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etime.c

static variables call consist between different function

Here elapsed_time is 0.0 it returns. after some time when we call elapsed_time function it return 0.0 but here due to static we call it previous base address I mean store value .

Struct timeval is predefined function behaves like int and float and gettime(variable)is store in that variable it claculates gap between the function calls..

We are passing gettime and time zone based on system perform according to that time zone.

Elapsed_time=elapsed_time if we are not declare means it doesn't add previous time

Example: present task take 20seconds time previous task takes 40seconds it always implements fresh time

Here in the function I am not dividing with 10^6 because msec to sec because I read it in online msec will tell exact time performance of the task than seconds.

Finally, it return elapsed_time

crt.c

same coding here to implement two executable code

when I give ./pcrt processor and ./tcrt thread

here I type ./pcrt 1024 I take pcrt argv[0] and 1024 takes argv[1]

comparison in argv[0] matches string with pcrt it call ep(size)

here I type ./tcrt 1024 I take tcrt argv[0] and 1024 takes argv[1]

comparison in argv[0] matches string with tcrt it call et(argv[1])

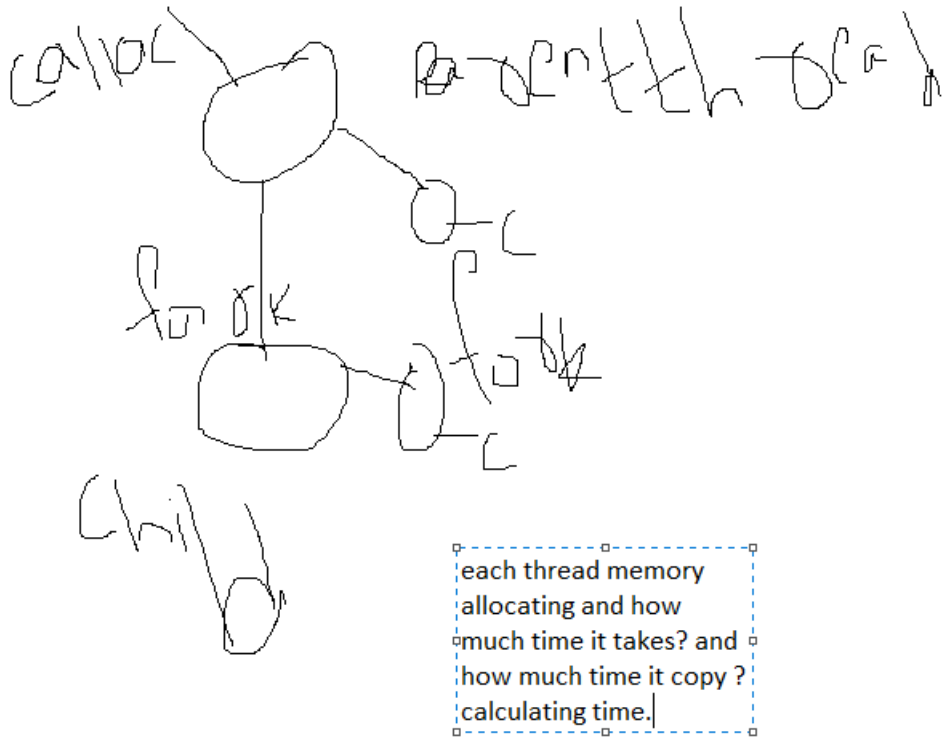
Ep.c

1024 kb means double size 1024*1024 that’s why doubled (size*size)

In main function only it convert int size=atoi(argv[1])

And passed into ep(size) in tcrt it calls another thread that is why not converting atoi in the et function.

Any processor is executed by parents processor and allocate memory.



Et.c

After creating thread we call

Etime() it call starting time zero

We call foo function and passed argv in that we passed how many threads have to create and how many square root to find the calculation .

In argv how the value is passed?

In crt file if tcrt matches with argv[0] it passed to et(argv[1]);(0,1024,----) it stores character array string.

Argv [1]passed and stored in vargp[1] atoi convert string to int and settled in intsize.

And placed in buffer because we are not fixing the memory every time.a[size] 1024 it allocate memory from zero to size.

It stores the value in the array of index

Next we calculate ending time and stored in time and then it print elapsed time.

mm_thr.c

In main method first I allocate random variables in a matrix(rows and column).

