.000000
X(3, 10)	0.000000
X(3, 11)	0.000000
X(4, 1)	0.000000
X(4, 2)	0.000000
X(4, 3)	0.000000
X(4, 4)	0.000000
X(4, 5)	1.000000
X(4, 6)	0.000000
X(4, 7)	0.000000
X(4, 8)	0.000000
X(4, 9)	0.000000

X(4, 10)	0.000000
X(4, 11)	0.000000
X(5, 1)	0.000000
X(5, 2)	0.000000
X(5, 3)	0.000000
X(5, 4)	0.000000
X(5, 5)	0.000000
X(5, 6)	1.000000
X(5, 7)	0.000000
X(5, 8)	0.000000
X(5, 9)	0.000000
X(5, 10)	0.000000
X(5, 11)	0.000000
X(6, 1)	0.000000
X(6, 2)	0.000000
X(6, 3)	0.000000
X(6, 4)	0.000000
X(6, 5)	0.000000
X(6, 6)	0.000000
X(6, 7)	0.000000
X(6, 8)	0.000000
X(6, 9)	0.000000
X(6, 10)	1.000000
X(6, 11)	0.000000
X(7, 1)	0.000000
X(7, 2)	0.000000
X(7, 3)	0.000000
X(7, 4)	0.000000
X(7, 5)	0.000000
X(7, 6)	0.000000
X(7, 7)	0.000000
X(7, 8)	1.000000
X(7, 9)	0.000000
X(7, 10)	0.000000
X(7, 11)	0.000000
X(8, 1)	0.000000
X(8, 2)	0.000000
X(8, 3)	0.000000

X(8, 4)	0.000000
X(8, 5)	0.000000
X(8, 6)	0.000000
X(8, 7)	0.000000
X(8, 8)	0.000000
X(8, 9)	1.000000
X(8, 10)	0.000000
X(8, 11)	0.000000
X(9, 1)	0.000000
X(9, 2)	0.000000
X(9, 3)	1.000000
X(9, 4)	0.000000
X(9, 5)	0.000000
X(9, 6)	0.000000
X(9, 7)	0.000000
X(9, 8)	0.000000
X(9, 9)	0.000000
X(9, 10)	0.000000
X(9, 11)	0.000000
X(10, 1)	0.000000
X(10, 2)	0.000000
X(10, 3)	0.000000
X(10, 4)	0.000000
X(10, 5)	0.000000
X(10, 6)	0.000000
X(10, 7)	1.000000
X(10, 8)	0.000000
X(10, 9)	0.000000
X(10, 10)	0.000000
X(10, 11)	0.000000
X(11, 1)	0.000000
X(11, 2)	0.000000
X(11, 3)	0.000000
X(11, 4)	1.000000
X(11, 5)	0.000000
X(11, 6)	0.000000
X(11, 7)	0.000000
X(11, 8)	0.000000

X(11, 9)	0.000000
X(11, 10)	0.000000
X(11, 11)	0.000000
D(1, 1)	0.000000
D(1, 2)	8.000000
D(1, 3)	12.000000
D(1, 4)	20.000000
D(1, 5)	18.000000
D(1, 6)	18.000000
D(1, 7)	23.000000
D(1, 8)	20.000000
D(1, 9)	22.000000
D(1, 10)	25.000000
D(1, 11)	15.000000
D(2, 1)	8.000000
D(2, 2)	0.000000
D(2, 3)	8.100000
D(2, 4)	20.000000
D(2, 5)	20.000000
D(2, 6)	19.000000
D(2, 7)	18.000000
D(2, 8)	18.000000
D(2, 9)	18.000000
D(2, 10)	25.000000
D(2, 11)	17.000000
D(3, 1)	12.000000
D(3, 2)	8.100000
D(3, 3)	0.000000
D(3, 4)	13.000000
D(3, 5)	13.000000
D(3, 6)	13.000000
D(3, 7)	16.000000
D(3, 8)	15.000000
D(3, 9)	16.000000
D(3, 10)	21.000000
D(3, 11)	9.700000
D(4, 1)	20.000000
D(4, 2)	20.000000

D(4, 3)	13.00000
D(4, 4)	0.000000
D(4, 5)	4.100000
D(4, 6)	4.000000
D(4, 7)	10.00000
D(4, 8)	10.00000
D(4, 9)	9.800000
D(4, 10)	7.700000
D(4, 11)	5.700000
D(5, 1)	18.00000
D(5, 2)	20.00000
D(5, 3)	13.00000
D(5, 4)	4.100000
D(5, 5)	0.000000
D(5, 6)	0.2400000
D(5, 7)	7.300000
D(5, 8)	6.200000
D(5, 9)	7.100000
D(5, 10)	3.600000
D(5, 11)	6.400000
D(6, 1)	18.00000
D(6, 2)	19.00000
D(6, 3)	13.00000
D(6, 4)	4.000000
D(6, 5)	0.2400000
D(6, 6)	0.000000
D(6, 7)	7.100000
D(6, 8)	5.900000
D(6, 9)	6.900000
D(6, 10)	3.400000
D(6, 11)	6.300000
D(7, 1)	23.00000
D(7, 2)	18.00000
D(7, 3)	16.00000
D(7, 4)	10.00000
D(7, 5)	7.300000
D(7, 6)	7.100000
D(7, 7)	0.000000

