

Fall Sem 2021-22

Assignment: 4

Date: 28/09/21

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Reg no: 19BCE2250

Course: Parallel and distributed computing LAB - CSE4001

Slot: L55+L56

Aim:

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

Ans –

SOURCE CODE:

```
#include <stdio.h>
#include <omp.h>
int a,b;
//Sum function
void sum(a,b){
    int sum = a+b;
    printf("1.Sum is: %d\n",sum);
}
//Substraction function
void substraction(a,b){
    int sub;
    if(a>b){
        sub = a-b;
    }
```

```
else{
    sub = b-a;
}
printf("2.Positive Substraction is: %d\n",sub);
}

//Multiplication function
void mul(a,b){
    int mul = a*b;
    printf("3.Multiplication is: %d\n",mul);
}

//Divide function
void divide(a,b){
    float dvd = (float) a/b;
    printf("4.Dividation is: %.2f\n",dvd);
}

//Remainder function
void rem(a,b){
    int c = a%b;
    printf("5.Remainder when %d divided by %d : %d \n",a,b,c);
}

//main function
void main(){
    printf("19BCE2250 - Ishan Jogalekar\n");
    printf("Enter 1st number: \n");
    int n1,n2;
    scanf("%d",&n1);
    printf("Enter 2nd number: \n");
    scanf("%d",&n2);

    //OpenMP parallel section
```

```
#pragma omp parallel sections
{
    #pragma omp section
    sum(n1,n2);
    #pragma omp section
    subtraction(n1,n2);
    #pragma omp section
    mul(n1,n2);
    #pragma omp section
    divide(n1,n2);
    #pragma omp section
    rem(n1,n2);
}
}
```

```
//OpenMP parallel section
#pragma omp parallel sections
{
    #pragma omp section
    sum(n1,n2);
    #pragma omp section
    subtraction(n1,n2);
    #pragma omp section
    mul(n1,n2);
    #pragma omp section
    divide(n1,n2);
    #pragma omp section
    rem(n1,n2);
}
}
```

EXECUTION:

- <omp.h> is header file used to access Openmp functions within program.
- First two integers a and b are initialized. After that various methods are created to perform arithmetic operation on that two integers.eg. void sum()
- In main method first user inputs for integers are passed.
- In parallel section initialized by #pragma omp parallel sections. Here "sections" is used to specify section that are going to access arithmetic methods.
- Using #pragma omp section , in that section arithmetic methods are executing.
- Finally we will get output of arithmetic methods using OpenMp sections.

RESULTS:

```
15:07:58-ishan@ishan-ubuntu:~/PDC lab/lab 4$ ./c1
19BCE2250 - Ishan Jogalekar
Enter 1st number:
10
Enter 2nd number:
2
1.Sum is: 12
3.Multiplication is: 20
4.Dividation is: 5.00
5.Remainder when 10 divided by 2 : 0
: 2.Positive Substraction is: 8
:
15:08:05-ishan@ishan-ubuntu:~/PDC lab/lab 4$
```

```
15:09:07-ishan@ishan-ubuntu:~/PDC lab/lab 4$ ./c1
19BCE2250 - Ishan Jogalekar
Enter 1st number:
71
Enter 2nd number:
9
1.Sum is: 80
4.Dividation is: 7.89
5.Remainder when 71 divided by 9 : 8
2.Positive Substraction is: 62
3.Multiplication is: 639
15:09:13-ishan@ishan-ubuntu:~/PDC lab/lab 4$
```