**Lab Assignment-2**

1. **Write a program for ODD-EVEN sorting and calculate the execution time.**

**CODE:**

#include<bits/stdc++.h>

using namespace std;

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

int temp;

temp = a;

a = b;

b = temp;

}

void oddEvenSort(int \*a, int n){

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

if((i%2)==0){

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

if(a[(2\*j)]>a[(2\*j)+1]){

swap(a[(2\*j)],a[(2\*j)+1]);

}

}

}

else{

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

if(a[(2\*j)+1]>a[(2\*j)+2]){

swap(a[(2\*j)+1],a[(2\*j)+2]);

}

}

}

}

}

int main(){

int a[10000];

ifstream fin;

fin.open("Database.txt");

for(int i=0;i<10000;i++){

fin>>a[i];

}

// int a[] = {8,3,6,2,7,5,2,9};

oddEvenSort(a,10000);

for(int i=0;i<10000;i++){

cout<<a[i]<<" ";

}

fin.close();

return 0;

}

1. **Write a program for sort the elements using Quick sort and calculate the execution time.**

**CODE:**

#include<bits/stdc++.h>

using namespace std;

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

int temp;

temp = a;

a = b;

b = temp;

}

int partition(int\* a, int p, int r){

int x = r;//pivot last element

int i = p-1;

int j = p;

for(j=p;j<r;j++){

if(a[j] < a[x]){

swap(a[i+1],a[j]);

i++;

}

}

swap(a[i+1], a[x]);

return (i+1);

}

void quickSort(int \*a, int p, int r){

if(p<r){

int q = partition(a,p,r);

quickSort(a,p,q-1);

quickSort(a,q+1,r);

}

}

int main(){

int a[] = {8,3,6,2,7,5,2,9};

quickSort(a,0,7);

for(int i=0;i<8;i++){

cout<<a[i]<<" ";

}

return 0;

}