D(7, 8)	3.400000
D(7, 9)	11.000000
D(7, 10)	8.200000
D(7, 11)	11.000000
D(8, 1)	20.000000
D(8, 2)	18.000000
D(8, 3)	15.000000
D(8, 4)	10.000000
D(8, 5)	6.200000
D(8, 6)	5.900000
D(8, 7)	3.400000
D(8, 8)	0.000000
D(8, 9)	2.100000
D(8, 10)	7.700000
D(8, 11)	9.100000
D(9, 1)	22.000000
D(9, 2)	18.000000
D(9, 3)	16.000000
D(9, 4)	9.800000
D(9, 5)	7.100000
D(9, 6)	6.900000
D(9, 7)	11.000000
D(9, 8)	2.100000
D(9, 9)	0.000000
D(9, 10)	8.400000
D(9, 11)	9.900000
D(10, 1)	25.000000
D(10, 2)	25.000000
D(10, 3)	21.000000
D(10, 4)	7.700000
D(10, 5)	3.600000
D(10, 6)	3.400000
D(10, 7)	8.200000
D(10, 8)	7.700000
D(10, 9)	8.400000
D(10, 10)	0.000000
D(10, 11)	12.000000
D(11, 1)	15.000000

D(11, 2)	17.00000
D(11, 3)	9.700000
D(11, 4)	5.700000
D(11, 5)	6.400000
D(11, 6)	6.300000
D(11, 7)	11.00000
D(11, 8)	9.100000
D(11, 9)	9.900000
D(11, 10)	12.00000
D(11, 11)	0.000000
TD(1, 1)	0.000000
TD(1, 2)	12.00000
TD(1, 3)	18.00000
TD(1, 4)	30.00000
TD(1, 5)	27.00000
TD(1, 6)	27.00000
TD(1, 7)	34.50000
TD(1, 8)	30.00000
TD(1, 9)	33.00000
TD(1, 10)	37.50000
TD(1, 11)	22.50000
TD(2, 1)	12.00000
TD(2, 2)	0.000000
TD(2, 3)	12.15000
TD(2, 4)	30.00000
TD(2, 5)	30.00000
TD(2, 6)	28.50000
TD(2, 7)	27.00000
TD(2, 8)	27.00000
TD(2, 9)	27.00000
TD(2, 10)	37.50000
TD(2, 11)	25.50000
TD(3, 1)	18.00000
TD(3, 2)	12.15000
TD(3, 3)	0.000000
TD(3, 4)	19.50000
TD(3, 5)	19.50000
TD(3, 6)	19.50000

TD(3, 7)	24.00000
TD(3, 8)	22.50000
TD(3, 9)	24.00000
TD(3, 10)	31.50000
TD(3, 11)	14.55000
TD(4, 1)	30.00000
TD(4, 2)	30.00000
TD(4, 3)	19.50000
TD(4, 4)	0.00000
TD(4, 5)	6.15000
TD(4, 6)	6.00000
TD(4, 7)	15.00000
TD(4, 8)	15.00000
TD(4, 9)	14.70000
TD(4, 10)	11.55000
TD(4, 11)	8.55000
TD(5, 1)	27.00000
TD(5, 2)	30.00000
TD(5, 3)	19.50000
TD(5, 4)	6.15000
TD(5, 5)	0.00000
TD(5, 6)	0.360000
TD(5, 7)	10.95000
TD(5, 8)	9.30000
TD(5, 9)	10.65000
TD(5, 10)	5.40000
TD(5, 11)	9.60000
TD(6, 1)	27.00000
TD(6, 2)	28.50000
TD(6, 3)	19.50000
TD(6, 4)	6.00000
TD(6, 5)	0.360000
TD(6, 6)	0.00000
TD(6, 7)	10.65000
TD(6, 8)	8.85000
TD(6, 9)	10.35000
TD(6, 10)	5.10000
TD(6, 11)	9.45000

TD(7, 1)	34.50000
TD(7, 2)	27.00000
TD(7, 3)	24.00000
TD(7, 4)	15.00000
TD(7, 5)	10.95000
TD(7, 6)	10.65000
TD(7, 7)	0.000000
TD(7, 8)	5.100000
TD(7, 9)	16.50000
TD(7, 10)	12.30000
TD(7, 11)	16.50000
TD(8, 1)	30.00000
TD(8, 2)	27.00000
TD(8, 3)	22.50000
TD(8, 4)	15.00000
TD(8, 5)	9.300000
TD(8, 6)	8.850000
TD(8, 7)	5.100000
TD(8, 8)	0.000000
TD(8, 9)	3.150000
TD(8, 10)	11.55000
TD(8, 11)	13.65000
TD(9, 1)	33.00000
TD(9, 2)	27.00000
TD(9, 3)	24.00000
TD(9, 4)	14.70000
TD(9, 5)	10.65000
TD(9, 6)	10.35000
TD(9, 7)	16.50000
TD(9, 8)	3.150000
TD(9, 9)	0.000000
TD(9, 10)	12.60000
TD(9, 11)	14.85000
TD(10, 1)	37.50000
TD(10, 2)	37.50000
TD(10, 3)	31.50000
TD(10, 4)	11.55000
TD(10, 5)	5.400000

