

Re: Need help for a code in "Numerical Recipes in C++"

Source: <http://sci.tech-archive.net/Archive/sci.math.num-analysis/2005-01/0024.html>

From: George Bush (george.w.bush_at_whitehouse.com)

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Why not look at the code in

<http://www.cs.ubc.ca/spider/harrison/Java/sorting-demo.html>

and skip typing in the NR stuff.

In article <cr3osr\$tn7\$02\$1@news.t-online.com>, Mok-Kong Shen <mok-kong.shen@t-online.de> wrote:

>
>*The code of the heapsort algorithm as given in books by*
>*e.g. Sedgewick deals with arrays with indices in [1..n].*
>*For programming in languages like C, one would like to sort*
>*arrays with indices in [0..n-1]. I have found sofar only one*
>*book that gives code for the latter case, namely "Numerical*
>*Recipes in C++" by W. H. Press et al., which itself refers*
>*to Sedgewick. (Note that a companion book by the same authors*
>*for C has code for indices in [1..n], which is a bit odd in*
>*that context.)*
>
>*I adapted the code in the C++ book to C for sorting arrays*
>*of 'int' with indices in [0..n-1]. However, the resulting*
>*code (see attachment below) does not always function correctly.*
>*As concrete examples, of 8 randomly chosen cases tested for an*
>*'int' array of size 5 consisting of [0..4] the following input*
>
> 2 1 3 0 4
>
>*was wrongly sorted to*
>
> 0 1 2 4 3
>
>*while the following inputs*
>
> 3 0 4 2 1
> 4 1 0 2 3
> 4 3 0 1 2

```
> 3 0 1 4 2
> 2 3 1 4 0
> 2 3 4 0 1
> 1 0 4 3 2
>
>were all processed correctly.
>
>Since I have only the book but not the corresponding original
>software, I couldn't be sure whether this is due to my coding
>error in adapting the code from the text of the book or whether
>this is due to an error of the authors of the book (though I
>have carefully checked my coding several times to be quite sure
>that it corresponds in essence to the code given in the book).
>If there is some person who happens to possess the original
>software of the C++ book, I should appreciate very much to know
>a confirmation/refutation of my computing result above.
>
>M. K. Shen
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>
>void siftdown(int a[], int l, int r)
>{ int j,jold,v;
> v=a[l];
> jold=l;
> j=l+1;
> while (j<=r)
> { if (j<r && a[j]<a[j+1]) j++;
> if (v>=a[j]) break;
> a[jold]=a[j];
> jold=j;
> j=2*j+1;
> }
> a[jold]=v;
>}
>
>void hpsort(int a[], int n)
>{ int i,t;
> for (i=n/2-1; i>=0; i--) siftdown(a,i,n-1);
> for (i=n-1; i>0; i--)
> { t=a[0]; a[0]=a[i]; a[i]=t;
> siftdown(a,0,i-1);
> }
>}
>
```