HEAPIFY

#include <stdio.h>

#include <stdlib.h>

#define MAX 20

void maxheapify(int \*, int, int);

int\* buildmaxheap(int \*, int);

void main()

{

int i, t, n;

int \*a = calloc(MAX, sizeof(int));

int \*m = calloc(MAX, sizeof(int));

printf("Enter no of elements in the array\n");

scanf("%d", &n);

printf("Enter the array\n");

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

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

}

m = buildmaxheap(a, n);

printf("The heap is\n");

for (t = 0; t < n; t++) {

printf("%d\n", m[t]);

}

}

int\* buildmaxheap(int a[], int n)

{

int heapsize = n;

int j;

for (j = n/2; j >= 0; j--) {

maxheapify(a, j, heapsize);

}

return a;

}

void maxheapify(int a[], int i, int heapsize)

{

int temp, largest, left, right, k;

left = (2\*i+1);

right = ((2\*i)+2);

if (left >= heapsize)

return;

else {

if (left < (heapsize) && a[left] > a[i])

largest = left;

else

largest = i;

if (right < (heapsize) && a[right] > a[largest])

largest = right;

if (largest != i) {

temp = a[i];

a[i] = a[largest];

a[largest] = temp;

maxheapify(a, largest, heapsize);

}

}

}