



VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Computer Science & Engineering

CSE4001

Parallel and Distributed Computing

LAB ASSIGNMENT 4

Submitted to **Prof. DEEBAK B.D.**

TOPIC: PROBLEMS USING OPENMP

NAME: PUNIT MIDDHA

REG.NO: 19BCE2060

SLOT: L55+L56

DATE: 28/09/2021

QUESTION – I

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

SOURCE CODE:

```
#include<stdio.h>

#include <omp.h>

void main(){

    printf("\nNAME: PUNIT MIDDHA\n");
    printf("REGNO: 19BCE2060\n\n");

    int a,b;
    printf("Enter the Value of A: ");
    scanf("%d", &a);
    printf("Enter the Value of B: ");
    scanf("%d", &b);
    int sum, sub, mply, div;
    #pragma omp parallel
    {
        #pragma omp sections
        {
            #pragma omp section
            sum = a+b;

            #pragma omp section
            sub = a-b;
```

```

        #pragma omp section

        mply = a*b;

        #pragma omp section

        div = a/b;

    }

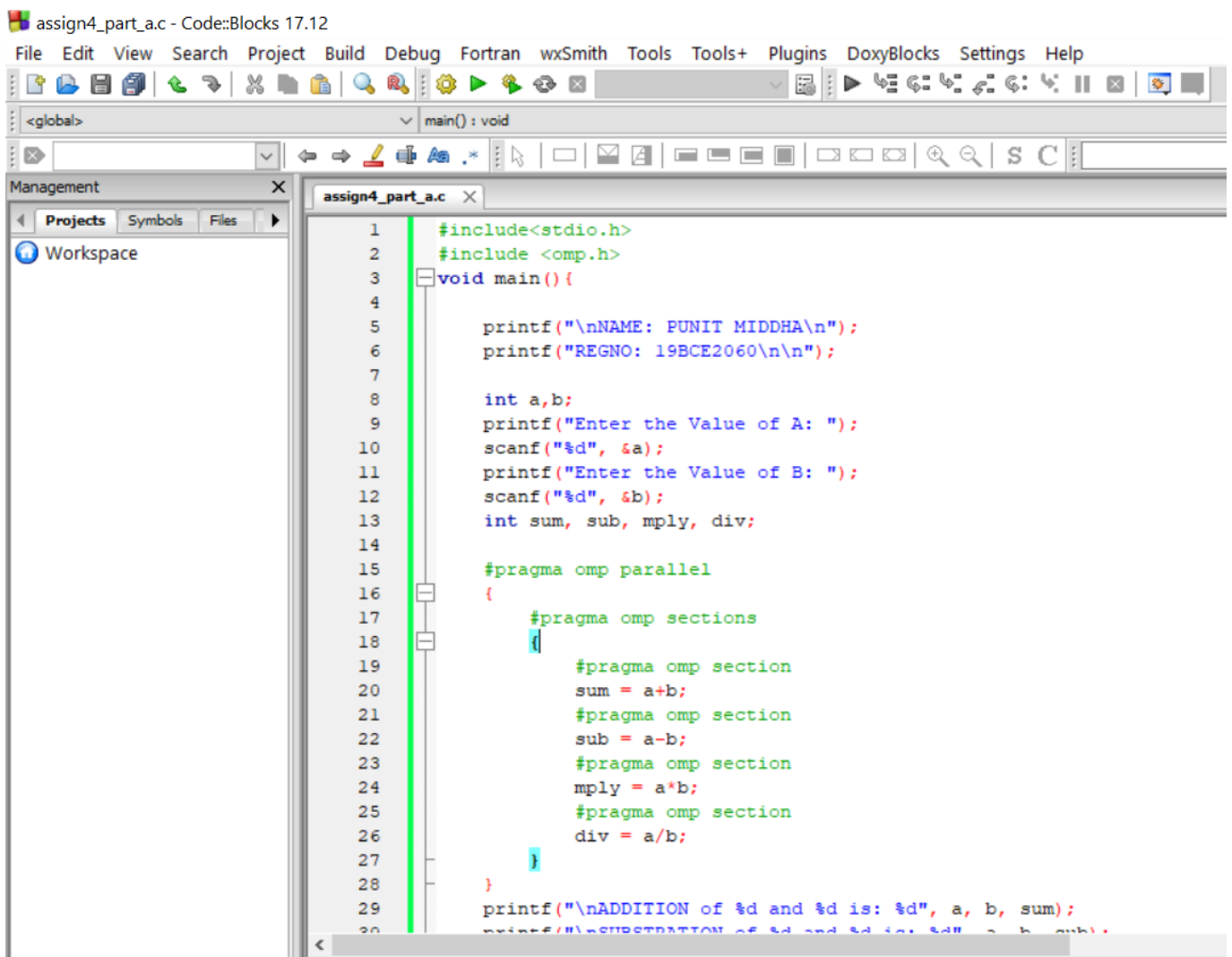
}

printf("\nADDITION of %d and %d is: %d", a, b, sum);
printf("\nSUBSTRATION of %d and %d is: %d", a, b, sub);
printf("\nMULTIPLICATION of %d and %d is: %d", a, b, mply);
printf("\nDIVISION of %d and %d is: %d\n\n", a, b, div);

}

```

assign4_part_a.c - Code::Blocks 17.12




```

1  #include<stdio.h>
2  #include <omp.h>
3  void main() {
4
5      printf("\nNAME: PUNIT MIDDHA\n");
6      printf("REGNO: 19BCE2060\n\n");
7
8      int a,b;
9      printf("Enter the Value of A: ");
10     scanf("%d", &a);
11     printf("Enter the Value of B: ");
12     scanf("%d", &b);
13     int sum, sub, mply, div;
14
15     #pragma omp parallel
16     {
17         #pragma omp sections
18         {
19             #pragma omp section
20             sum = a+b;
21             #pragma omp section
22             sub = a-b;
23             #pragma omp section
24             mply = a*b;
25             #pragma omp section
26             div = a/b;
27         }
28     }
29     printf("\nADDITION of %d and %d is: %d", a, b, sum);
30     printf("\nSUBSTRATION of %d and %d is: %d", a, b, sub);

```

EXECUTION:

 "C:\Users\Punit Middha\Desktop\PDC\assign4_part_a.exe"

NAME: PUNIT MIDDHA

REGNO: 19BCE2060

Enter the Value of A: 80

Enter the Value of B: 20

ADDITION of 80 and 20 is: 100

SUBSTRATION of 80 and 20 is: 60

MULTIPLICATION of 80 and 20 is: 1600

DIVISION of 80 and 20 is: 4

Process returned 30 (0x1E) execution time : 10.986 s

Press any key to continue.

 "C:\Users\Punit Middha\Desktop\PDC\assign4_part_a.exe"

NAME: PUNIT MIDDHA

REGNO: 19BCE2060

Enter the Value of A: 475

Enter the Value of B: 96

ADDITION of 475 and 96 is: 571

SUBSTRATION of 475 and 96 is: 379

MULTIPLICATION of 475 and 96 is: 45600

DIVISION of 475 and 96 is: 4

Process returned 31 (0x1F) execution time : 11.063 s

Press any key to continue.

REMARKS:

- In this experiment, we understood the concepts of "section" constructions. In section construct, we can have any number of sections. These sections don't seem to be dependent on the operating of different sections.
- We took an arithmetic expression comprising mathematical operators like addition, subtraction, multiplication, and division in this experiment. Then we broke down the calculation into entirely different sections.
- We observe that the computation of each section gave the correct answer as the normal computation.
- Therefore, we use sections to divide a massive large block into smaller calculations computed parallelly.