**Lab Assignment 10**

**Title:** Vtune\_Profiler

**Problem statement:**

Develop parallel programs for given serial programs and profile the program using Vtune Analysis tool

**Code:**

#include <stdio.h>

#include<omp.h>

const int N=20;

int main() {

long A[N][N],B[N][N],C[N][N];

// Initialize matrices A and B

for (int i = 0; i < N; i++) {

for (int j = 0; j < N; j++) {

A[i][j] = 1;

B[i][j] = 1;

C[i][j] = 0;

}

}

// Perform matrix multiplication

#pragma omp parallel for

for (int i = 0; i < N; i++) {

#pragma omp parallel for

for (int j = 0; j < N; j++) {

#pragma omp parallel for

for (int k = 0; k < N; k++) {

C[i][j] += A[i][k] \* B[k][j];

}

}

}

for(int i=0;i<N;i++){

for(int j=0;j<N;j++){

printf("%d\t",C[i][j]);

}

printf("\n");

}

return 0;

}

**Output:**