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Program Structures & Algorithms

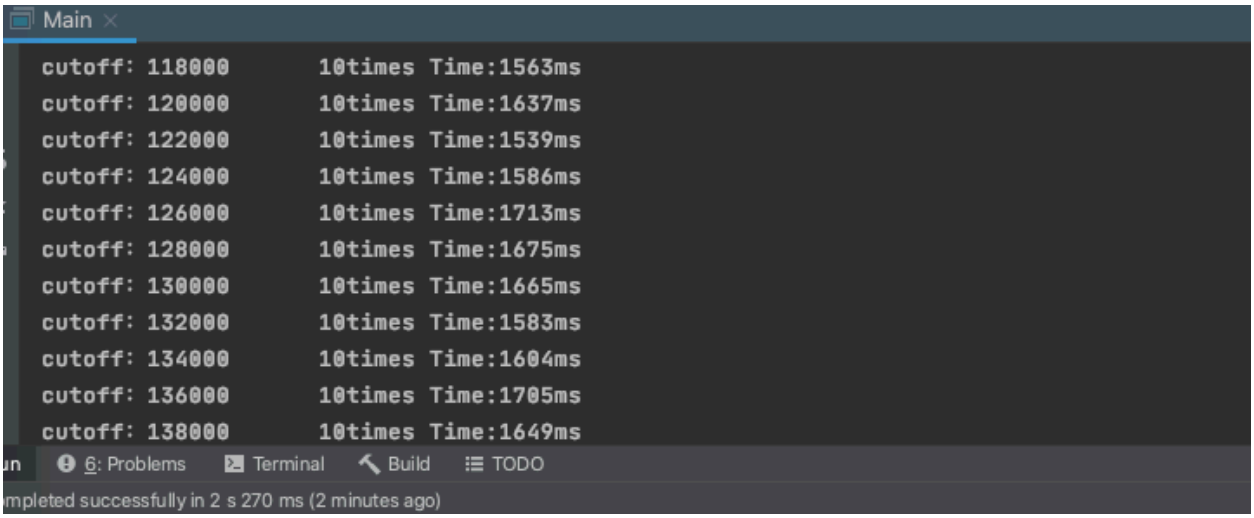
Fall 2021

Assignment No. 5

- **Task (List down the tasks performed in the Assignment)**

  Parallel Sorting

1. **Output (Snapshot of Code output in the terminal)**



Conclusion:

1. **When the amount of data is large, parallel sorting can improve efficiency at some occacions.**
2. **When the cutoff setting value is too small, that is, when the number of threads that need to be created is large, the sorting efficiency is reduced, and it is guessed that creating threads consumes too much resources and waste some time.**
3. **When the thread is over 16, the result alomost did not change anymore.**
4. **Increase the amount of thread may improve the effiency or decrease thr effciency.**

	A	B	C	D	E	F	G
18	0.09	149.8	0.09	167.2	0.09	243.4	
19	0.095	151.5	0.095	142.4	0.095	211.4	
20	0.1	158.8	0.1	150.8	0.1	204.6	
21	0.105	154.5	0.105	183.6	0.105	187.6	
22	0.11	156.6	0.11	180.8	0.11	187.6	
23	0.115	172.4	0.115	193.7	0.115	178.9	
24	0.12	154.7	0.12	177.5	0.12	190.5	
25	0.125	159.8	0.125	146.4	0.125	174.9	
26	0.13	179.2	0.13	151.1	0.13	184.2	
27	0.135	220	0.135	145.6	0.135	195.4	
28	0.14	173.6	0.14	146.4	0.14	195.7	
29	0.145	147.4	0.145	140.6	0.145	190.1	
30	0.15	143.9	0.15	153.2	0.15	188.5	
31	0.155	148.6	0.155	187.4	0.155	209.8	
32	0.16	170.3	0.16	170	0.16	207.9	
33	0.165	147.6	0.165	141.6	0.165	214.1	
34	0.17	140.7	0.17	149.3	0.17	194.1	
35	0.175	139.4	0.175	136.2	0.175	198.9	
36	0.18	145.7	0.18	149.6	0.18	215	
37	0.185	146.4	0.185	182	0.185	197.6	
38	0.19	154.1	0.19	161.2	0.19	211.9	
39	0.195	136.1	0.195	135.1	0.195	208.2	
40	0.2	145.4	0.2	135.4	0.2	181.6	
41	0.205	151.6	0.205	157.3	0.205	182.6	
42	0.21	155.2	0.21	144.2	0.21	194.4	
43	0.215	204.2	0.215	174.7	0.215	191.1	
44	0.22	230.2	0.22	178.4	0.22	191.2	
45	0.225	217.1	0.225	141.1	0.225	179.4	
46	0.23	156.9	0.23	140.4	0.23	179.2	
47	0.235	149.4	0.235	142.8	0.235	186.7	
48	0.24	157.3	0.24	148.5	0.24	196	
49	0.245	185.5	0.245	176.5	0.245	185	
50	0.25	152.1	0.25	140.8	0.25	196.6	
51		165.132		161.552		197.8	
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Overall Data

	A	B	C	D	E	F	G	H
1	cutoff	time(ms)	thread					
2	1000000	743	2					
3	500000	511	4					
4	250000	733	8					
5	125000	699	16					
6	62500	703	32					
7	31250	712	64					
8	15625	711	28					
9	7812	723	256					
10								
11								