ЗВІТ

по Лабораторній роботі №4 на тему

"Parallel Methods of Data Sorting"

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групи ТТП - 2
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Table 4.3. The Example of Data Sorting by the Parallel Method of the Odd-Even Transposition

Iteration Number and Type	Processors			
	1	2	3	4
Initial Data	13 55 59 88	29 43 71 85	2 18 40 75	4 14 22 43
1 odd (1,2),(3.4)	13 55 59 88	29 43 71 85	2 18 40 75	4 14 22 43
	13 29 43 55	59 71 85 88	2 4 14 18	22 40 43 75
2 even (2,3)	13 29 43 55	59 71 85 88	2 4 14 18	22 40 43 75
	13 29 43 55	2 4 14 18	59 71 85 88	22 40 43 75
3 odd (1,2),(3.4)	13 29 43 55	2 4 14 18	59 71 85 88	22 40 43 75
	2 4 13 14	18 29 43 55	22 40 43 59	71 75 85 88
4 even (2,3)	2 4 13 14	18 29 43 55	22 40 43 59	71 75 85 88
	2 4 13 14	18 22 29 40	43 43 55 59	71 75 85 88

Tau = 0.000000003142601270127344, рахувалось для кількості елементів 30 000 по формулі: $T_1 = (DataSize \cdot (DataSize - 1)/2) \cdot \tau$,

Test Number	Data Amount	Serial Bubble Sorting	Serial Standard Sorting	Parallel algorithm		
				2	4	8
				Time	Time	Time
1	10	0.000000000	0.000000000	0.004365	0.002367	0.016323
2	100	0.000000000	0.000000000	0.001559	0.002514	0.015938
3	10000	0.168000000	0.002000000	0.214500	0.192926	0.186072
4	20000	0.670000000	0.004000000	0.845234	0.784138	0.709709
5	30000	1.520000000	0.006000000	1.912109	1.683813	1.608198
6	40000	2.690000000	0.009000000	3.367433	2.970998	2.811220
7	50000	4.221000000	0.012000000	5.409477	4.758024	4.397095

Data Size	2 processors		4 processors		8 processors	
	Model	Experiment	Model	Experiment	Model	Experiment
10	1.06844 × 10^-7	0.004365	7.87729 × 10^-8	0.002367	6.89624 × 10^-8	0.016323
100	1.6298 × 10^-6	0.001559	1.06844 × 10^-6	0.002514	8.29980 × 10^-7	0.015938
10000	0.000275271	0.214500	0.0001629866	0.192926	0.0001110692	0.186072
20000	0.000584344	0.845234	0.0001629866	0.784138	0.0002305888	0.709709
30000	0.000906174	1.912109	0.0005291399	1.683813	0.0003532979	1.608198
40000	0.001236290	3.367433	0.0007195486	2.970998	0.0004780782	2.811220
50000	0.001572567	5.409477	0.0003381652	4.758024	0.0006043988	4.397095