CS 433 ASSIGNMENT 2 REPORT
GROUP 13 - BY

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Following are runtime profiles of all the implemented locks: (All times are in seconds)

No of threads	POSIX mutex	binary semaphores	#pragma omp critical	Lamport bakery	spin-lock	tts	Ticket lock	Array lock	Best Time
1	0.1922	0.2059	0.1791	1.3386	0.1392	**0.1385**	0.7256	0.8425	**0.1385**
2	1.1229	5.9804	**0.8669**	6.9406	1.2553	1.5033	2.5766	7.5791	**0.8669**
4	**2.4470**	14.2250	2.7057	17.0798	7.6715	7.7510	10.9633	25.4464	**2.4470**
8	**11.1905**	43.9226	11.9280	67.9623	41.0485	28.8870	46.1652	134.8730	**11.1905**
16	**22.5643**	81.4414	25.9448	310.3423	110.2342	186.1252	85.2323	736.2432	**22.5643**

Following are runtime profiles of all the implemented Barrier: (All times are in seconds)

No of threads	Centralised	Tree with busy wait	Posix with cv	Tree with cv	Posix barrier interface	Omp barrier	Best Time
1	0.0448	0.0085	0.0478	0.0432	0.4929	**0.0054**	**0.0054**
2	0.2096	0.2549	0.9249	1.0455	3.1210	**0.0050**	**0.0050**
4	3.3797	0.4192	23.6301	24.8931	6.1561	**0.0052**	**0.0052**
8	17.1771	0.8669	52.6682	46.0700	14.5442	**0.0052**	**0.0052**
16		4.2321	160.3422	137.3422		**0.0051**	**0.0051**

Folder Structure:

Main/

/sunc_lib.c: contains all the locks and barriers implemented. You just need to uncomment the corresponding function in the main function of sync_lib.c to use the lock and barrier

/Q1: contains all the locks implemented separately

/Q2: contains all the barriers implemented separately

Function Name	Lock/Barrier
main_array(argc,argv);	Array Lock
main_cen(argc,argv);	Centralised Barrier
main_cv(argc,argv);	Tree Conditional Variable
main_lamport(argc,argv);	Lamport Bakery
main_pbar(argc,argv);	Posix Barrier Interface
main_posix(argc,argv);	Posix Lock
main_spin(argc,argv);	Spin Lock
main_ticket(argc,argv);	Ticket Lock
main_tree_busy(argc,argv);	Tree Busy Wait Lock
main_tts(argc,argv);	Test Test Set
main_omp(argc,argv);	Omp Critical Lock
main_omp_bar(argc,argv);	Omp Barrier
main_pcond(argc,argv);	Posix Conditional Variable Barrier