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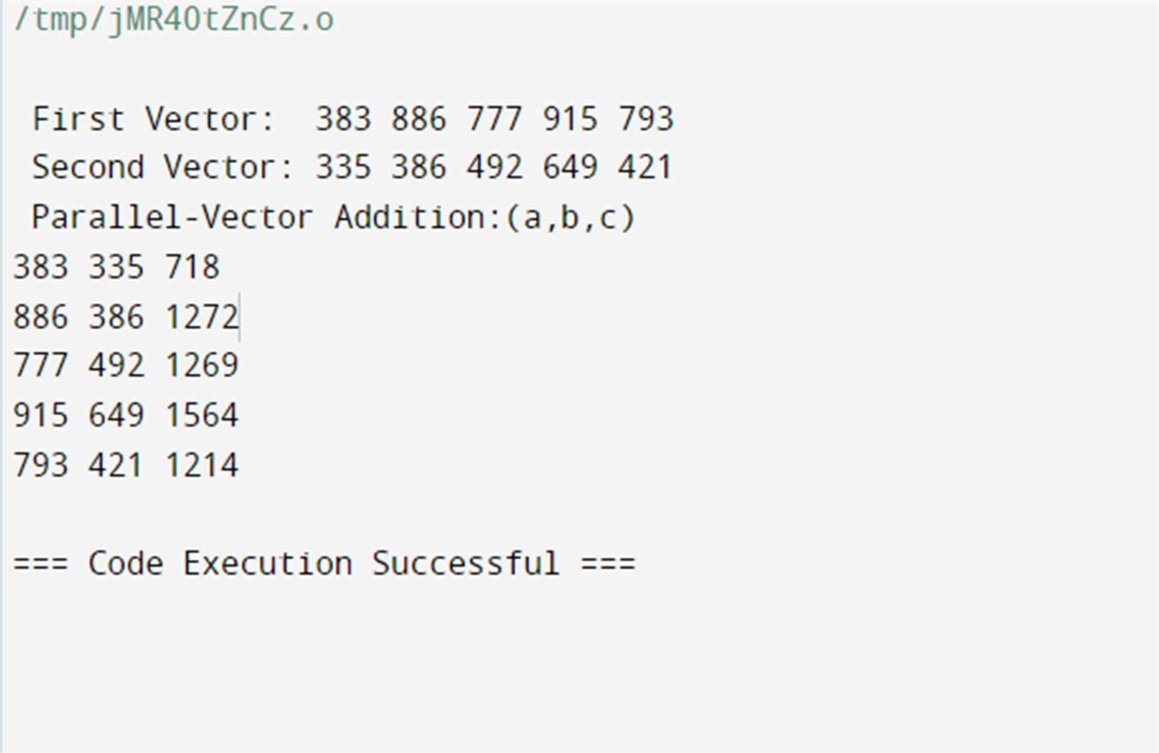
Practical no: 4

Aim: Write a CUDA Program for : 1. Addition of two large vectors.

```
#include<stdio.h>
#include<iostream>
#include<cstdlib>
//****important to add following library to allow a programmer to use parallel paradigms*****
#include<omp.h>
using namespace std;
#define MAX 5

int main()
{
 int a[MAX],b[MAX],c[MAX],i;
 printf("\n First Vector:\t");
 //Instruct a master thread to fork and generate more threads to process following loop structure
 #pragma omp parallel for
 for(i=0;i<MAX;i++)
 {
   a[i]=rand()%1000;
 }
 //Discuss issue of this for loop below-if we make it parallel, possibly values that get printed will not be in sequence as we dont have any control on order of threads execution
 for(i=0;i<MAX;i++)
 {
   printf("%d\t",a[i]);
 }
 printf("\n Second Vector:\t");
 #pragma omp parallel for
 for(i=0;i<MAX;i++)
 {
   b[i]=rand()%1000;
 }
 for(i=0;i<MAX;i++)
 {
   printf("%d\t",b[i]);
 }
 printf("\n Parallel-Vector Addition:(a,b,c)\t");
 #pragma omp parallel for
 for(i=0;i<MAX;i++)
 {
   c[i]=a[i]+b[i];
 }
 for(i=0;i<MAX;i++)
 {
   printf("\n%d\t%d\t%d",a[i],b[i],c[i]);
 }
}
```



```
/tmp/jMR40tZnCz.o

 First Vector:  383 886 777 915 793
 Second Vector: 335 386 492 649 421
 Parallel-Vector Addition:(a,b,c)
383 335 718
886 386 1272
777 492 1269
915 649 1564
793 421 1214

=== Code Execution Successful ===
```