

COMP SCI 5401 FS2017 Assignment 2b

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Experiment parameters and graphs

1 IPD Results

1.1 Graphs



1.2 Result Tables

Problem 1a: final results

	A	B	C	D	E	F	G	H
1	2b: IPD RUN						2a: IPD RUN	
2	Run #	Average Fitness	Best Fitness				Run #	Best Fitness
3	1	2.4	3				1	3.4
4	2	2.18	3				2	3.4
5	3	2.53	5				3	3.4
6	4	2.37	3				4	3.4
7	5	2.52	5				5	3.4
8	6	1.93	5				6	3.4
9	7	2.6	3				7	3.4
10	8	1.53	5				8	3.4
11	9	2.8	3				9	3.4
12	10	1.13	5				10	3.4
13	11	2.98	5				11	3.4
14	12	2.22	3				12	3.4
15	13	2.93	5				13	3.4
16	14	2.68	5				14	3.4
17	15	2.32	5				15	3.4
18	16	1.4	5				16	3.4
19	17	1.25	5				17	3.4
20	18	2.48	5				18	3.4
21	19	1.62	5				19	3.4
22	20	3	3				20	3.4
23	21	1.47	5				21	3.4
24	22	1.65	5				22	3.4
25	23	2.08	5				23	3.4
26	24	2.45	3				24	3.4
27	25	1.33	5				25	3.4
28	26	1.25	5				26	3.4
29	27	2.35	3				27	3.4
30	28	1.4	5				28	3.4
31	29	2.5	3				29	3.4
32	30	2	5				30	3.4

1.3 Statistical Analysis

	A	B	C	D	E
1	Average Best Fitness				
2	subject #	Fitness 2a	fitness 2b	x-y	(x-y)^2
3	1	3.4	3	0.4	0.16
4	2	3.4	3	0.4	0.16
5	3	3.4	5	-1.6	2.56
6	4	3.4	3	0.4	0.16
7	5	3.4	5	-1.6	2.56
8	6	3.4	5	-1.6	2.56
9	7	3.4	3	0.4	0.16
10	8	3.4	5	-1.6	2.56
11	9	3.4	3	0.4	0.16
12	10	3.4	5	-1.6	2.56
13	11	3.4	5	-1.6	2.56
14	12	3.4	3	0.4	0.16
15	13	3.4	5	-1.6	2.56
16	14	3.4	5	-1.6	2.56
17	15	3.4	5	-1.6	2.56
18	16	3.4	5	-1.6	2.56
19	17	3.4	5	-1.6	2.56
20	18	3.4	5	-1.6	2.56
21	19	3.4	5	-1.6	2.56
22	20	3.4	3	0.4	0.16
23	21	3.4	5	-1.6	2.56
24	22	3.4	5	-1.6	2.56
25	23	3.4	5	-1.6	2.56
26	24	3.4	3	0.4	0.16
27	25	3.4	5	-1.6	2.56
28	26	3.4	5	-1.6	2.56
29	27	3.4	3	0.4	0.16
30	28	3.4	5	-1.6	2.56
31	29	3.4	3	0.4	0.16
32	30	3.4	5	-1.6	2.56
33	SUM:			-28	52.8
34					
35		t-value:	-0.18387		df: 29
36		P-Value:	0.8554		t-value: 2.045

So according to the statistical analysis (shown above) the p-value for both best fitness and average fitness is not low enough to say that the results are statistically significant. That means that the t-value of -0.21508 and the t-value of -0.98697, computed using the tables given, were not far enough apart from the t-value given of 2.045 to make the difference in the fitness values statistically significant.

1.4 EA Configurations

If you want to get the same results you have to change the newSeed variable to 0 (Zero) in the configuration file in order to use the previous seed.

Using config1.txt

```
1 runs = 30
2 fitness = 10000
3
4 k = 5
5 d = 10
6 l = 30
7 n = 5
8 mu = 0.01
9 lambda = 2
10 parentNumber = 5
11 p = 1
12 terminationEvals = 3
13
14
15 prob_log_file = logs/log1.txt
16 prob_solution_file = solutions/solution1.txt
17
18
19 Initialize: Ramped_halfandhalf = 1
20
21 parentSelection: Fitness_Proportional_Selection = 1, Over_Selection
    = 0
22
23 Recombination: subTree_Crossover_Recombination = 1
24
25 Mutation: subTree_Crossover_Mutation = 1
26
27 survivalSelection: Truncation = 1, kTournament = 0
28
29 bloatControl: parsimonyPressure = 1
30
31 Termination: numEvals = 1, noChange = 0
32
33 newSeed = 1
```