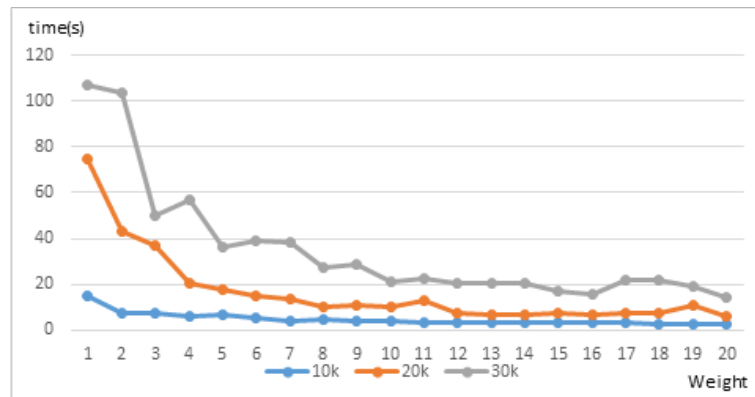


I. Plot

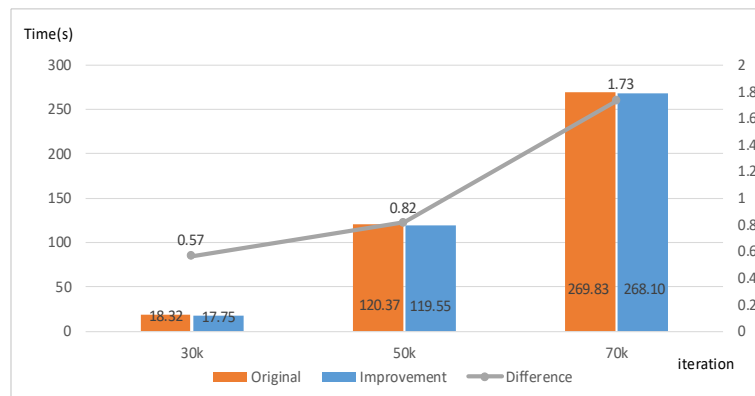
1. Investigation Test

Run Trial and Division weight 1 to 20 sequentially with background 20 weighted infinite loop(1~20)



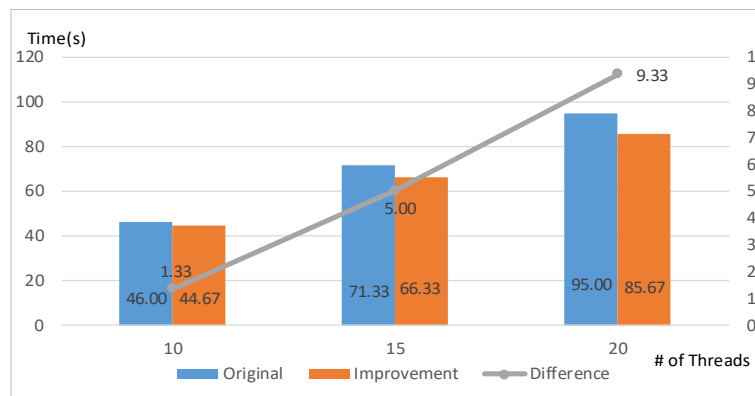
2. Improvement Test 1

Run 30 Trial and Division simultaneously given iteration.



3. Improvement Test 2

multiple thread creating Trial and Division test



II. Data

1. Investigation Test

Run Trial and Division weight 1 to 20 sequentially with background 20 weighted infinite loop(1~20)

