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//CSE 11911058

//QUICK SORT

#include<stdio.h>//header files

#include<stdlib.h>//header files

//function for swapping

void swap(int \*p,int \*q)

{

int temp=\*p;

\*p=\*q;

\*q=temp;

}

//for diving the array

int divide(int \*a,int lb,int ub)

{

int pivot=a[lb];

int start=lb;

int end=ub;

while(start<end)

{

while((a[start]<=pivot)&&(start<=ub))

{

start++;

}

while((a[end]>pivot)&&(end>=lb))

{

end--;

}

if(start<end)

{

swap(&a[start],&a[end]);

}

}

swap(&a[lb],&a[end]);

return end;

}

//function of main quick sort

void quicksort(int \*a,int lb,int ub)

{

if(lb<ub)

{

int local=divide(a,lb,ub);

quicksort(a,lb,local-1);

quicksort(a,local+1,ub);

}

}

//Driver function

int main()

{

int \*a;

int n;

printf("Enter The Size of Array:");

scanf("%d",&n);

a=(int \*)malloc(n\*sizeof(int));//for size of array

printf("Enter list:\n");

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

{

printf("enter element");

scanf("%d",&a[y]);

}

quicksort(a,0,n-1);

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

{

printf(" %d\n",a[x]);

}

}