Re: Help needed for a sorting code in the literature

Source: http://www.derkeiler.com/Newsgroups/sci.crypt/2004−12/1970.html

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Date: 12/31/04

Date: Fri, 31 Dec 2004 15:08:22 +0100

BRG wrote:

> *Mok−Kong Shen wrote:*
.....
[snip]

> *Here is a C++ version of a bottom up heapsort that should be easy to*
> *convert to C. No guarantees that it is correct though − posting code*
> *here is a virtual guaranetee that someone will find bugs in it :−)*
>
> *template<class T> static void heap_sub(T x[], int i, const int n)*
> *{ int j;*
> *while((j = i + i) <= n)*
> *{*
> *if(j < n && x[j] <= x[j + 1])*
> *++j;*
> *if(x[i] >= x[j])*
> *return;*
> *T y(x[i]); x[i] = x[j]; x[j] = y;*
> *i = j;*
> *}*
> *}*
>
> *template<class T> void heapsort(T x[], const int n)*
> *{*
> *for(int i = (n >> 1); i > 0; −−i)*
> *heap_sub(x, i − 1, n);*
>
> *for(int i = n − 1; i > 0; −−i)*
> *{*
> *T y(x[0]); x[0] = x[i]; x[i] = y;*
> *heap_sub(x, 0, i − 1);*
> *}*
> *}*

Could you kindly check whether my coversion of your code in
the attachment was properly done? It didn't correctly function

in my test run on the data:

3 0 4 2 1

Thanks.

M. K. Shen

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```
void heap_sub(int x[], int i, int n)
{ int j,y;
  while((j = i + i) <= n)
  { if(j < n && x[j] <= x[j + 1]) ++j;
    if(x[i] >= x[j]) return;
    y = x[i]; x[i] = x[j]; x[j] = y;
    i = j;
  }
}

void heapsort(int x[], int n)
{ int i,y;
  for (i = (n >> 1); i > 0; −−i)
    heap_sub(x, i − 1, n);
  for (i = n − 1; i > 0; −−i)
    { y = x[0]; x[0] = x[i]; x[i] = y;
      heap_sub(x, 0, i − 1);
    }
}
```