



**Tornimäe (the name means, literally, a hill of towers). The tower standing out by its absence is the controversial new building of the Academy of Arts**

## Back to work

We hope that the reception yesterday was to your liking: that you found something to eat and drink and had a merry time. The group that performed for us call themselves Estonian Voices. They are led by a talented Estonian jazz singer and composer, Kadri Voorand. Last year the group rehearsed with Britt Quentin. But we must return to our business today. To distract you: an ETAPS photostream is taking shape at <http://www.eikophoto.com/etaps2012/>.

### LEARN ABOUT THIS PLACE

## Facts about Tallinn, part 2

Tallinn was granted the Lübeck City Rights in 1248. It became a member of the Hanseatic League, an economic alliance of trading cities and their merchant guilds along the coast in Northern Europe in the 13th-17th centuries, a sort of EU of city states of the time.

Until late 1800s, St. Olaf's Church in Tallinn was the tallest building ever built on the planet. In 1500, its spire rose to the height of 159 meters.

Tallinn's Town Hall Apothecary has been continually functioning at least since 1422, making it the oldest such in the world.

### Three will become four!

The plenary talk this morning is by **Cynthia Dwork** about positive empowerment from negative thinking. In the afternoon, **Wil van der Aalst** will speak about distribution of process mining. These four conferences run today:

**ESOP** European Symposium of Programming

**FASE** Foundational Aspects of Software Engineering

**POST** Principles of Security and Trust

**TACAS** Tools for Analysis and Construction of Systems

In the evening, a bid for the location of ETAPS 2014 will be presented.

### THE PERILS OF BAD CUSTOMER SERVICE

## A grim spot

Look for two long cobblestones that make the letter 'L' in the corner of Town Hall Square (Raekoja plats) nearest to Town Hall Apothecary (Raeapteek).

This spot marks one of the more bizarre tales from Tallinn's medieval history. In the late 1600s, so the story goes, a priest named Panicke walked into an inn and ordered an omelette. What he got was 'hard as the sole of a shoe', so he sent it back. The next two that the waitress brought were even worse, and after an argument, the priest decided to make his point by killing the waitress with an axe. For this unusually violent crime, the priest was swiftly hauled out to the square and beheaded, and the spot was marked for the convenience of future tourguides.

### Weather forecast

	Today 2    9 °C		Tomorrow 4    10 °C		Thursday 2    7 °C
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No great improvement here, but the extra hour of daylight helps.

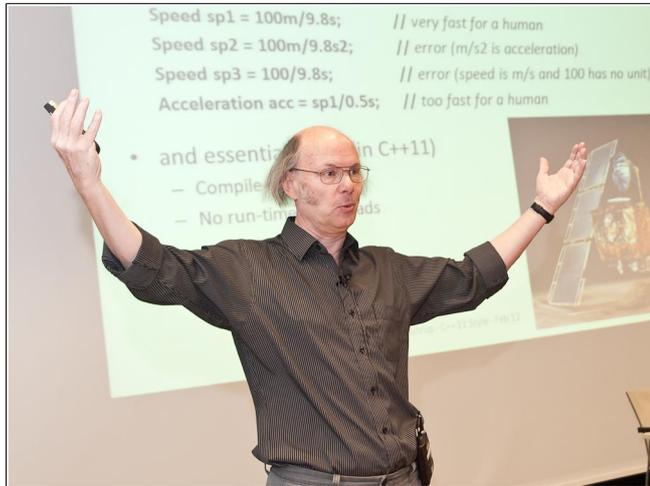


<http://www.etaps.org/2012>

ETAPS 2012 local organizers

ETAPS DAILY INTERVIEWS BJARNE STROUSTRUP

# Author's comments on C++



**Many novices learning C often have trouble understanding pointers. Apart from the C heritage, are there any notable features of C++ that people tend to misunderstand and/or misuse?**

It seems that different people have problems with different parts of C++. My experience is that C++ relying on generic programming, RAI, and the standard library is easier to approach than programming using serious pointer gymnastics or massive class hierarchies.

Every language in wide use will be misused and misunderstood. When the number of programmers gets large, inevitably half will be below average in terms of ability or experience and the applications will reflect industry averages. Many successes of new programming language come from careful selection of problems and the programmers will mostly be far above average in terms of education and enthusiasm.

**Many languages that us researchers create have zero to very few users. Did C++ start as an experiment that accidentally got big or did you purposefully design a language that could be suitable for general-purpose usage?**

C++ started out to solve specific problems for specific people. It turned out that the class of problems covered

a lot of ground and the group of people who had the interests and abilities to deal with such problems was very large. Part of the reason for C++'s success were my emphasis on general solutions of general problems (rather than carefully crafted solutions to specific problems) and on performance. It took me years to realize that I had something that could serve thousands, and later, millions of programmers.

**How is the support for C++11 coming along? What are the topics you would like to focus on for the next iteration of the language?**

GCC 4.7 already ships with most C++11 features and Clang, Microsoft, and EDG are improving fast. Just about everybody has a version of the C++11 standard library.

We are still learning how best to use C++11. We have to be cautious and design new features based on experience. I hope to see many more libraries, support for point-of-use checking of template used ("concepts"), better modularity, and more support for high-level concurrency.

**You have said that the C and C++ languages should be brought closer together. Has there been any work toward that goal or is it a pipe dream that will likely never materialize?**

I would like to see C as a true subset of C++. I think it would be technically feasible and a significant help to most C and C++ programmers. However, enough influential people in the C community would prefer C to remain a separate language, so I don't think that will happen any day soon.

From a C++ point of view, it is important to approach programming from a level where the basic facilities are well-defined, type-safe, and portable. To me, it means that most C specific low-level coding (using casts, macros, error codes, and clever pointer tricks) should be avoided, especially by novices.

For a more extensive explanation of Bjarne's views, see his ESOP 2012 paper and his recent IEEE Computer paper. ■

## WORTH KNOWING

# Food for thought

If you are looking for a place to hang around at Swissôtel, you can consider Café Swiss (8th floor, open 7.00–22.30).

In the evening you might want to dine in Restaurant and Bar Horisont on the 30th floor (restaurant open 18.00–22.00, bar open 17.00–1.00). Stunning views! You can see all of Tallinn, except for the Old Town, shadowed by the other twin tower.

But of course you might also want to chat with your

colleagues or eat out with them in the town. The Old Town offers ample opportunities for this. The Tallinn booklet in your participant envelope describes the options very accurately. Another highly recommendable source of frank reviews is InYourPocket's Tallinn city guide (<http://www.inyourpocket.com/estonia/tallinn>).

There are many nice cafeterias in the town. We can recommend, e.g., Reval Cafés and Kehrviieder. ■