

# The Boost C Libraries

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filled with dozens of working code examples that illustrate the use of over 40 popular boost libraries this book takes you on a tour of boost helping you to independently build the libraries from source and use them in your own code the first half of the book focuses on basic programming interfaces including generic containers and algorithms strings resource management exception safety and a miscellany of programming utilities that make everyday programming chores easy following a short interlude that introduces template metaprogramming and functional programming the later chapters are devoted to systems programming interfaces focusing on directory handling i/o concurrency and network

programming

the second edition of the boost c libraries introduces 72 boost libraries that provide a wide range of useful capabilities they help you manage memory and process strings more easily they provide containers and other data structures that go well beyond what the standard library offers they make it easy to build platform independent network applications simply put these 72 libraries greatly expand your c toolbox the second edition contains more than 430 examples all examples are as short as possible but they are complete so you can compile and run them as is they show you what the boost libraries offer and give you a head start on using the libraries in your own applications the goal of this book is to increase your efficiency as a c developer and to simplify software development with c the boost libraries introduced in this book will help you write less code with fewer bugs and finish projects faster your code will be more concise and self explanatory and more easily adapted when requirements change the second edition is based on the boost libraries 1 55 0 and 1 56 0 with the latter version having been released in august 2014 the examples are based on c 11 and have been tested with visual studio 2013 gcc 4 8 and clang 3 3 on various platforms for boost libraries which were incorporated into the c 11 standard library differences between boost and the standard library are highlighted the boost libraries are one of the most important and influential open source c libraries their source code is available under a permissive free software license several boost libraries have been incorporated into the c 11 standard library the boost libraries are developed and supported by the boost community a worldwide developer community with a strong interest in pushing c boundaries further

introducing the boost libraries the next breakthrough in c programming boost takes you far beyond the c standard library making c programming more elegant robust and productive now for the first time a leading boost expert systematically introduces the broad set of boost libraries and teaches best practices for their use writing for intermediate to advanced c developers björn karlsson briefly outlines all 58 boost libraries and then presents comprehensive coverage of 12 libraries you're likely to find especially useful karlsson's topics range from smart pointers and conversions to containers and data structures explaining exactly how using each library can improve your code he offers detailed coverage of higher order function objects that enable you to write code that is more concise expressive and readable he even takes you behind the scenes with boost revealing tools and techniques for creating your own generic libraries coverage includes smart pointers that provide automatic lifetime management of objects and simplify resource sharing consistent best practice solutions for performing type conversions and lexical conversions utility classes that make programming simpler and clearer flexible container libraries that solve common problems not

covered by the c standard library powerful support for regular expressions with boost regex function objects defined at the call site with boost bind and boost lambda more flexible callbacks with boost function managed signals and slots a k a the observer pattern with boost signals the boost libraries are proving so useful that many of them are planned for inclusion in the next version of the c standard library get your head start now with beyond the c standard library

c is one of the most important and influential programming languages for application development it supports the modular object oriented and generic programming models and its flexibility has been one of the main reasons why it has been so successful with the emergence of the boost libraries boost org we see that c is brought to a new level namely a set of reusable and modular template libraries that c developers can use in their applications this book is dedicated to a number of boost libraries for higher order functions data types and data structures libraries for text and string processing multi threading random number generation and more we also discuss how boost and design patterns are used to promote the flexibility of code each library is described in a step by step manner numerous examples are given to show the functionality of each library the full source code is freely available to purchasers of the book coverage includes understanding and using 30 major boost libraries learn about higher order functions data structures memory management multi threading and more using boost in new and existing applications integrating boost and the gang of four design patterns ready to run projects for visual studio appendices and exercises

introduces the fundamentals of object oriented programming and generic programming in c topics include classes objects and encapsulation inheritance and polymorphism and object oriented design with the uml

key benefit this comprehensive best seller is aimed at readers with little or no programming experience it teaches by presenting the concepts in the context of full working programs and takes an early objects approach the authors emphasize achieving program clarity through structured and object oriented programming software reuse and component oriented software construction key topics introduction to computers the internet and world wide introduction to c programming introduction to classes and objects control statements part 1 control statements part 2 functions and an introduction to recursion arrays and vectors pointers and pointer based strings classes a deeper look part 1 classes a deeper look part 2 object oriented programming inheritance object oriented programming polymorphism optional atm case study part 1 object oriented design with the uml optional atm case study part 2 implementing an object oriented design exception handling templates operator overloading string and array objects string processing with class string stream input output file and

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