Next step thread count based on input users

Next pthread barrier to synchronize all the threads (to meet all together it is different from pthread_join)

In pthread_create(&compuatation,id) it call computation function through malloc dynamically assign the memory and set the value in id and next it jump computation method above in the code.(here I written below in the report)

It counts the time of each thread and displays total time taken for all threads process.(in project given 1,2,4,8,16)

In computation:

When i declare id as pointer variable allocating the memory and zero is stored means first thread come and declared in computation args it return types void pointer (int *) it convert to int type conversion and again *for pointer address.

Here M=4 I given means

240/4=60

Coming to logic

for(int i=k*m;i<=((k+1)*m)-1;i++)

here first k=0 (int i=0*60;i<=((0+1)*60)-1;i++)

(int i=0;i<=59;i++)

First thread goes upto 59

Second starts at 60 end at 119 (int i=1*60;i<=((1+1)*60)-1;i++)

(int i=60;i<=119;i++)

Third starts at 120 ends at 179

Fourth starts at 180 ends at 239

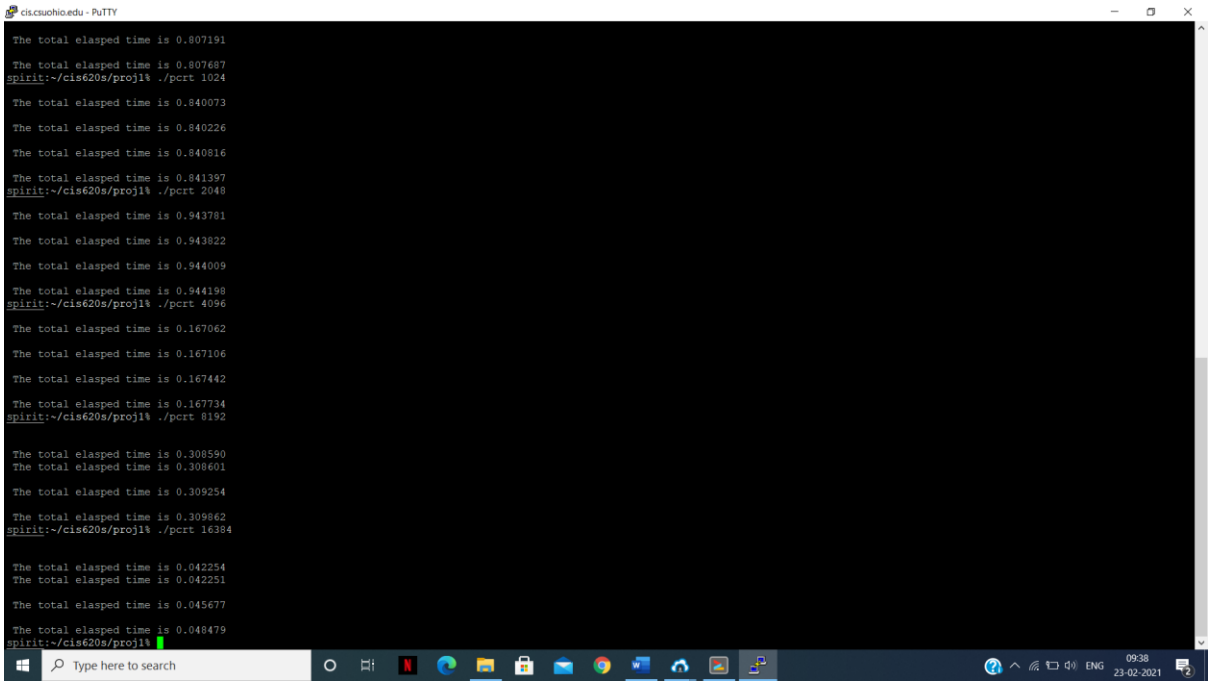
After calculating and stored results in c matrix

Return etime to the timings.