TD(10, 6)	5.100000
TD(10, 7)	12.30000
TD(10, 8)	11.55000
TD(10, 9)	12.60000
TD(10, 10)	0.000000
TD(10, 11)	18.00000
TD(11, 1)	22.50000
TD(11, 2)	25.50000
TD(11, 3)	14.55000
TD(11, 4)	8.550000
TD(11, 5)	9.600000
TD(11, 6)	9.450000
TD(11, 7)	15.50000
TD(11, 8)	13.65000
TD(11, 9)	14.85000
TD(11, 10)	18.00000
TD(11, 11)	0.000000

Row	Slack or Surplus
1	74.24000
2	0.000000
3	0.000000
4	0.000000
5	0.000000
6	0.000000
7	0.000000
8	0.000000
9	0.000000
10	0.000000
11	0.000000
12	0.000000
13	0.000000
14	381.1400
15	9999960.
16	9999896.
17	9999542.
18	9999588.
19	9999630.

20	9999729.
21	9999774.
22	9999817.
23	9999666.
24	9999498.
25	0.1000043E+08
26	0.000000
27	9999960.
28	9999604.
29	9999650.
30	9999691.
31	9999784.
32	9999830.
33	9999872.
34	9999724.
35	9999561.
36	0.1000075E+08
37	0.1000032E+08
38	0.1000028E+08
39	9999960.
40	0.000000
41	0.1000004E+08
42	0.1000013E+08
43	0.1000017E+08
44	0.1000022E+08
45	0.1000008E+08
46	9999903.
47	0.1000071E+08
48	0.1000027E+08
49	0.1000023E+08
50	9999908.
51	9999960.
52	0.000000
53	0.1000009E+08
54	0.1000013E+08
55	0.1000018E+08
56	0.1000004E+08
57	9999856.

58 0.1000067E+08
59 0.1000023E+08
60 0.1000019E+08
61 9999867.
62 9999919.
63 9999960.
64 0.1000005E+08
65 0.1000009E+08
66 0.1000014E+08
67 0.000000
68 9999815.
69 0.1000056E+08
70 0.1000014E+08
71 0.1000009E+08
72 9999761.
73 9999811.
74 9999852.
75 9999960.
76 0.000000
77 0.1000003E+08
78 9999895.
79 9999711.
80 0.1000052E+08
81 0.1000009E+08
82 0.1000004E+08
83 9999716.
84 9999768.
85 9999809.
86 9999910.
87 9999960.
88 0.000000
89 9999851.
90 9999669.
91 0.1000048E+08
92 0.1000005E+08
93 0.000000
94 9999673.
95 9999723.

96	9999764.
97	9999855.
98	9999914.
99	9999960.
100	9999807.
101	9999624.
102	0.1000061E+08
103	0.1000018E+08
104	0.1000013E+08
105	9999817.
106	9999869.
107	9999910.
108	0.000000
109	0.1000005E+08
110	0.1000009E+08
111	9999960.
112	9999762.
113	0.1000081E+08
114	0.1000037E+08
115	0.1000033E+08
116	0.000000
117	0.1000005E+08
118	0.1000009E+08
119	0.1000018E+08
120	0.1000022E+08
121	0.1000027E+08
122	0.1000012E+08
123	9999960.
124	0.000000
125	0.000000
126	0.000000
127	0.000000
128	0.000000
129	0.000000
130	0.000000
131	0.000000
132	0.000000
133	0.000000

134	0.000000
135	556.8600
136	384.7100
137	168.5500
138	94.70000
139	195.0600
140	292.4600
141	337.5600
142	380.7100
143	240.1600
144	0.000000
145	363.1400
146	295.2900
147	751.4500
148	525.3000
149	544.9400
150	387.5400
151	402.4400
152	119.2900
153	559.8400
154	800.0000

Lampiran 3.

Running Software Lingo cluster 2

Global optimal solution found.

Objective value:	73.90000
Objective bound:	73.90000
Infeasibilities:	0.000000
Extended solver steps:	0
Total solver iterations:	80

Rute yang paling optimal ialah:

rute pengiriman dari ritel 1 ke ritel 3 sebesar 14km
 rute pengiriman dari ritel 2 ke ritel 1 sebesar 2.9km
 rute pengiriman dari ritel 3 ke ritel 4 sebesar 22km
 rute pengiriman dari ritel 4 ke ritel 5 sebesar 19km
 rute pengiriman dari ritel 5 ke ritel 2 sebesar 16km

Variable	Value
R	0.1000000E+09
TL(1)	40.00000
TL(2)	40.00000
TL(3)	40.00000
TL(4)	40.00000
TL(5)	40.00000
TB(1)	480.0000
TB(2)	540.0000
TB(3)	420.0000
TB(4)	480.0000
TB(5)	420.0000
TT(1)	1080.000
TT(2)	1260.000
TT(3)	1200.000
TT(4)	1200.000
TT(5)	1260.000
T(1)	1287.000

