

LAB FAT

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Question 4

Source Code

```
#include <stdio.h>
#include <omp.h>

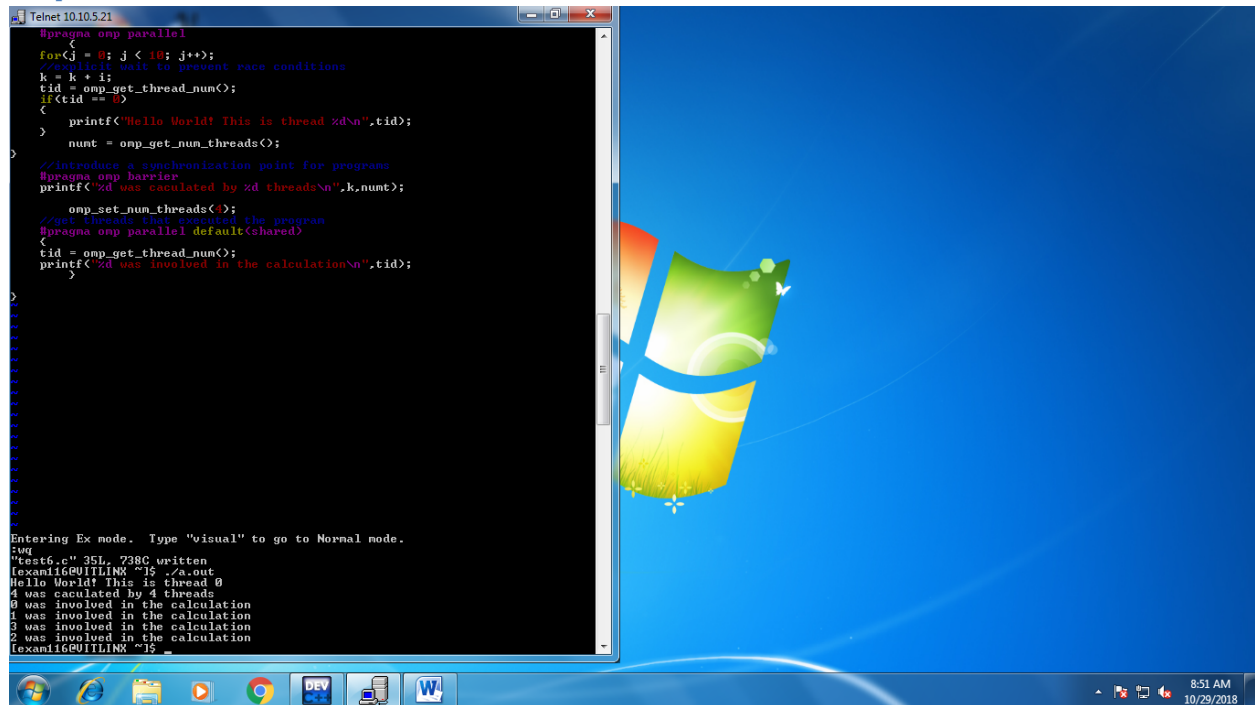
int tid;
int main()
{
    int j, k=0,numt,i=1;

    omp_set_num_threads(4);
    //parallelize
    #pragma omp parallel
    {
        for(j = 0; j < 10; j++);
        //explicit wait to prevent race conditions
        k = k + i;
        tid = omp_get_thread_num();
        if(tid == 0)
        {
            printf("Hello World! This is thread %d\n",tid);
        }
        numt = omp_get_num_threads();
    }

    //introduce a synchronization point for programs
    #pragma omp barrier
    printf("%d was caculated by %d threads\n",k,numt);

    omp_set_num_threads(4);
    //get threads that executed the program
    #pragma omp parallel default(shared)
    {
        tid = omp_get_thread_num();
        printf("%d was involved in the calculation\n",tid);
    }
}
```

Output



```
Telnet 10.10.5.21
#pragma omp parallel
{
    for(j = 0; j < 10; j++){
        //explicit wait to prevent race conditions
        k = k + i;
        tid = omp_get_thread_num();
        if(tid == 0)
        {
            printf("Hello World! This is thread %d\n",tid);
        }
        nunt = omp_get_nun_threads();
    }
    //introduce a synchronization point for programs
    #pragma omp barrier
    printf("%d was caculated by %d threads\n",k,nunt);
    omp_set_nun_threads(4);
    //get thread, this executed the program
    #pragma omp parallel default(shared)
    {
        tid = omp_get_thread_num();
        printf("%d was involved in the calculation\n",tid);
    }
}

Entering Ex mode. Type "visual" to go to Normal mode.
[exam116@VITLINUX ~]$ ./a.out
Hello World! This is thread 0
4 was caculated by 4 threads
0 was involved in the calculation
1 was involved in the calculation
3 was involved in the calculation
2 was involved in the calculation
[exam116@VITLINUX ~]$
```

[exam116@VITLINUX ~]\$./a.out

Hello World! This is thread 0

4 was caculated by 4 threads

0 was involved in the calculation

1 was involved in the calculation

3 was involved in the calculation

2 was involved in the calculation