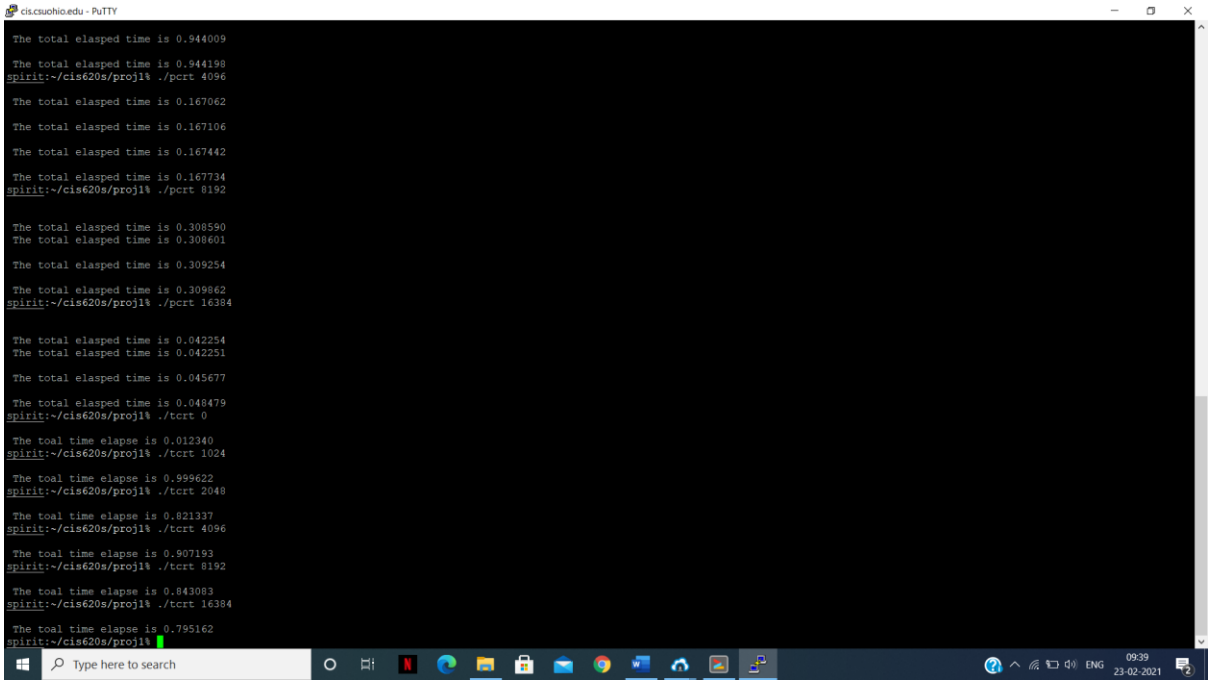
Kilobytes	pcrt	tcrt
0	0.807687	0.12340
1024	0.841397	0.999622
2048	0.944198	0.821337
4096	0.167734	0.907193
8192	0.309862	0.843083
16384	0048479	0.795162

Processor is heavy weight and thread is light weight it basically thread take less time compared to processor .

