

# Parliamentary Election Based Algorithm

## Parameters:-

$P_n = 1000$ ; (Total Population)

$M = 10$ ; (Parties)

$P_m = 0.3$ ; (Probability of Merging worst 2 parties)

$P_d = 0.05$ ; (Probability of deleting worst party)

Iterations = 10;

$M = 0.58$ ;

$N = 0.23$ ; (M and N are the fraction values used to determine party fitness)

$\eta = 0.3$  (factor during influencing population of parties)

## Result on Data Sets

Karate Club:- (34 Nodes, 78 edges)

Best fitness value = 0.4042571

2nd Best fitness value = 0.3810815

3rd Best fitness value = 0.3692472

Columns 1 through 20

1 1 2 1 3 3 3 1 2 5 3 4 1 1 2 2 3 1 2 1

Columns 21 through 34

2 1 2 2 2 2 2 2 2 2 2 2 2 2

## Dolphin club:- (62 Nodes, 159 Edges)

Best fitness value = 0.4742099

2nd Best fitness value = 0.4705906

3rd Best fitness value = 0.4705906

Columns 1 through 22

2 3 2 1 1 3 3 3 1 3 2 1 1 3 1 1 1 3 1 3 1 1

Columns 23 through 44

3 1 1 3 3 3 2 1 2 3 3 1 1 3 1 1 1 3 1 3 2 1

Columns 45 through 62

1 1 1 2 3 1 1 1 1 3 3 1 3 3 1 1 3 1

## American College Football (115 Nodes, 613 Edges)

Best fitness value = 0.4647510

2nd Best fitness value = 0.4627324

3rd Best fitness value = 0.4608669

Columns 1 through 21

6 4 1 9 6 5 7 3 3 3 5 6 7 1 7 1 3 8 9 9 8

Columns 22 through 42

3 3 3 6 4 7 8 6 9 9 7 1 4 9 9 9 4 7 9 5 5

Columns 43 through 63

9 7 8 4 3 1 5 2 6 3 5 2 9 9 8 8 2 8 9 9 4

Columns 64 through 84

8 3 8 8 2 3 6 8 9 9 2 2 8 8 3 3 9 4 5 9 2

Columns 85 through 105

5 7 8 8 2 4 6 8 8 3 9 8 8 5 5 7 1 9 5 4 3

Columns 106 through 115

4 1 5 3 4 2 3 8 8 2

## Strike Dataset (24 nodes, 38 Edges)

Best fitness value = 0.5972992

2nd Best fitness value = 0.5972992

3rd Best fitness value = 0.5972992

Columns 1 through 18

1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3
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Columns 19 through 24

3	3	3	3	3	3
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## Jazz Musician (198 Nodes, 2742 Edges)

Best fitness value = 0.4002850

2nd Best fitness value = 0.3861308

3rd Best fitness value = 0.3761156

Columns 1 through 27

1	2	1	1	2	2	2	2	1	1	2	1	1	1	1	2	1	1	1	1	1	2	1	2	2	2	2
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Columns 28 through 54

2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	8	3	3	3	3	2
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Columns 55 through 81

2	2	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	2	1	4	5	3	2	2
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Columns 82 through 108

2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2
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Columns 109 through 135

2	2	2	2	2	1	2	2	2	2	2	2	1	2	2	2	2	2	2	1	1	3	3	3	1	2	1
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Columns 136 through 162

1	1	2	2	2	3	3	3	2	1	1	1	1	1	1	6	1	1	3	2	3	2	1	1	1	3	1
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Columns 163 through 189

1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	3	3	3	3	3	3	3	3	1	1	1
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Columns 190 through 198

3	2	1	2	2	2	4	7	2
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## Books on US Politics (105 Nodes, 441 Edges)

Best fitness value = 0.4939737

2nd Best fitness value = 0.4855230

3rd Best fitness value = 0.4764296

Columns 1 through 22

2 2

Columns 23 through 44

2 2 2 2 2 2 1 2 1 1 2 2 2 2 2 2 2 2 2 2 2 3

Columns 45 through 66

2 2 2 2 2 1 3 4 5 2 2 2 2 2 4 1 1 1 1 1 4 4

Columns 67 through 88

1 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Columns 89 through 105

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4 4

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