**DIVIDE AND CONQUER**

PROBLEM 5:

5-IMPLEMENTATION OF QUICK SORT

AIM:  
Write a Program to Implement the Quick Sort Algorithm

CODE:  
#include<stdio.h>

void swap(int arr[], int a,int b){

int temp= arr[a];

arr[a] = arr[b];

arr[b]= temp;

}

int partition (int arr[], int low,int high){

int pivot = arr[high];

int i = low -1;

for (int j = low;j<high;j++){

if (arr[j] <= pivot){

i++;

swap(arr,i,j);

}

}

swap(arr,i+1,high);

return(i+1);

}

void quickSort(int arr[],int low,int high){

if(low < high){

int pi = partition(arr, low, high);

quickSort(arr,low,pi-1);

quickSort(arr,pi+1,high);

}

}

int main(){

int n;

scanf("%d",&n);

int arr[n];

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

scanf("%d",&arr[i]);

}

quickSort(arr,0,n-1);

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

printf("%d ",arr[i]);

}

printf("\n");

return 0;

}

INPUT AND OUTPUT:  
