Random Assignment Problem (seed = 110204)

Original Cost matrix:

o	1	2	3	4	5	6	7	8	9
1	23	25	21	11	11	12	18	19	12
2	24	17	22	21	25	20	11	15	15
3	25	14	19	11	19	23	25	20	24
4	17	22	10	25	14	15	22	12	21
5	14	17	14	22	20	25	11	23	25
6	14	20	14	21	14	22	25	21	23
7	17	22	12	15	15	16	16	17	17
8	21	24	13	13	12	16	17	24	10
9	18	15	14	22	22	17	24	19	22

Row Reduction

Dual variables:

i	1	2	3	4	5	6	7	8	9	sum
U[i]	11	11	11	10	11	14	12	10	14	104
V[i]	0	0	0	0	0	0	0	0	0	0

Sum of all dual variables: 104

Reduced cost matrix

o	1	2	3	4	5	6	7	8	9
1	12	14	10	0	0	1	7	8	1
2	13	6	11	10	14	9	0	4	4
3	14	3	8	0	8	12	14	9	13
4	7	12	0	15	4	5	12	2	11
5	3	6	3	11	9	14	0	12	14
6	0	6	0	7	0	8	11	7	9
7	5	10	0	3	3	4	4	5	5
8	11	14	3	3	2	6	7	14	0
9	4	1	0	8	8	3	10	5	8

Zero reduced costs

o	1	2	3	4	5	6	7	8	9
1	+	+	+	0	0	+	+	+	+
2	+	+	+	+	+	+	0	+	+
3	+	+	+	0	+	+	+	+	+
4	+	+	0	+	+	+	+	+	+
5	+	+	+	+	+	+	0	+	+
6	0	+	0	+	0	+	+	+	+
7	+	+	0	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	0
9	+	+	0	+	+	+	+	+	+

Column Reduction

Dual variables:

i	1	2	3	4	5	6	7	8	9	sum
U[i]	11	11	11	10	11	14	12	10	14	104
V[i]	0	1	0	0	0	1	0	2	0	4

Sum of all dual variables: 108

Reduced cost matrix

o	1	2	3	4	5	6	7	8	9
1	12	13	10	0	0	0	7	6	1
2	13	5	11	10	14	8	0	2	4
3	14	2	8	0	8	11	14	7	13
4	7	11	0	15	4	4	12	0	11
5	3	5	3	11	9	13	0	10	14
6	0	5	0	7	0	7	11	5	9
7	5	9	0	3	3	3	4	3	5
8	11	13	3	3	2	5	7	12	0
9	4	0	0	8	8	2	10	3	8

Zero reduced costs

o	1	2	3	4	5	6	7	8	9
1	+	+	+	0	0	0	+	+	+
2	+	+	+	+	+	+	0	+	+
3	+	+	+	0	+	+	+	+	+
4	+	+	0	+	+	+	+	0	+
5	+	+	+	+	+	+	0	+	+
6	0	+	0	+	0	+	+	+	+
7	+	+	0	+	+	+	+	+	+
8	+	+	+	+	+	+	+	+	0
9	+	0	0	+	+	+	+	+	+

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Reduced cost matrix

o	1	2	3	4	5	6	7	8	9
1	12	15	12	2	0	0	9	8	3
2	11	5	11	10	12	6	0	2	4
3	12	2	8	0	6	9	14	7	13
4	5	11	0	15	2	2	12	0	11
5	1	5	3	11	7	11	0	10	14
6	0	7	2	9	0	7	13	7	11
7	3	9	0	3	1	1	4	3	5
8	9	13	3	3	0	3	7	12	0
9	2	0	0	8	6	0	10	3	8

Zero reduced costs

o	1	2	3	4	5	6	7	8	9
1	+	+	+	+	0	0	+	+	+
2	+	+	+	+	+	+	0	+	+
3	+	+	+	0	+	+	+	+	+
4	+	+	0	+	+	+	+	0	+
5	+	+	+	+	+	+	0	+	+
6	0	+	+	+	0	+	+	+	+
7	+	+	0	+	+	+	+	+	+
8	+	+	+	+	0	+	+	+	0
9	+	0	0	+	+	0	+	+	+

