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Practical no: 2 (A)

Title: Write a program to implement Parallel Bubble Sort using OpenMP. Use existing algorithms and measure the performance of sequential and parallel algorithms.

```
#include<iostream>
#include<stdlib.h>
#include<omp.h>
using namespace std;

void bubble(int *, int);
void swap(int &, int &);


void bubble(int *a, int n)
{
   for(  int i = 0;  i < n;  i++ )
    {
          int first = i % 2;

          #pragma omp parallel for shared(a,first)
          for(  int j = first;  j < n-1;  j += 2  )
            {
                  if(  a[ j ]  >  a[ j+1 ]  )
                   {
                          swap(  a[ j ],  a[ j+1 ]  );
                   }
                    }
    }
}


void swap(int &a, int &b)
{

   int test;
   test=a;
   a=b;
   b=test;

}
```

```
int main()
{

   int *a,n;
   cout<<"\n enter total no of elements=>";
   cin>>n;
   a=new int[n];
   cout<<"\n enter elements=>";
   for(int i=0;i<n;i++)
   {
         cin>>a[i];
   }

   bubble(a,n);

   cout<<"\n sorted array is=>";
   for(int i=0;i<n;i++)
   {
         cout<<a[i]<<endl;
   }


return 0;
}
```

Output

```
c                                                    Copy code

Sorted array: 1 2 3 4 5 6 7 8 9
```