#include<iostream>

#include<cstdlib>

#include<omp.h>

#include<time.h>

#define MAX 10000

using namespace std;

void swap(int &a, int &b)

{

int x=a;

a=b;

b=x;

}

void display(int array[MAX], int n)

{

cout<<"\nArray : ";

for(int i=00;i<n;i++)

cout<<array[i]<<"\t";

}

clock\_t start=clock();

void parallel\_bubble(int array[MAX],int n)

{

for(int k=0;k<n-1;k++)

{

if(k%2==0) //even

{

//#pragma omp parallel for

for(int i=0;i<n/2;i++)

{

if(array[2\*i]>array[2\*i+1])

swap(array[2\*i],array[2\*i+1]);

}

}

else

{

//#pragma omp parallel for

for(int i=0;i<(n/2)-1;i++)

{

if(array[2\*i+1]>array[2\*i+2])

swap(array[2\*i+1],array[2\*i+2]);

}

}

}

}

clock\_t stop=clock();

int main()

{

int n,array[MAX];

cout<<"\n Enter the number of elements : ";

cin>>n;

for(int i=0;i<n;i++)

array[i]=rand()%22;

display(array,n);

parallel\_bubble(array,n);

display(array,n);

cout<<"\nTime required : "<<(double)(stop-start)\*1000.0/CLOCKS\_PER\_SEC<<" ms";

return 0;

}

/\*

gautami@Asus:~/HPC$ g++ par\_bubble.cpp -fopenmp

gautami@Asus:~/HPC$ time ./a.out

Enter the number of elements : 50

Array : 17 10 17 13 1 15 0 6 3 18 7 16 3 7 4 20 10 2 0 21 8 5 11 4 6 0 21 3 21 21 18 10 14 7 9 7 8 13 10 721 15 1 0 21 4 20 7 6

Array : 0 0 0 0 1 1 1 2 3 33 4 4 4 5 6 6 6 7 7 77 7 7 8 8 8 9 10 10 10 10 11 13 13 14 15 15 16 17 17 18 20 20 21 21 21 21 21 21

Time required : 0.002 ms

real 0m3.489s

user 0m0.004s

sys 0m0.000s

\*/