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6	0	7	3	10	0	7	14	7	11
7	2	8	0	3	0	0	4	2	4
8	9	13	4	4	0	3	8	12	0
9	2	0	1	9	6	0	11	3	8

Zero reduced costs

o	1	2	3	4	5	6	7	8	9
1	+	+	+	+	0	0	+	+	+
2	+	+	+	+	+	+	0	+	+
3	+	+	+	0	+	+	+	+	+
4	+	+	+	+	+	+	+	0	+
5	0	+	+	+	+	+	0	+	+
6	0	+	+	+	0	+	+	+	+
7	+	+	0	+	0	0	+	+	+
8	+	+	+	+	0	+	+	+	0
9	+	0	+	+	+	0	+	+	+

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Assignments:

i	->	j
1	->	6
2	->	7
3	->	4
4	->	8
5	->	1
6	->	5
7	->	3
8	->	9
9	->	2

Cost = 111

Problem ID:
Random Assignment Problem (seed = 430063)

Original Cost matrix:

o	1	2	3	4	5	6	7	8	9
1	15	18	24	17	17	13	12	19	14
2	23	10	22	17	12	23	17	18	21
3	24	15	14	18	10	14	11	19	21
4	15	24	12	14	12	15	21	19	16
5	17	12	18	20	14	18	17	17	10
6	18	21	22	17	16	10	22	25	14
7	19	19	12	22	22	17	23	20	11
8	14	14	11	24	23	15	21	19	15
9	20	11	22	25	20	14	11	17	19

Row Reduction

Dual variables:

i	1	2	3	4	5	6	7	8	9	sum
U[i]	12	10	10	12	10	10	11	11	11	97
V[i]	0	0	0	0	0	0	0	0	0	0

Sum of all dual variables: 97

Reduced cost matrix

o	1	2	3	4	5	6	7	8	9
1	3	6	12	5	5	1	0	7	2
2	13	0	12	7	2	13	7	8	11
3	14	5	4	8	0	4	1	9	11
4	3	12	0	2	0	3	9	7	4
5	7	2	8	10	4	8	7	7	0
6	8	11	12	7	6	0	12	15	4
7	8	8	1	11	11	6	12	9	0
8	3	3	0	13	12	4	10	8	4
9	9	0	11	14	9	3	0	6	8

Zero reduced costs

o	1	2	3	4	5	6	7	8	9
1	+	+	+	+	+	+	0	+	+
2	+	0	+	+	+	+	+	+	+
3	+	+	+	+	0	+	+	+	+
4	+	+	0	+	0	+	+	+	+
5	+	+	+	+	+	+	+	+	0
6	+	+	+	+	+	0	+	+	+
7	+	+	+	+	+	+	+	+	0
8	+	+	0	+	+	+	+	+	+
9	+	0	+	+	+	+	0	+	+

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Reduced cost matrix

o	1	2	3	4	5	6	7	8	9
1	0	6	12	3	5	1	0	1	3
2	10	0	12	5	2	13	7	2	12
3	11	5	4	6	0	4	1	3	12
4	0	12	0	0	0	3	9	1	5
5	3	1	7	7	3	7	6	0	0
6	5	11	12	5	6	0	12	9	5
7	4	7	0	8	10	5	11	2	0
8	0	3	0	11	12	4	10	2	5
9	6	0	11	12	9	3	0	0	9

Zero reduced costs

o	1	2	3	4	5	6	7	8	9
1	0	+	+	+	+	+	0	+	+
2	+	0	+	+	+	+	+	+	+
3	+	+	+	+	0	+	+	+	+
4	0	+	0	0	0	+	+	+	+
5	+	+	+	+	+	+	+	0	0
6	+	+	+	+	+	0	+	+	+
7	+	+	0	+	+	+	+	+	0
8	0	+	0	+	+	+	+	+	+
9	+	0	+	+	+	+	0	0	+

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