Pcrt

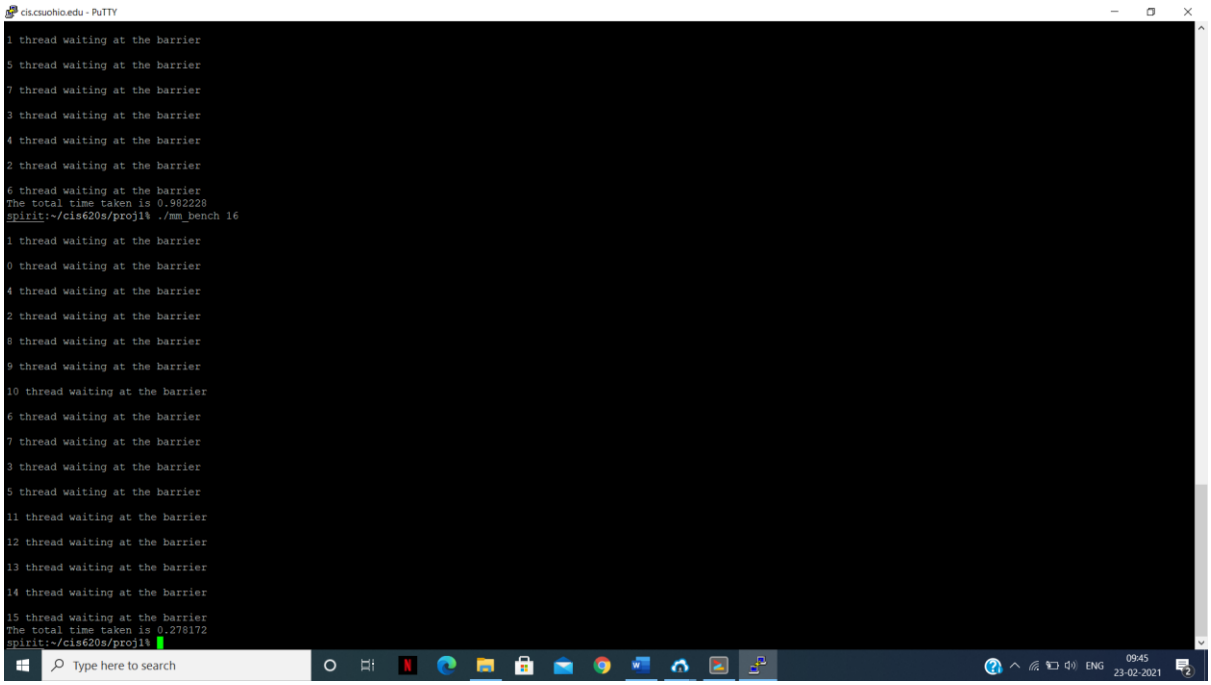


tcrt

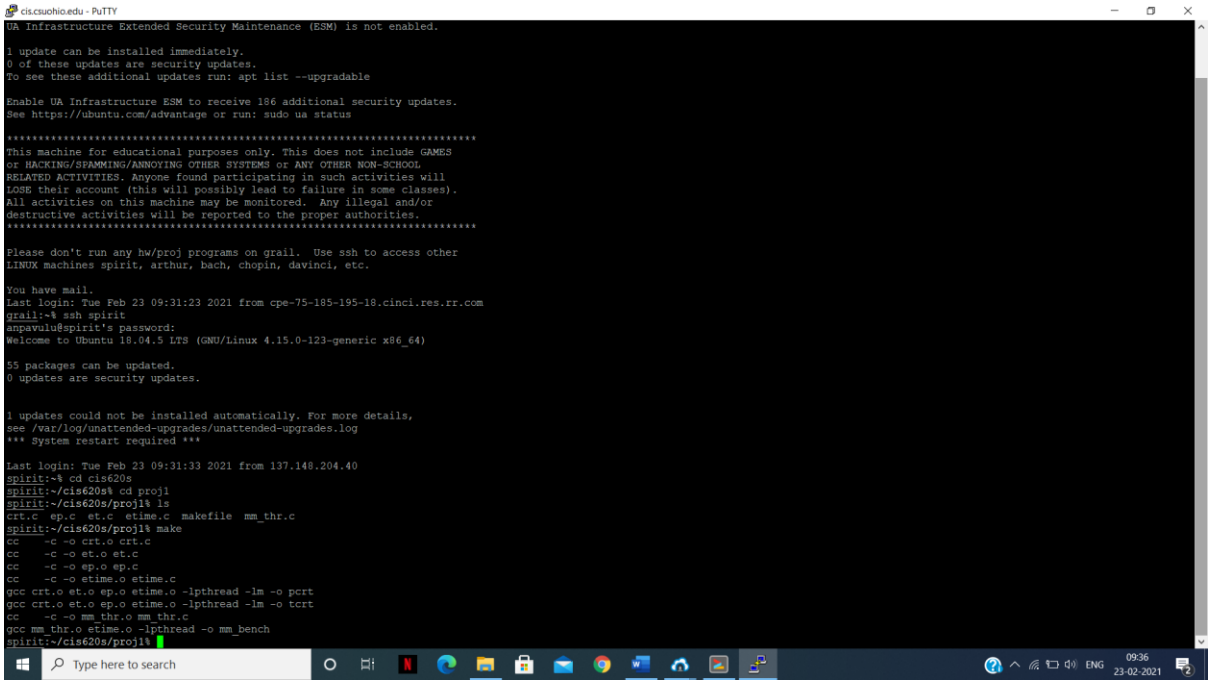


mm_bench

1	0.095565
2	0.181008
4	0.333158
8	0.982228
16	0.278172



Make file:



Debugging Experience:

While linking the library in the make file at correct place -lpthread,-lm it came error and later fixed it by watching videos. In function also declaration variables logics over all I can say nice because I am getting the results.

Project Status : working