T(2)	642.0000
T(3)	420.0000
T(4)	493.0000
T(5)	561.5000
X(1, 1)	0.000000
X(1, 2)	0.000000
X(1, 3)	1.000000
X(1, 4)	0.000000
X(1, 5)	0.000000
X(2, 1)	1.000000
X(2, 2)	0.000000
X(2, 3)	0.000000
X(2, 4)	0.000000
X(2, 5)	0.000000
X(3, 1)	0.000000
X(3, 2)	0.000000
X(3, 3)	0.000000
X(3, 4)	1.000000
X(3, 5)	0.000000
X(4, 1)	0.000000
X(4, 2)	0.000000
X(4, 3)	0.000000
X(4, 4)	0.000000
X(4, 5)	1.000000
X(5, 1)	0.000000
X(5, 2)	1.000000
X(5, 3)	0.000000
X(5, 4)	0.000000
X(5, 5)	0.000000
D(1, 1)	0.000000
D(1, 2)	2.900000
D(1, 3)	14.000000
D(1, 4)	35.000000
D(1, 5)	38.000000
D(2, 1)	2.900000
D(2, 2)	0.000000
D(2, 3)	12.000000
D(2, 4)	33.000000

D(2, 5)	16.00000
D(3, 1)	14.00000
D(3, 2)	12.00000
D(3, 3)	0.000000
D(3, 4)	22.00000
D(3, 5)	5.600000
D(4, 1)	35.00000
D(4, 2)	33.00000
D(4, 3)	33.00000
D(4, 4)	0.000000
D(4, 5)	19.00000
D(5, 1)	38.00000
D(5, 2)	16.00000
D(5, 3)	5.600000
D(5, 4)	19.00000
D(5, 5)	0.000000
TD(1, 1)	0.000000
TD(1, 2)	4.350000
TD(1, 3)	21.00000
TD(1, 4)	52.50000
TD(1, 5)	27.00000
TD(2, 1)	4.350000
TD(2, 2)	0.000000
TD(2, 3)	18.00000
TD(2, 4)	49.50000
TD(2, 5)	40.50000
TD(3, 1)	21.00000
TD(3, 2)	18.00000
TD(3, 3)	0.000000
TD(3, 4)	33.00000
TD(3, 5)	8.400000
TD(4, 1)	52.50000
TD(4, 2)	49.50000
TD(4, 3)	33.00000
TD(4, 4)	0.000000
TD(4, 5)	28.50000
TD(5, 1)	27.00000
TD(5, 2)	40.50000

TD(5, 3)	8.400000
TD(5, 4)	28.50000
TD(5, 5)	0.000000

Row	Slack or Surplus
1	73.90000
2	0.000000
3	0.000000
4	0.000000
5	0.000000
6	0.000000
7	0.000000
8	600.6500
9	0.9999996E+08
10	0.9999972E+08
11	0.9999976E+08
12	0.9999984E+08
13	0.1000008E+09
14	0.1000002E+09
15	0.9999996E+08
16	0.000000
17	0.1000001E+09
18	0.1000007E+09
19	0.1000001E+09
20	0.9999985E+08
21	0.9999996E+08
22	0.000000
23	0.1000007E+09
24	0.000000
25	0.9999981E+08
26	0.9999986E+08
27	0.9999996E+08
28	0.000000
29	0.000000
30	0.000000
31	0.000000
32	0.000000
33	102.0000

34	0.000000
35	13.00000
36	141.5000
37	578.0000
38	740.0000
39	667.0000
40	658.5000

Lampiran 4.

Running Software Lingo Cluster 3

Global optimal solution found.

Objective value: 276.0500
 Objective bound: 276.0500
 Infeasibilities: 0.000000
 Extended solver steps: 150
 Total solver iterations: 5433

Rute yang paling optimal ialah:

rute pengiriman dari ritel 1 ke ritel 9 sebesar 7.4km
 rute pengiriman dari ritel 2 ke ritel 3 sebesar 9.3km
 rute pengiriman dari ritel 3 ke ritel 1 sebesar 12km
 rute pengiriman dari ritel 4 ke ritel 2 sebesar 24km
 rute pengiriman dari ritel 5 ke ritel 4 sebesar 18km
 rute pengiriman dari ritel 6 ke ritel 5 sebesar 72km
 rute pengiriman dari ritel 7 ke ritel 6 sebesar 0.35km
 rute pengiriman dari ritel 8 ke ritel 7 sebesar 33km
 rute pengiriman dari ritel 9 ke ritel 8 sebesar 100km

Variable	Value
R	0.1000000E+09
TL(1)	40.00000
TL(2)	40.00000
TL(3)	40.00000
TL(4)	40.00000
TL(5)	40.00000
TL(6)	40.00000
TL(7)	40.00000
TL(8)	40.00000
TL(9)	40.00000
TB(1)	480.0000
TB(2)	480.0000
TB(3)	540.0000
TB(4)	420.0000
TB(5)	420.0000

TB(6)	360.0000
TB(7)	480.0000
TB(8)	480.0000
TB(9)	480.0000
TT(1)	1080.000
TT(2)	1080.000
TT(3)	1380.000
TT(4)	1140.000
TT(5)	1140.000
TT(6)	1140.000
TT(7)	1200.000
TT(8)	1200.000
TT(9)	1080.000
T(1)	1394.400
T(2)	1016.820
T(3)	1304.780
T(4)	948.0200
T(5)	886.4200
T(6)	760.0200
T(7)	719.6000
T(8)	640.0000
T(9)	480.0000
X(1, 1)	0.000000
X(1, 2)	0.000000
X(1, 3)	0.000000
X(1, 4)	0.000000
X(1, 5)	0.000000
X(1, 6)	0.000000
X(1, 7)	0.000000
X(1, 8)	0.000000
X(1, 9)	1.000000
X(2, 1)	0.000000
X(2, 2)	0.000000
X(2, 3)	1.000000
X(2, 4)	0.000000
X(2, 5)	0.000000
X(2, 6)	0.000000
X(2, 7)	0.000000

