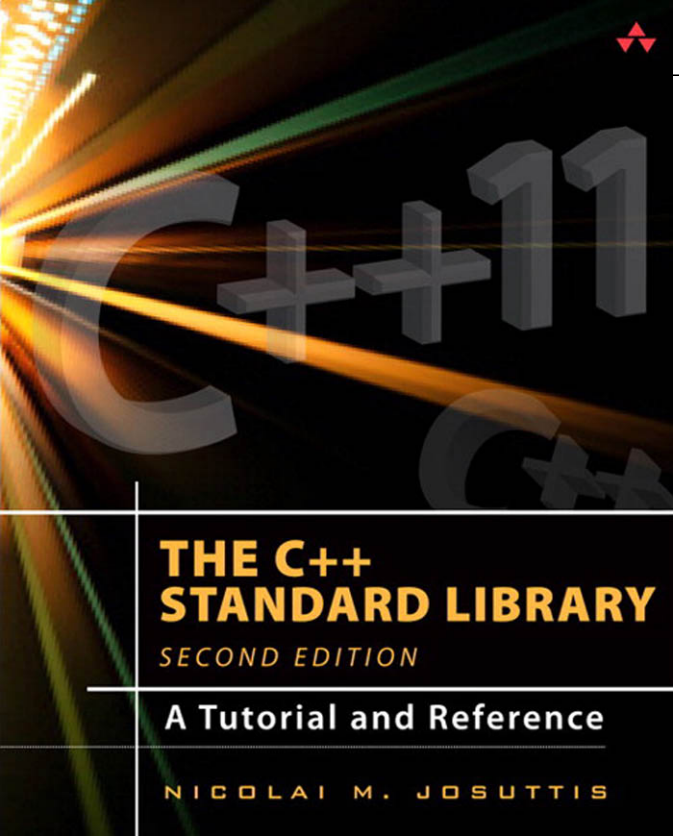
C++11
THE C++
STANDARD LIBRARY
SECOND EDITION
A Tutorial and Reference
NICOLAI M. JOSUTTIS

The C++ Standard Library

Second Edition

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The C++ Standard Library

A Tutorial and Reference

Second Edition

Nicolai M. Josuttis

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To those who care
for people and mankind

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Preface to the Second Edition

I never thought that the first edition of this book would sell so long. But now, after twelve years, it's time for a new edition that covers C++11, the new C++ standard.

Note that this means more than simply adding new libraries. C++ has changed. Almost all typical applications of parts of the library look a bit different now. This is not the result of a huge language change. It's the result of many minor changes, such as using rvalue references and move semantics, range-based `for` loops, `auto`, and new template features. Thus, besides presenting new libraries and supplementary features of existing libraries, almost all of the examples in this book were rewritten at least partially. Nevertheless, to support programmers who still use "old" C++ environments, this book will describe differences between C++ versions whenever they appear.

I learned C++11 the hard way. Because I didn't follow the standardization as it was happening I started to look at C++11 about two years ago. I really had trouble understanding it. But the people on the standardization committee helped me to describe and present the new features as they are intended to be used now.

Note, finally, that this book now has a problem: Although the book's size grew from about 800 to more than 1,100 pages, I still can't present the C++ standard library as a whole. The library part of the new C++11 standard alone now has about 750 pages, written in very condensed form without much explanation. For this reason, I had to decide which features to describe and in how much detail. Again, many people in the C++ community helped me to make this decision. The intent was to concentrate on what the average application programmer needs. For some missing parts, I provide a supplementary chapter on the Web site of this book, `http://www.cppstdlib.com`, but you still will find details not mentioned here in the standard.

The art of teaching is not the art of presenting everything. It's the art of separating the wheat from the chaff so that you get the most out of it. May the exercise succeed.