

# Heap sort

```
#include <stdio.h>
int arr[1000];
int brr[1000];
int heapsize = 0;
int formheap(int x)
{
    heapsize++;
    arr[heapsize] = x;
    int n = heapsize;
    while(arr[n/2] < x)
    {
        arr[n] = arr[n/2];
        n = n/2;
    }
    arr[n] = x;
}
int heapify()
{
    int i=1,next;

    int temp;
    if(arr[heapsize] < arr[1])
    {
        //swap
        temp = arr[heapsize];
        arr[heapsize] = arr[i];
        arr[i] = temp;
    }

    heapsize--;
    for(i=1;2*i<heapsize;i=next)
    {
        next = 2*i;
        if(arr[next] < arr[next+1])
            next++;
        if(arr[next] > arr[i])
        {
            //swap
            temp = arr[next];
            arr[next] = arr[i];
            arr[i] = temp;
        }
        else
            break;
    }
}
int main()
```

```
{
    int x,i,n,j;
    scanf("%d",&n);
    arr[0] = 999999;
    for(i=0;i<n;i++)
    {
        scanf("%d",&x);
        formheap(x);
    }
    //heap sort...
    for(i=n;i>0;i--)
    {
        heapify();
    }
    for(j=1;j<=n;j++)
        printf("%d ",arr[j]);
    printf("\n");
}
```