X(2, 8)	0.000000
X(2, 9)	0.000000
X(3, 1)	1.000000
X(3, 2)	0.000000
X(3, 3)	0.000000
X(3, 4)	0.000000
X(3, 5)	0.000000
X(3, 6)	0.000000
X(3, 7)	0.000000
X(3, 8)	0.000000
X(3, 9)	0.000000
X(4, 1)	0.000000
X(4, 2)	1.000000
X(4, 3)	0.000000
X(4, 4)	0.000000
X(4, 5)	0.000000
X(4, 6)	0.000000
X(4, 7)	0.000000
X(4, 8)	0.000000
X(4, 9)	0.000000
X(5, 1)	0.000000
X(5, 2)	0.000000
X(5, 3)	0.000000
X(5, 4)	1.000000
X(5, 5)	0.000000
X(5, 6)	0.000000
X(5, 7)	0.000000
X(5, 8)	0.000000
X(5, 9)	0.000000
X(6, 1)	0.000000
X(6, 2)	0.000000
X(6, 3)	0.000000
X(6, 4)	0.000000
X(6, 5)	1.000000
X(6, 6)	0.000000
X(6, 7)	0.000000
X(6, 8)	0.000000
X(6, 9)	0.000000

X(7, 1)	0.000000
X(7, 2)	0.000000
X(7, 3)	0.000000
X(7, 4)	0.000000
X(7, 5)	0.000000
X(7, 6)	1.000000
X(7, 7)	0.000000
X(7, 8)	0.000000
X(7, 9)	0.000000
X(8, 1)	0.000000
X(8, 2)	0.000000
X(8, 3)	0.000000
X(8, 4)	0.000000
X(8, 5)	0.000000
X(8, 6)	0.000000
X(8, 7)	1.000000
X(8, 8)	0.000000
X(8, 9)	0.000000
X(9, 1)	0.000000
X(9, 2)	0.000000
X(9, 3)	0.000000
X(9, 4)	0.000000
X(9, 5)	0.000000
X(9, 6)	0.000000
X(9, 7)	0.000000
X(9, 8)	1.000000
X(9, 9)	0.000000
D(1, 1)	0.000000
D(1, 2)	13.00000
D(1, 3)	12.00000
D(1, 4)	37.00000
D(1, 5)	48.00000
D(1, 6)	111.0000
D(1, 7)	112.0000
D(1, 8)	116.0000
D(1, 9)	7.400000
D(2, 1)	13.00000
D(2, 2)	0.000000

D(2, 3)	9.300000
D(2, 4)	24.000000
D(2, 5)	55.000000
D(2, 6)	118.000000
D(2, 7)	119.000000
D(2, 8)	123.000000
D(2, 9)	31.000000
D(3, 1)	12.000000
D(3, 2)	9.300000
D(3, 3)	0.000000
D(3, 4)	24.000000
D(3, 5)	31.000000
D(3, 6)	110.000000
D(3, 7)	110.000000
D(3, 8)	114.000000
D(3, 9)	22.000000
D(4, 1)	37.000000
D(4, 2)	24.000000
D(4, 3)	24.000000
D(4, 4)	0.000000
D(4, 5)	18.000000
D(4, 6)	91.000000
D(4, 7)	92.000000
D(4, 8)	96.000000
D(4, 9)	24.000000
D(5, 1)	48.000000
D(5, 2)	55.000000
D(5, 3)	31.000000
D(5, 4)	18.000000
D(5, 5)	0.000000
D(5, 6)	72.000000
D(5, 7)	73.000000
D(5, 8)	77.000000
D(5, 9)	33.000000
D(6, 1)	111.000000
D(6, 2)	118.000000
D(6, 3)	110.000000
D(6, 4)	91.000000

D(6, 5)	72.00000
D(6, 6)	0.000000
D(6, 7)	0.3500000
D(6, 8)	33.00000
D(6, 9)	96.00000
D(7, 1)	112.0000
D(7, 2)	119.0000
D(7, 3)	110.0000
D(7, 4)	92.00000
D(7, 5)	73.00000
D(7, 6)	0.3500000
D(7, 7)	0.000000
D(7, 8)	33.00000
D(7, 9)	97.00000
D(8, 1)	116.0000
D(8, 2)	123.0000
D(8, 3)	114.0000
D(8, 4)	96.00000
D(8, 5)	77.00000
D(8, 6)	33.00000
D(8, 7)	33.00000
D(8, 8)	0.000000
D(8, 9)	100.0000
D(9, 1)	7.400000
D(9, 2)	31.00000
D(9, 3)	22.00000
D(9, 4)	24.00000
D(9, 5)	33.00000
D(9, 6)	96.00000
D(9, 7)	97.00000
D(9, 8)	100.0000
D(9, 9)	0.000000
TD(1, 1)	0.000000
TD(1, 2)	15.60000
TD(1, 3)	14.40000
TD(1, 4)	44.40000
TD(1, 5)	57.60000
TD(1, 6)	133.2000

