Title:
Status of the CPH STL project

Speaker:
Jyrki Katajainen
Status of Various Headers

<algorithm> 47 of 103 functions written as course exercises.

<deque> Bjarke has written two versions; a third needed?

<functional> Nothing done.

<iterator> I have written the declaration.

<list> Booked for Jonas, but I have not heard from him.

<map> Jacob G. and Asger have written the first version.

<memory> Booked for Martin.

<numerics> Nothing done.

<queue> queue<> given in the C++ standard; priority_queue<> written by Brian; some more experiments needed.

<set> Jacob G. and Asger have written the first version.
<stack> Given in the C++ standard; experiments needed.

<utility> Lars has experimented with pair; rel_ops are trivial.

<vector> Nothing done.

<bitset> Jeppe has written the first version.

<hash_map> Christian and Jacob Chr. have written the first version.

<hash_set> Nothing done.

<optimization> Written by Steffen.

<slist> Henrik has written the first version.
Components Approved by Me

<optimization> Author: Steffen Nissen

find_if Author: Frederik Rønn

It was more than a month ago I was able to find time to read your programs, but the fact is that most components are still in an experimental state.
Copenhagen STL Reports


2001-2  Simon Thamdrup Jensen: \texttt{random\_shuffle()} in the Copenhagen STL

2001-3  Brian S. Jensen: Priority queue and heap functions

2001-4  Bjarke Buur Mortensen: The deque in the Copenhagen STL — First attempt

2001-5  Christian Boesgaard and Jacob Chr. Poulsen: Copenhagen STL — hash map

2001-6  Jacob Gorm Hansen and Asger Kahl Henriksen: The (multi)\texttt{?}(map|set) of the Copenhagen STL

2001-7  Jyrki Katajainen and Bjarke Buur Mortensen: Experiences with the design and implementation of space-efficient deques
2001-8 Philip Bille: A simple implementation of set algorithms for the STL

2001-9 Steffen Nissen: Permutation algorithms in the Copenhagen STL

2001-10 Henrik Skovby: Implementation of a circular singly linked list, slist

2001-11 Jeppe Nejsum Madsen: bitset<N> in the Copenhagen STL
Ongoing Work

Lenka Otap: Web-design for the Copenhagen STL. Deadline: 18.5.2001


Jonas Christian Drewsen: Road map for cphstl::list implementation. Delayed.


Finn Kettner: Associative arrays, part 2. No contract written.
Some Small Jobs

- Script that generates the contributors automatically.
- Script that corrects all doxygen errors.
- Correct DIKU-article.cls into the form I want to see it.
- Correct DIKU-article.bst into a similar form as DIKU.bst.
- Create a header <configure>.
- etc.

Are you searching for a summer job? I am searching for a performance engineer. You will get salary for 20 hours and I expect that you work for full time or more.
Possible Written Projects

- `<iterator>` and `<functional>`
- `<space_efficient_vector>`; continue from Bjarke’s work.
- In-place merging
- Stable sorting
- Concept checks
- On-line prettyprinting
- pure C compiler/profiler
- Statistics (data mining) on the visits to our Web page.

Or some other project on a component we are still lacking. Note that we have an interesting code database at our disposal.
Possible M.Sc. Projects

- Persistent maps
- Exception safety
- Compiler-time computations
- Testing
What to Teach in Autumn 2001?

- Performance engineering in game industry (proposed by Lars and Tomi)
- M.Sc. seminar
- My favourite software tools
Ongoing Research

- Selection: the strength of iterators as a resource (Jesper Bojesen, Jyrki Katajainen, and Lars Yde)
- Loop unrolling from a compiler to a library (Steffen Nissen)
- Utilizing parallelism for speeding up programs (Jyrki Katajainen and Sofus Mortensen)
- Automating the efficiency comparison of programs (Jyrki Katajainen)
- Methodological issues in algorithm experimentation: a case study of heaps (Jesper Bojesen and Jyrki Katajainen)
- Interchanging two segments of an array in a hierarchical memory system (Jesper Bojesen and Jyrki Katajainen)
- Status of the stable quicksort (Jyrki Katajainen and Jesper Larsson Träff)
- A meticulous analysis of mergesort programs (Jyrki Katajainen, Sofus Mortensen, Maz Spork, and Jesper Larsson Träff)