Weight	10k (s)			20k (s)			30k (s)			Average (s)		
	Trial 1	Trial 2	Trial 3	Trial 1	Trial 2	Trial 3	Trial 1	Trial 2	Trial 3	10k	20k	30k
1	16	16	13	55	69	100	95	146	80	15.00	74.67	107.00
2	9	7	7	44	20	65	78	117	117	7.67	43.00	104.00
3	7	9	6	55	14	42	50	89	11	7.33	37.00	50.00
4	5	6	6	18	16	27	75	66	29	5.67	20.33	56.67
5	5	5	11	9	24	19	33	45	31	7.00	17.33	36.33
6	9	3	3	14	17	14	29	43	46	5.00	15.00	39.33
7	4	4	4	12	15	14	37	42	35	4.00	13.67	38.00
8	5	3	6	11	9	11	28	32	21	4.67	10.33	27.00
9	4	4	4	12	9	11	26	28	33	4.00	10.67	29.00
10	4	4	3	9	16	6	18	23	22	3.67	10.33	21.00
11	3	3	3	11	15	12	26	24	18	3.00	12.67	22.67
12	2	3	4	9	7	6	20	22	20	3.00	7.33	20.67
13	3	3	3	6	7	8	20	17	24	3.00	7.00	20.33
14	3	4	3	6	12	3	21	21	19	3.33	7.00	20.33
15	3	3	3	7	10	5	18	19	14	3.00	7.33	17.00
16	3	3	4	8	10	3	18	13	15	3.33	7.00	15.33
17	5	3	2	7	10	6	23	17	26	3.33	7.67	22.00
18	2	3	2	8	6	9	18	18	29	2.33	7.67	21.67
19	2	2	3	12	10	10	17	18	22	2.33	10.67	19.00
20	3	3	2	7	7	4	16	12	15	2.67	6.00	14.33

2. Improvement Test 1

Run 30 Trial and Division simultaneously given iteration.

30k (s)				50k (s)				70k (s)			
Original		Improvement		Original		Improvement		Original		Improvement	
Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2
19	19	11	18	115	113	127	126	263	275	259	276
19	16	20	19	124	127	127	108	279	251	266	282
20	20	20	16	125	120	112	125	266	277	271	283
20	20	20	19	120	128	127	105	279	261	276	234
19	20	17	14	126	127	115	120	279	262	277	282
17	20	20	19	117	119	128	117	265	276	276	254
18	20	20	14	126	117	123	107	244	277	275	280
19	19	20	17	124	111	125	127	265	262	277	259
16	18	19	17	126	115	116	127	274	282	270	278
20	17	20	19	123	128	125	109	266	272	278	261
17	15	18	16	107	126	77	119	264	280	275	264
17	20	21	18	119	109	125	117	281	274	266	279
20	19	16	17	127	128	127	119	272	278	280	277
19	15	20	19	127	124	112	126	273	282	243	263
18	20	21	15	123	127	105	127	279	251	277	282
17	19	20	17	116	128	120	115	264	263	273	268
18	18	20	18	127	129	127	124	253	272	275	279
20	16	19	18	127	128	126	126	266	281	242	271
13	19	16	19	127	126	117	127	268	280	269	259
19	20	20	16	123	106	119	127	280	260	225	235
17	20	16	18	125	96	127	126	278	282	278	273
19	17	21	19	114	121	120	127	222	274	275	236
20	19	20	19	117	127	111	122	276	281	261	283
19	19	18	19	111	127	123	127	281	261	247	273
16	18	18	16	103	116	124	113	280	266	260	272
20	17	19	19	104	112	92	122	281	282	271	263
14	18	19	17	104	129	127	114	263	264	277	282
12	20	20	14	127	123	124	108	261	284	270	281
19	20	19	17	124	106	120	127	243	267	278	282
20	20	16	19	123	128	127	114	279	269	224	284

iteation	Original (s)	Improvement (s)	Difference (s)
30k	18.32	17.75	0.57
50k	120.37	119.55	0.82
70k	269.83	268.10	1.73

Average of the results

3. Improvement Test 2.

multiple thread creating Trial and Division test

# of thread	Original (s)			Improvement (s)			Average(s)		Difference (s)
	Trial 1	Trial 2	Trial 3	Trial 1	Trial 2	Trial 3	Original (s)	Improvement (s)	
10	45	47	46	44	44	46	46.00	44.67	1.33
15	68	73	73	66	66	67	71.33	66.33	5.00
20	92	97	96	84	82	91	95.00	85.67	9.33