TD(1, 7)	134.4000
TD(1, 8)	139.2000
TD(1, 9)	8.880000
TD(2, 1)	15.60000
TD(2, 2)	0.000000
TD(2, 3)	11.16000
TD(2, 4)	28.80000
TD(2, 5)	66.00000
TD(2, 6)	141.6000
TD(2, 7)	142.8000
TD(2, 8)	147.6000
TD(2, 9)	37.20000
TD(3, 1)	14.40000
TD(3, 2)	11.16000
TD(3, 3)	0.000000
TD(3, 4)	28.80000
TD(3, 5)	37.20000
TD(3, 6)	132.0000
TD(3, 7)	132.0000
TD(3, 8)	136.8000
TD(3, 9)	26.40000
TD(4, 1)	44.40000
TD(4, 2)	28.80000
TD(4, 3)	28.80000
TD(4, 4)	0.000000
TD(4, 5)	21.60000
TD(4, 6)	109.2000
TD(4, 7)	110.4000
TD(4, 8)	115.2000
TD(4, 9)	28.80000
TD(5, 1)	57.60000
TD(5, 2)	66.00000
TD(5, 3)	37.20000
TD(5, 4)	21.60000
TD(5, 5)	0.000000
TD(5, 6)	86.40000
TD(5, 7)	87.60000
TD(5, 8)	92.40000

TD(5, 9)	39.60000
TD(6, 1)	133.2000
TD(6, 2)	141.6000
TD(6, 3)	132.0000
TD(6, 4)	109.2000
TD(6, 5)	86.40000
TD(6, 6)	0.000000
TD(6, 7)	0.4200000
TD(6, 8)	39.60000
TD(6, 9)	115.2000
TD(7, 1)	134.4000
TD(7, 2)	142.8000
TD(7, 3)	132.0000
TD(7, 4)	110.4000
TD(7, 5)	87.60000
TD(7, 6)	0.4200000
TD(7, 7)	0.000000
TD(7, 8)	39.60000
TD(7, 9)	116.4000
TD(8, 1)	139.2000
TD(8, 2)	147.6000
TD(8, 3)	136.8000
TD(8, 4)	115.2000
TD(8, 5)	92.40000
TD(8, 6)	39.60000
TD(8, 7)	39.60000
TD(8, 8)	0.000000
TD(8, 9)	120.0000
TD(9, 1)	8.880000
TD(9, 2)	37.20000
TD(9, 3)	26.40000
TD(9, 4)	28.80000
TD(9, 5)	39.60000
TD(9, 6)	115.2000
TD(9, 7)	116.4000
TD(9, 8)	120.0000
TD(9, 9)	0.000000

Row	Slack or Surplus
1	276.0500
2	0.000000
3	0.000000
4	0.000000
5	0.000000
6	0.000000
7	0.000000
8	0.000000
9	0.000000
10	0.000000
11	0.000000
12	0.1000003E+09
13	0.9999996E+08
14	236.8000
15	0.9999986E+08
16	0.9999976E+08
17	0.9999956E+08
18	0.9999952E+08
19	0.9999944E+08
20	0.9999939E+08
21	35.22000
22	0.9999966E+08
23	0.9999996E+08
24	0.9999957E+08
25	0.9999950E+08
26	0.9999928E+08
27	0.9999924E+08
28	0.9999916E+08
29	0.9999911E+08
30	0.1000004E+09
31	0.000000
32	0.1000003E+09
33	0.9999996E+08
34	0.9999988E+08
35	0.9999966E+08
36	0.9999962E+08
37	0.9999954E+08

38	0.9999946E+08
39	0.1000004E+09
40	0.1000000E+09
41	0.1000003E+09
42	0.000000
43	0.9999996E+08
44	0.9999975E+08
45	0.9999971E+08
46	0.9999962E+08
47	0.9999951E+08
48	0.1000005E+09
49	0.1000001E+09
50	0.1000004E+09
51	0.1000000E+09
52	0.000000
53	0.9999996E+08
54	0.9999992E+08
55	0.9999980E+08
56	0.9999956E+08
57	0.1000005E+09
58	0.1000001E+09
59	0.1000004E+09
60	0.1000001E+09
61	0.1000000E+09
62	0.000000
63	0.9999996E+08
64	0.9999984E+08
65	0.9999960E+08
66	0.1000006E+09
67	0.1000002E+09
68	0.1000005E+09
69	0.1000002E+09
70	0.1000001E+09
71	0.1000000E+09
72	0.000000
73	0.9999996E+08
74	0.9999968E+08
75	0.1000009E+09

76	0.1000005E+09
77	0.1000008E+09
78	0.1000004E+09
79	0.1000003E+09
80	0.1000001E+09
81	0.1000001E+09
82	0.000000
83	0.9999996E+08
84	0.000000
85	0.000000
86	0.000000
87	0.000000
88	0.000000
89	0.000000
90	0.000000
91	0.000000
92	0.000000
93	536.8200
94	764.7800
95	528.0200
96	466.4200
97	400.0200
98	239.6000
99	160.0000
100	0.000000
101	23.18000
102	35.22000
103	151.9800
104	213.5800
105	339.9800
106	440.4000
107	520.0000
108	560.0000

Lampiran 5.

