

Parallel and Distributed Computing
CSE4001
Fall Semester 2020-21

Lab Assignment 4

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Aim:

- Write a simple OpenMP program to demonstrate Arithmetic Operation using Section Clause.

Source Code:

```

isshaanohri — isshaanohri@pdc-lab: ~/Assignment_4 — ssh isshaanohri@34.67.0.55 — 104x61
#include <stdio.h>
#include <omp.h>

// EXPRESSION: (a+b)+(c-d)+(e*f)+(h/g)

int addition(int x, int y){
    return x + y;
}

int subtraction(int x, int y){
    return x - y;
}

int multiplication(int x, int y){
    return x * y;
}

int division(int x, int y){
    return x / y;
}

void main(){
    int sum = 0, diff = 0, prod = 0, div = 0, total = 0;

    #pragma omp parallel sections
    {
        #pragma omp section
        sum = addition(6,3);

        #pragma omp section
        diff = subtraction(6,3);

        #pragma omp section
        prod = multiplication(6,3);

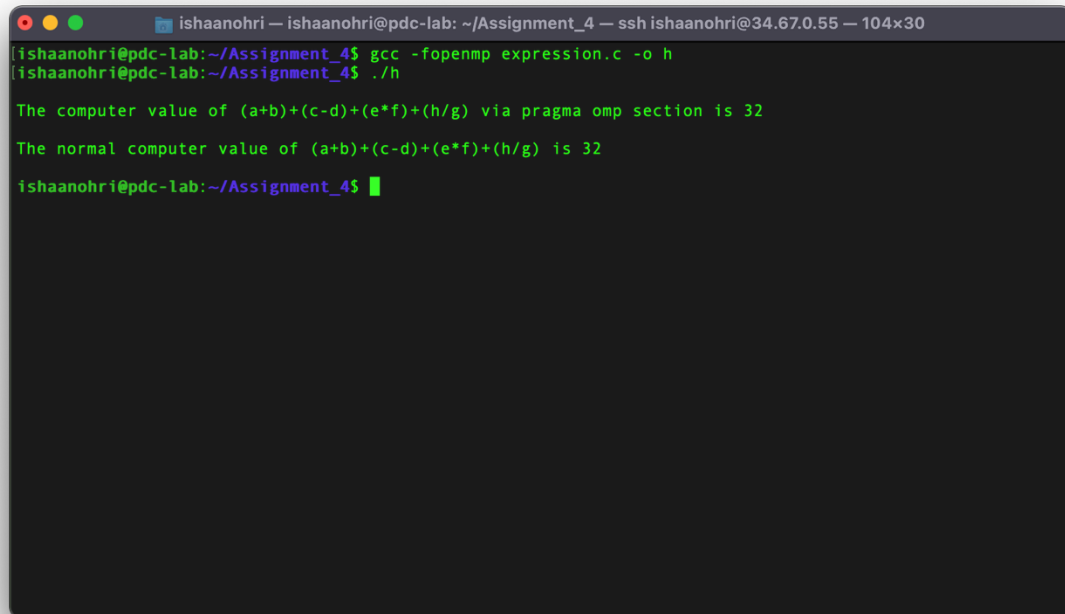
        #pragma omp section
        div = division(6,3);

        #pragma omp section
        total = sum + diff + prod + div;
    }

    printf("\nThe computer value of (a+b)+(c-d)+(e*f)+(h/g) via pragma omp section is %d\n", total);
    printf("\nThe normal computer value of (a+b)+(c-d)+(e*f)+(h/g) is %d\n", ((6+3) + (6-3) + (6*3) + (6/3)));
}

```

Execution:



```
ishaanohri@pdc-lab:~/Assignment_4$ gcc -fopenmp expression.c -o h
ishaanohri@pdc-lab:~/Assignment_4$ ./h

The computer value of (a+b)+(c-d)+(e*f)+(h/g) via pragma omp section is 32
The normal computer value of (a+b)+(c-d)+(e*f)+(h/g) is 32
ishaanohri@pdc-lab:~/Assignment_4$
```

Result:

From this experiment I understood the usage of *section clause*. By the use of section clause, I verified the result of various arithmetic operations like addition, subtraction, multiplication and division. The results were calculated separately by the use of pragma section and was later verified by comparing with the normal method. The result of both the ways matched and hence was correct.

The above experiment was conducted and all results along with the source code have been attached above in the document. The experiment was assisted by Dr Deepak. I thank sir for his assistance.