Running Software Lingo cluster 4

Global optimal solution found.

Objective value:	609.8000
Objective bound:	609.8000
Infeasibilities:	0.000000
Extended solver steps:	98
Total solver iterations:	1582

Rute yang paling optimal ialah:

rute pengiriman dari ritel 1 ke ritel 3 sebesar 80km
 rute pengiriman dari ritel 2 ke ritel 6 sebesar 208km
 rute pengiriman dari ritel 3 ke ritel 4 sebesar 1.7km
 rute pengiriman dari ritel 4 ke ritel 2 sebesar 1.7km
 rute pengiriman dari ritel 5 ke ritel 7 sebesar 69km
 rute pengiriman dari ritel 6 ke ritel 5 sebesar 4.4km
 rute pengiriman dari ritel 7 ke ritel 8 sebesar 37km
 rute pengiriman dari ritel 8 ke ritel 1 sebesar 208km

Variable	Value
R	0.1000000E+09
TL(1)	40.00000
TL(2)	40.00000
TL(3)	40.00000
TL(4)	40.00000
TL(5)	40.00000
TL(6)	40.00000
TL(7)	40.00000
TL(8)	40.00000
TB(1)	480.0000
TB(2)	540.0000
TB(3)	420.0000
TB(4)	480.0000
TB(5)	480.0000

TB(6)	420.0000
TB(7)	480.0000
TB(8)	480.0000
TT(1)	1080.000
TT(2)	1200.000
TT(3)	1320.000
TT(4)	1080.000
TT(5)	1020.000
TT(6)	1260.000
TT(7)	1260.000
TT(8)	1200.000
T(1)	1566.000
T(2)	540.0000
T(3)	420.0000
T(4)	497.9600
T(5)	874.8800
T(6)	829.6000
T(7)	997.6800
T(8)	1160.000
X(1, 1)	0.000000
X(1, 2)	0.000000
X(1, 3)	1.000000
X(1, 4)	0.000000
X(1, 5)	0.000000
X(1, 6)	0.000000
X(1, 7)	0.000000
X(1, 8)	0.000000
X(2, 1)	0.000000
X(2, 2)	0.000000
X(2, 3)	0.000000
X(2, 4)	0.000000
X(2, 5)	0.000000
X(2, 6)	1.000000
X(2, 7)	0.000000
X(2, 8)	0.000000
X(3, 1)	0.000000
X(3, 2)	0.000000
X(3, 3)	0.000000

X(3, 4)	1.000000
X(3, 5)	0.000000
X(3, 6)	0.000000
X(3, 7)	0.000000
X(3, 8)	0.000000
X(4, 1)	0.000000
X(4, 2)	1.000000
X(4, 3)	0.000000
X(4, 4)	0.000000
X(4, 5)	0.000000
X(4, 6)	0.000000
X(4, 7)	0.000000
X(4, 8)	0.000000
X(5, 1)	0.000000
X(5, 2)	0.000000
X(5, 3)	0.000000
X(5, 4)	0.000000
X(5, 5)	0.000000
X(5, 6)	0.000000
X(5, 7)	1.000000
X(5, 8)	0.000000
X(6, 1)	0.000000
X(6, 2)	0.000000
X(6, 3)	0.000000
X(6, 4)	0.000000
X(6, 5)	1.000000
X(6, 6)	0.000000
X(6, 7)	0.000000
X(6, 8)	0.000000
X(7, 1)	0.000000
X(7, 2)	0.000000
X(7, 3)	0.000000
X(7, 4)	0.000000
X(7, 5)	0.000000
X(7, 6)	0.000000
X(7, 7)	0.000000
X(7, 8)	1.000000
X(8, 1)	1.000000

X(8, 2)	0.000000
X(8, 3)	0.000000
X(8, 4)	0.000000
X(8, 5)	0.000000
X(8, 6)	0.000000
X(8, 7)	0.000000
X(8, 8)	0.000000
D(1, 1)	0.000000
D(1, 2)	84.00000
D(1, 3)	80.00000
D(1, 4)	83.00000
D(1, 5)	187.0000
D(1, 6)	187.0000
D(1, 7)	255.0000
D(1, 8)	208.0000
D(2, 1)	84.00000
D(2, 2)	0.000000
D(2, 3)	7.100000
D(2, 4)	1.700000
D(2, 5)	208.0000
D(2, 6)	208.0000
D(2, 7)	276.0000
D(2, 8)	314.0000
D(3, 1)	80.00000
D(3, 2)	7.100000
D(3, 3)	0.000000
D(3, 4)	1.700000
D(3, 5)	208.0000
D(3, 6)	208.0000
D(3, 7)	276.0000
D(3, 8)	314.0000
D(4, 1)	83.00000
D(4, 2)	1.700000
D(4, 3)	1.700000
D(4, 4)	0.000000
D(4, 5)	207.0000
D(4, 6)	207.0000
D(4, 7)	275.0000

D(4, 8)	313.0000
D(5, 1)	187.0000
D(5, 2)	208.0000
D(5, 3)	208.0000
D(5, 4)	207.0000
D(5, 5)	0.000000
D(5, 6)	4.400000
D(5, 7)	69.00000
D(5, 8)	105.0000
D(6, 1)	187.0000
D(6, 2)	208.0000
D(6, 3)	208.0000
D(6, 4)	207.0000
D(6, 5)	4.400000
D(6, 6)	0.000000
D(6, 7)	70.00000
D(6, 8)	106.0000
D(7, 1)	255.0000
D(7, 2)	276.0000
D(7, 3)	276.0000
D(7, 4)	275.0000
D(7, 5)	69.00000
D(7, 6)	70.00000
D(7, 7)	0.000000
D(7, 8)	37.00000
D(8, 1)	208.0000
D(8, 2)	314.0000
D(8, 3)	314.0000
D(8, 4)	313.0000
D(8, 5)	105.0000
D(8, 6)	106.0000
D(8, 7)	37.00000
D(8, 8)	0.000000
TD(1, 1)	0.000000
TD(1, 2)	100.8000
TD(1, 3)	96.00000
TD(1, 4)	99.60000
TD(1, 5)	224.4000

TD(1, 6)	224.4000
TD(1, 7)	306.0000
TD(1, 8)	249.6000
TD(2, 1)	100.8000
TD(2, 2)	0.000000
TD(2, 3)	8.520000
TD(2, 4)	2.040000
TD(2, 5)	249.6000
TD(2, 6)	249.6000
TD(2, 7)	331.2000
TD(2, 8)	376.8000
TD(3, 1)	96.00000
TD(3, 2)	8.520000
TD(3, 3)	0.000000
TD(3, 4)	2.040000
TD(3, 5)	249.6000
TD(3, 6)	249.6000
TD(3, 7)	331.2000
TD(3, 8)	376.8000
TD(4, 1)	99.60000
TD(4, 2)	2.040000
TD(4, 3)	2.040000
TD(4, 4)	0.000000
TD(4, 5)	248.4000
TD(4, 6)	248.4000
TD(4, 7)	330.0000
TD(4, 8)	375.6000
TD(5, 1)	224.4000
TD(5, 2)	249.6000
TD(5, 3)	249.6000
TD(5, 4)	248.4000
TD(5, 5)	0.000000
TD(5, 6)	5.280000
TD(5, 7)	82.80000
TD(5, 8)	126.0000
TD(6, 1)	224.4000
TD(6, 2)	249.6000
TD(6, 3)	249.6000

TD(6, 4)	248.4000
TD(6, 5)	5.280000
TD(6, 6)	0.000000
TD(6, 7)	84.00000
TD(6, 8)	127.2000
TD(7, 1)	306.0000
TD(7, 2)	331.2000
TD(7, 3)	331.2000
TD(7, 4)	330.0000
TD(7, 5)	82.80000
TD(7, 6)	84.00000
TD(7, 7)	0.000000
TD(7, 8)	44.40000
TD(8, 1)	249.6000
TD(8, 2)	376.8000
TD(8, 3)	376.8000
TD(8, 4)	375.6000
TD(8, 5)	126.0000
TD(8, 6)	127.2000
TD(8, 7)	44.40000
TD(8, 8)	0.000000

Row	Slack or Surplus
1	609.8000
2	0.000000
3	0.000000
4	0.000000
5	0.000000
6	0.000000
7	0.000000
8	0.000000
9	0.000000
10	0.000000
11	0.1000009E+09
12	0.9999996E+08
13	0.9999983E+08
14	0.9999992E+08
15	0.1000000E+09

16	0.000000
17	0.1000001E+09
18	0.1000002E+09
19	0.1000010E+09
20	0.1000001E+09
21	0.9999996E+08
22	35.92000
23	0.1000002E+09
24	0.1000001E+09
25	0.1000002E+09
26	0.1000003E+09
27	0.1000009E+09
28	0.000000
29	0.9999988E+08
30	0.9999996E+08
31	0.1000001E+09
32	0.1000000E+09
33	0.1000001E+09
34	0.1000002E+09
35	0.1000004E+09
36	0.9999938E+08
37	0.9999926E+08
38	0.9999933E+08
39	0.9999996E+08
40	0.9999991E+08
41	0.000000
42	0.1000001E+09
43	0.1000005E+09
44	0.9999942E+08
45	0.9999930E+08
46	0.9999938E+08
47	0.000000
48	0.9999996E+08
49	0.1000000E+09
50	0.1000002E+09
51	0.1000002E+09
52	0.9999917E+08
53	0.9999905E+08

54	0.9999913E+08
55	0.9999975E+08
56	0.9999971E+08
57	0.9999996E+08
58	77.92000
59	116.4000
60	0.9999896E+08
61	0.9999884E+08
62	0.9999892E+08
63	0.9999955E+08
64	0.9999950E+08
65	0.9999975E+08
66	0.9999996E+08
67	0.000000
68	0.000000
69	0.000000
70	0.000000
71	0.000000
72	0.000000
73	0.000000
74	0.000000
75	0.000000
76	0.000000
77	17.96000
78	394.8800
79	409.6000
80	517.6800
81	680.0000
82	620.0000
83	860.0000
84	542.0400
85	105.1200
86	390.4000
87	222.3200
88	0.000000